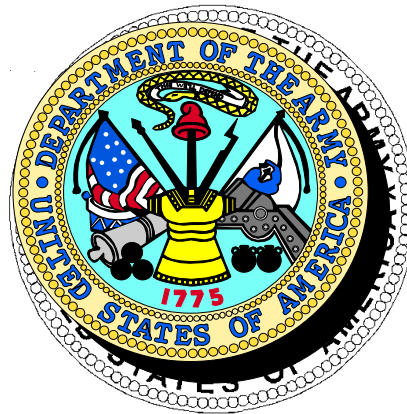


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Supporting Data FY 2006/2007 President's Budget
Submitted to OSD – February 2005

DESCRIPTIVE SUMMARIES OF THE



**RESEARCH, DEVELOPMENT, TEST AND EVALUATION
Army Appropriation, Budget Activities 4 and 5**

Department of the Army
Office of the Secretary of the Army (Financial Management and Comptroller)

Persuasive in Peace, Invincible in War

VOLUME II

UNCLASSIFIED

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**DESCRIPTIVE SUMMARIES FOR PROGRAM ELEMENTS
OF THE
RESEARCH, DEVELOPMENT, TEST AND
EVALUATION, ARMY
FY 2006/2007
PRESIDENT'S BUDGET SUBMISSION
FEBRUARY 2005**

**VOLUME II
Budget Activities 4 and 5**

**Department of the Army
Office of the Assistant Secretary of the Army (Financial Management and Comptroller)**

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**FY 2006/2007 RDT&E, ARMY
PROGRAM ELEMENT DESCRIPTIVE SUMMARIES**

INTRODUCTION AND EXPLANATION OF CONTENTS

1. General. The purpose of this document is to provide summary information concerning the Research, Development, Test and Evaluation, Army program. The Descriptive Summaries are comprised of R-2 (Army RDT&E Budget Item Justification – Program Element level), R-2A (Army RDT&E Budget Item Justification – project level) R-3 (Army RDT&E Cost Analysis), R-4 (Schedule Profile), R-4A (Schedule Profile Detail) and R-5 (Termination Liability funding for MDAPs) Exhibits, which provide narrative information on all RDT&E program elements and projects for FY 2004 through FY 2007.

2. Relationship of the FY 2006/2007 Budget Submission to the FY 2005 Budget Submitted to Congress. This paragraph provides a list of program elements restructured, transitioned, or established to provide specific program identification.

A. Program Element Restructures. Explanations for these changes can be found in the narrative sections of the Program Element R-2/R-3 Exhibits.

<u>OLD</u> <u>PE/PROJECT</u>	<u>NEW PROJECT TITLE</u>	<u>NEW</u> <u>PE/PROJECT</u>
0603639A/656	Advanced Munitions Demonstration	0603004A/232
0603474A/C09	Soldier Support Equipment – AD	0603827A/S52
0603474A/669	Clothing and Equipment Adv Development	0603827A/S53
060639A/656	Advanced Munitions Dem	0603004A/232
0603774A/131	Unique Identification	0603773A/U02
0603801A/B45	ACIS Advanced Development	0603827A/S51
0603802A/AS2	Small Arms Improvement	0603827A/S54
0603802A/AS3	Objective Individual Combat Weapon	0603827A/S55
0604645A/F59/F60/F62	FCS – Reconnaissance Platforms & Sensors	0604645A/F52
0604645A/F63/F64/F65	FCS – Unmanned Ground Vehicles	0604645A/F53
0604645A/F66/F67	Unattended Sensors	0604645A/F54
0604645A/F68/F69	Sustainment	0604645A/F55
0604645A/F70/F71	Manned Ground Vehicle	0604645A/F57
0604647A/F58	Non-Line of Sight Launch System	0604646A/F72

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OLD PE/PROJECT	NEW PROJECT TITLE	NEW PE/PROJECT
0604713A/680	Mounted Warrior	0604827A/S56
0604713A/667	Land Warrior	0604827A/S57
0604713A/668	Soldier Enhancement Program	0604601A/S58
0604713A/C40	Soldier Support Equipment – ED	0604601A/S59
0604713A/L40	Clothing & Equipment	0604601A/S60
0604801A/C45	ACIS Engineering Development	0604601A/S61
0604802A/134	Objective Individual Combat Weapon	0604601A/S62
0604802A/AS1	Small Arms Improvement	0604601A/S63
0604802A/AS6	Common Remotely Operated Weapon Systems (CROWS)	0604601A/S64
0604802A/613	XM395 Precision Guided Mortar Munitions	0604802A/AS8
0604804A/461	Joint High Speed Vessel	0208058A/JH1
0303150A/C86	Joint Command and Control - Army	0303158A/714

B. Developmental Transitions. Explanations for these changes can be found in the narrative sections of the Program Element R-2/R-3 Exhibits.

FROM PE/PROJECT	PROJECT TITLE	TO PE/PROJECT
0603869A/01B	Patriot/MEADS Combined Aggregate Program (CAP)	0604869A/M06
0604865A/01C	Patriot Advanced Capability (PAC)-3	0603869A/01B

C. Establishment of New FY 2006/2007 Program Elements/Projects. There are no major system new starts. Minor new initiatives for FY 2006/2007 are shown below with asterisks. The remaining programs listed are outyear initiatives, restructures beyond FY 2006/2007, or were previously funded from other Defense appropriations.

TITLE	PE/PROJECT
Agile Integration & Demonstration	0603125A/DF5
Armed Reconnaissance Helicopter	0604220A/53H*
General Fund Enterprise Business System (GFEBs)	0604822A/GF5*
HQDA Decision Support Tools & Services	0605718A/S02*
Training & Doctrine command (TRAC) Modeling & Simulation & Training	0605718A/S03*
Simulation Technology (SIMTECH) Program	0605718A/S05
Apache Block III	0203744A/D17

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D. FY 2006 programs for which funding existed in the FY 2005 Amended President's Budget Submit (March 2004), but which are no longer funded beginning in FY 2006.

<u>PE/PROJECT</u>	<u>TITLE</u>	<u>BRIEF EXPLANATION</u>
0603305A/TR3	MTHEL	Program Complete
0603639A/694	Medium Caliber Ammunition	Program Terminated
0603639A/64B	105mm Conventional Tank Ammunition	Program in Production
0603639A/694	120mm conventional Ammunition	Program in Production
0604329A/013	Joint Common Missile	Program Terminated
0604611A	Javelin	Program in Production
0604710A/L75	Profiler	Program Completed
0604819A	LOSAT	Program Terminated
0604823A/L85	Firefinder AN/TPQ-47*	Program Terminated

* Also known as Phoenix Battlefield Sensor System AN/TPQ-47

3. Classification. This document contains no classified data. Classified/Special Access Programs that are submitted offline are listed below.

0203806A/Z02	0603005A/C66	0603710A/C65
0203808A/E11	0603009A/B18/B31	0604328A/C71
0301359A	0603020A/B77/B84/B96	
0602122A/B72/622	0603322A/B92	

4. Performance Metrics. Performance metrics used in the preparation of this justification book may be found in the FY 2006 Army Performance Budget Justification Book, dated 18 February 2005.

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 Summary

Exhibit R-1

08-Feb-2005

Summary Recap of Budget Activities	FY 2004	Thousands of Dollars	
		FY 2005	FY 2006
Basic Research	369,208	392,864	307,594
Applied Research	1,046,041	1,117,659	671,302
Advanced Technology Development	1,187,066	1,385,067	756,359
Advanced Component Development and Prototypes	874,216	874,325	364,973
System Development and Demonstration	4,499,746	4,580,173	5,225,675
Management Support	1,140,384	1,173,909	1,092,650
Operational System Development	<u>1,085,560</u>	<u>1,033,622</u>	<u>1,315,271</u>
Total RDT&E, Army	10,202,221	10,557,619	9,733,824

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Exhibit R-1

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Line No.	Program Element Number	Act	Item	Thousands of Dollars		
				FY 2004	FY 2005	FY 2006
Basic research						
1	0601101A	01	IN-HOUSE LABORATORY INDEPENDENT RESEARCH	23,138	23,077	20,542
2	0601102A	01	DEFENSE RESEARCH SCIENCES	151,079	163,443	137,898
3	0601103A	01	UNIVERSITY RESEARCH SCIENCES (H)	82,473	83,959	67,201
4	0601104A	01	UNIVERSITY AND INDUSTRY RESEARCH CENTERS	96,549	100,066	81,953
5	0601105A	01	FORCE HEALTH PROTECTION	15,969	22,319	0
Total: Basic research				369,208	392,864	307,594
Applied Research						
6	0602105A	02	MATERIALS TECHNOLOGY	40,211	50,788	17,559
7	0602120A	02	SENSORS AND ELECTRONIC SURVIVABILITY	25,381	38,433	32,147
8	0602122A	02	TRACTOR HIP	5,683	6,406	7,804
9	0602211A	02	AVIATION TECHNOLOGY	39,406	47,780	34,295
10	0602270A	02	EW TECHNOLOGY	16,570	19,703	19,129
11	0602303A	02	MISSILE TECHNOLOGY	92,106	82,781	62,524
12	0602307A	02	ADVANCED WEAPONS TECHNOLOGY	14,794	24,495	21,139
13	0602308A	02	ADVANCED CONCEPTS AND SIMULATION	30,611	22,721	16,013
14	0602601A	02	COMBAT VEHICLE AND AUTOMOTIVE TECHNOLOGY	125,893	114,108	64,883
15	0602618A	02	BALLISTICS TECHNOLOGY	57,537	54,889	49,163
16	0602622A	02	CHEMICAL, SMOKE AND EQUIPMENT DEFEATING TECHNOLOGY	21,851	7,585	2,519
17	0602623A	02	JOINT SERVICE SMALL ARMS PROGRAM	5,683	11,273	5,703
18	0602624A	02	WEAPONS AND MUNITIONS TECHNOLOGY	75,714	102,442	37,824
19	0602705A	02	ELECTRONICS AND ELECTRONIC DEVICES	77,267	102,768	39,554
20	0602709A	02	NIGHT VISION TECHNOLOGY	21,634	26,406	23,823
21	0602712A	02	COUNTERMINE SYSTEMS	26,170	26,279	19,293
22	0602716A	02	HUMAN FACTORS ENGINEERING TECHNOLOGY	24,056	20,656	17,482
23	0602720A	02	ENVIRONMENTAL QUALITY TECHNOLOGY	31,007	22,369	16,417
24	0602782A	02	COMMAND, CONTROL, COMMUNICATIONS TECHNOLOGY	18,223	27,416	21,787
25	0602783A	02	COMPUTER AND SOFTWARE TECHNOLOGY	4,031	3,862	3,590
26	0602784A	02	MILITARY ENGINEERING TECHNOLOGY	51,885	52,500	47,046
27	0602785A	02	MANPOWER/PERSONNEL/TRAINING TECHNOLOGY	15,143	14,846	15,207
28	0602786A	02	LOGISTICS TECHNOLOGY	49,642	54,051	21,707
29	0602787A	02	MEDICAL TECHNOLOGY	175,543	183,102	74,694
Total: Applied Research				1,046,041	1,117,659	671,302

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Line No.	Program Element Number	Act	Item	Thousands of Dollars		
				FY 2004	FY 2005	FY 2006
Advanced technology development						
30	0603001A	03	WARFIGHTER ADVANCED TECHNOLOGY	65,848	77,022	63,754
31	0603002A	03	MEDICAL ADVANCED TECHNOLOGY	214,453	299,561	45,160
32	0603003A	03	AVIATION ADVANCED TECHNOLOGY	83,686	96,465	48,318
33	0603004A	03	WEAPONS AND MUNITIONS ADVANCED TECHNOLOGY	52,927	83,337	74,927
34	0603005A	03	COMBAT VEHICLE AND AUTOMOTIVE ADVANCED TECHNOLOGY	266,576	279,260	142,866
35	0603006A	03	COMMAND, CONTROL, COMMUNICATIONS ADVANCED TECHNOLOGY	11,168	9,544	12,066
36	0603007A	03	MANPOWER, PERSONNEL AND TRAINING ADVANCED TECHNOLOGY	8,787	8,070	6,783
37	0603008A	03	ELECTRONIC WARFARE ADVANCED TECHNOLOGY	58,281	57,662	45,322
38	0603009A	03	TRACTOR HIKE	7,570	7,723	8,777
39	0603015A	03	NEXT GENERATION TRAINING & SIMULATION SYSTEMS	15,421	26,900	19,982
40	0603020A	03	TRACTOR ROSE	4,096	4,537	4,956
41	0603103A	03	EXPLOSIVE DEMILITARIZATION TECHNOLOGY	24,468	18,405	9,865
42	0603105A	03	MILITARY HIV RESEARCH	13,847	13,552	6,842
43	0603125A	03	COMBATING TERRORISM, TECHNOLOGY DEVELOPMENT FOR	8,480	8,034	6,306
44	0603238A	03	GLOBAL SURVEILLANCE/AIR DEFENSE/PRECISION STRIKE T	12,317	10,284	12,111
45	0603270A	03	EW TECHNOLOGY	24,979	21,357	16,801
46	0603313A	03	MISSILE AND ROCKET ADVANCED TECHNOLOGY	119,301	115,332	70,066
47	0603322A	03	TRACTOR CAGE	7,386	12,776	15,406
48	0603606A	03	LANDMINE WARFARE AND BARRIER ADVANCED TECHNOLOGY	29,215	33,621	25,327
49	0603607A	03	JOINT SERVICE SMALL ARMS PROGRAM	9,431	9,675	6,581
50	0603654A	03	LINE-OF-SIGHT TECHNOLOGY DEMONSTRATION	8,607	0	0
51	0603710A	03	NIGHT VISION ADVANCED TECHNOLOGY	82,800	102,047	51,761
52	0603728A	03	ENVIRONMENTAL QUALITY TECHNOLOGY DEMONSTRATIONS	20,155	17,933	12,606
53	0603734A	03	MILITARY ENGINEERING ADVANCED TECHNOLOGY	12,909	25,657	7,301
54	0603772A	03	ADVANCED TACTICAL COMPUTER SCIENCE AND SENSOR TECH	24,358	46,313	42,475
Total: Advanced technology development				1,187,066	1,385,067	756,359
Advanced Component Development and Prototypes						
55	0603024A	04	UNIQUE ITEM IDENTIFICATION (UID)	0	0	1,500
56	0603305A	04	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION	101,208	112,069	14,573
57	0603308A	04	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION (DEM/VAL)	33,735	32,131	9,284
58	0603327A	04	AIR AND MISSILE DEFENSE SYSTEMS ENGINEERING	115,342	109,217	83,063
59	0603619A	04	LANDMINE WARFARE AND BARRIER - ADV DEV	34,713	15,843	0
60	0603627A	04	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-ADV DEV	9,634	9,342	5,733

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Line No.	Program Element Number	Act	Item	Thousands of Dollars		
				FY 2004	FY 2005	FY 2006
61	0603639A	04	TANK AND MEDIUM CALIBER AMMUNITION	24,737	26,674	0
62	0603653A	04	ADVANCED TANK ARMAMENT SYSTEM (ATAS)	57,621	49,712	26,712
63	0603747A	04	SOLDIER SUPPORT AND SURVIVABILITY	13,133	13,234	3,393
64	0603766A	04	TACTICAL SUPPORT DEVELOPMENT - ADV DEV (TIARA)	16,024	15,218	18,907
65	0603774A	04	NIGHT VISION SYSTEMS ADVANCED DEVELOPMENT	6,651	17,052	6,885
66	0603779A	04	ENVIRONMENTAL QUALITY TECHNOLOGY DEM/VAL	38,461	41,651	5,166
67	0603782A	04	WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	77,275	95,321	131,081
68	0603790A	04	NATO RESEARCH AND DEVELOPMENT	2,608	4,600	4,902
69	0603801A	04	AVIATION - ADV DEV	13,583	16,017	6,249
70	0603802A	04	WEAPONS AND MUNITIONS - ADV DEV	29,906	8,321	0
71	0603804A	04	LOGISTICS AND ENGINEER EQUIPMENT - ADV DEV	12,212	15,993	13,375
72	0603805A	04	COMBAT SERVICE SUPPORT CONTROL SYSTEM EVALUATION A	8,151	6,138	10,659
73	0603807A	04	MEDICAL SYSTEMS - ADV DEV	12,715	20,286	10,134
74	0603827A	04	SOLDIER SYSTEMS - ADVANCED DEVELOPMENT	0	0	10,595
75	0603850A	04	INTEGRATED BROADCAST SERVICE (JMIP/DISTP)	1,968	4,294	2,762
76	0603856A	04	SCAMP BLOCK II	27,716	9,798	0
77	0603869A	04	MEADS CONCEPTS - DEM/VAL	236,823	251,414	0
Total: Advanced Component Development and Prototypes				874,216	874,325	364,973
System Development and Demonstration						
78	0604201A	05	AIRCRAFT AVIONICS	45,499	79,356	23,451
79	0604220A	05	ARMED, DEPLOYABLE OH-58D	0	43,366	13,964
80	0604223A	05	COMANCHE	1,030,510	0	0
81	0604270A	05	EW DEVELOPMENT	31,715	16,515	32,179
82	0604280A	05	JOINT TACTICAL RADIO SYSTEM	128,611	117,259	156,665
83	0604321A	05	ALL SOURCE ANALYSIS SYSTEM	19,258	6,605	7,973
84	0604328A	05	TRACTOR CAGE	15,482	13,576	16,099
85	0604329A	05	COMMON MISSILE	90,413	112,185	0
86	0604601A	05	INFANTRY SUPPORT WEAPONS	27,344	33,712	34,627
87	0604604A	05	MEDIUM TACTICAL VEHICLES	4,169	14,046	1,886
88	0604609A	05	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-ENG DEV	11,548	3,639	0
89	0604611A	05	JAVELIN	913	905	0
90	0604622A	05	FAMILY OF HEAVY TACTICAL VEHICLES	16,282	19,631	3,415
91	0604633A	05	AIR TRAFFIC CONTROL	2,402	2,012	4,508
92	0604642A	05	LIGHT TACTICAL WHEELED VEHICLES	17,377	9,587	0
93	0604645A	05	ARMORED SYSTEMS MODERNIZATION (ASM)-ENG. DEV.	1,373,156	2,268,236	3,065,629

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Line No.	Program Element Number	Act	Item	Thousands of Dollars		
				FY 2004	FY 2005	FY 2006
94	0604646A	05	NON LINE OF SIGHT LAUNCH SYSTEM	0	55,794	231,554
95	0604647A	05	NON LINE OF SIGHT CANNON	251,344	476,736	107,587
96	0604710A	05	NIGHT VISION SYSTEMS - ENG DEV	37,452	26,119	26,449
97	0604713A	05	COMBAT FEEDING, CLOTHING, AND EQUIPMENT	95,484	98,445	3,383
98	0604715A	05	NON-SYSTEM TRAINING DEVICES - ENG DEV	68,381	49,615	61,090
99	0604716A	05	TERRAIN INFORMATION - ENG DEV	6,662	3,152	0
100	0604726A	05	INTEGRATED METEOROLOGICAL SUPPORT SYSTEM	3,160	2,450	0
101	0604741A	05	AIR DEFENSE COMMAND, CONTROL AND INTEL - ENG	27,974	26,343	29,012
102	0604742A	05	CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	16,227	41,153	40,572
103	0604746A	05	AUTOMATIC TEST EQUIPMENT DEVELOPMENT	10,918	8,748	54
104	0604760A	05	DISTRIBUTIVE INTERACTIVE SIMULATIONS (DIS) - ENGIN	24,883	25,477	22,057
105	0604766A	05	TACTICAL EXPLOITATION SYSTEM/DCGS (TIARA)	25,108	21,505	0
106	0604768A	05	BRILLIANT ANTI-ARMOR SUBMUNITION (BAT)	9,550	1,748	0
107	0604770A	05	JOINT SURVEILLANCE/TARGET ATTACK RADAR SYSTEM	4,492	0	0
108	0604778A	05	POSITIONING SYSTEMS DEVELOPMENT (SPACE)	1,503	1,962	0
109	0604780A	05	COMBINED ARMS TACTICAL TRAINER (CATT)	3,817	18,316	37,471
110	0604783A	05	JOINT NETWORK MANAGEMENT SYSTEM	9,011	10,279	5,092
111	0604801A	05	AVIATION - ENG DEV	3,227	3,239	0
112	0604802A	05	WEAPONS AND MUNITIONS - ENG DEV	151,558	154,356	87,034
113	0604804A	05	LOGISTICS AND ENGINEER EQUIPMENT - ENG DEV	84,398	90,517	13,353
114	0604805A	05	COMMAND, CONTROL, COMMUNICATIONS SYSTEMS - ENG DEV	209,197	218,402	393,062
115	0604807A	05	MEDICAL MATERIEL/MEDICAL BIOLOGICAL DEFENSE EQUIPM	21,820	19,325	5,627
116	0604808A	05	LANDMINE WARFARE/BARRIER - ENG DEV	92,808	57,116	80,560
117	0604814A	05	ARTILLERY MUNITIONS - EMD	118,323	133,167	113,368
118	0604817A	05	COMBAT IDENTIFICATION	11,402	12,069	2,973
119	0604818A	05	ARMY TACTICAL COMMAND & CONTROL HARDWARE & SOFTWARE	97,612	64,811	66,980
120	0604819A	05	LOSAT	29,417	21,744	0
121	0604820A	05	RADAR DEVELOPMENT	0	5,851	5,080
122	0604822A	05	GENERAL FUND ENTERPRISE BUSINESS SYSTEM (GFEB)	0	0	71,119
123	0604823A	05	FIREFINDER	25,883	21,764	46,061
124	0604827A	05	SOLDIER SYSTEMS - WARRIOR DEM/VAL	0	0	57,818
125	0604854A	05	ARTILLERY SYSTEMS - EMD	31,155	12,022	5,476
126	0604865A	05	PATRIOT PAC-3 THEATER MISSILE DEFENSE ACQ - EMD	151,318	61,482	0
127	0604869A	05	PATRIOT/MEADS COMBINED AGGREGATE PROGRAM (CAP)	0	0	288,785
128	0605013A	05	INFORMATION TECHNOLOGY DEVELOPMENT	60,983	95,836	63,662
Total: System Development and Demonstration				4,499,746	4,580,173	5,225,675

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Line No.	Program Element Number	Act	Item	Thousands of Dollars		
				FY 2004	FY 2005	FY 2006
Management support						
129	0604256A	06	THREAT SIMULATOR DEVELOPMENT	25,008	29,694	23,796
130	0604258A	06	TARGET SYSTEMS DEVELOPMENT	17,153	13,370	10,855
131	0604759A	06	MAJOR T&E INVESTMENT	76,732	58,988	64,498
132	0605103A	06	RAND ARROYO CENTER	28,161	21,854	23,800
133	0605301A	06	ARMY KWAJALEIN ATOLL	177,197	139,939	154,535
134	0605326A	06	CONCEPTS EXPERIMENTATION	39,175	24,190	31,653
135	0605502A	06	SMALL BUSINESS INNOVATIVE RESEARCH	0	261,896	0
136	0605601A	06	ARMY TEST RANGES AND FACILITIES	233,336	191,688	369,943
137	0605602A	06	ARMY TECHNICAL TEST INSTRUMENTATION AND TARGETS	72,595	60,142	62,687
138	0605604A	06	SURVIVABILITY/LETHALITY ANALYSIS	53,408	47,543	38,306
139	0605605A	06	DOD HIGH ENERGY LASER TEST FACILITY	23,347	15,098	17,688
140	0605606A	06	AIRCRAFT CERTIFICATION	3,826	3,419	2,748
141	0605702A	06	METEOROLOGICAL SUPPORT TO RDT&E ACTIVITIES	11,941	8,415	8,829
142	0605706A	06	MATERIEL SYSTEMS ANALYSIS	19,957	17,675	15,517
143	0605709A	06	EXPLOITATION OF FOREIGN ITEMS	4,421	4,672	4,710
144	0605712A	06	SUPPORT OF OPERATIONAL TESTING	85,477	72,284	75,993
145	0605716A	06	ARMY EVALUATION CENTER	59,362	61,212	57,305
146	0605718A	06	SIMULATION & MODELING FOR ACQ, RQTS, & TNG (SMART)	3,276	1,853	9,437
147	0605801A	06	PROGRAMWIDE ACTIVITIES	80,336	58,106	54,269
148	0605803A	06	TECHNICAL INFORMATION ACTIVITIES	53,742	27,534	32,237
149	0605805A	06	MUNITIONS STANDARDIZATION, EFFECTIVENESS & SAFETY	50,758	38,159	16,922
150	0605857A	06	ENVIRONMENTAL QUALITY TECHNOLOGY MGMT SUPPORT	6,098	4,336	4,014
151	0605898A	06	MANAGEMENT HEADQUARTERS (RESEARCH AND DEVELOPMENT)	15,078	11,842	12,908
Total: Management support				1,140,384	1,173,909	1,092,650
Operational system development						
152	0603778A	07	MLRS PRODUCT IMPROVEMENT PROGRAM	83,050	105,444	114,297
153	0603820A	07	WEAPONS CAPABILITY MODIFICATIONS UAV	0	0	0
154	0102419A	07	JOINT LAND ATTACK CRUISE MISSILES DEFENSE (JLENS)	57,803	79,316	106,420
155	0203610A	07	DOMESTIC PREPAREDNESS AGAINST WEAPONS OF MASS DEST	3,916	0	0
156	0203726A	07	ADV FIELD ARTILLERY TACTICAL DATA SYSTEM	28,308	17,269	16,064
157	0203735A	07	COMBAT VEHICLE IMPROVEMENT PROGRAMS	31,018	17,174	12,030

UNCLASSIFIED
 Department of the Army
 FY 2006 RDT&E Program
 President's Budget FY 2006/2007

Exhibit R-1

08-Feb-2005

Line No.	Program Element Number	Act	Item	Thousands of Dollars		
				FY 2004	FY 2005	FY 2006
158	0203740A	07	MANEUVER CONTROL SYSTEM	38,747	23,350	44,903
159	0203744A	07	AIRCRAFT MODIFICATIONS/PRODUCT IMPROVEMENT PROGRAM	273,381	242,628	409,103
160	0203752A	07	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM	5,285	7,121	2,066
161	0203758A	07	DIGITIZATION	17,865	29,045	12,343
162	0203759A	07	FORCE XXI BATTLE COMMAND, BRIGADE AND BELOW (FBCB2)	47,414	22,546	20,201
163	0203801A	07	MISSILE/AIR DEFENSE PRODUCT IMPROVEMENT PROGRAM	45,587	32,082	16,188
164	0203802A	07	OTHER MISSILE PRODUCT IMPROVEMENT PROGRAMS	1,050	4,659	23,560
165	0203806A	07	TRACTOR RUT	8,665	3,181	0
166	0203808A	07	TRACTOR CARD	9,060	8,644	6,797
167	0208010A	07	JOINT TACTICAL COMMUNICATIONS PROGRAM (TRI-TAC)	16,196	17,414	24,906
168	0208053A	07	JOINT TACTICAL GROUND SYSTEM	9,561	9,822	12,854
169	0208058A	07	JOINT HIGH SPEED VESSEL (JHSV)	0	0	3,261
170	0303028A	07	SECURITY AND INTELLIGENCE ACTIVITIES	15,712	14,398	2,992
171	0303140A	07	INFORMATION SYSTEMS SECURITY PROGRAM	20,291	28,618	22,903
172	0303141A	07	GLOBAL COMBAT SUPPORT SYSTEM	54,656	90,351	79,752
173	0303142A	07	SATCOM GROUND ENVIRONMENT (SPACE)	85,511	51,829	58,659
174	0303150A	07	WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM	16,762	18,459	13,647
175	0303158A	07	JOINT COMMAND AND CONTROL - ARMY	0	0	1,696
176	0305114A	07	TRAFFIC CONTROL, APPROACH AND LANDING SYSTEM-FY 19	935	0	0
177	0305204A	07	TACTICAL UNMANNED AERIAL VEHICLES	67,931	53,592	139,610
178	0305206A	07	AIRBORNE RECONNAISSANCE ADV DEVELOPMENT	4,651	8,111	5,398
179	0305208A	07	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS (JMIP)	36,995	53,911	91,587
180	0702239A	07	AVIONICS COMPONENT IMPROVEMENT PROGRAM	0	955	994
181	0708045A	07	END ITEM INDUSTRIAL PREPAREDNESS ACTIVITIES	84,980	88,120	68,505
182	0P0GMTOT	07	OTHER ARMY PROGRAMS	19,737	4,996	3,966
183	1001018A	07	NATO JOINT STARS	493	587	569
Total: Operational system development				1,085,560	1,033,622	1,315,271
				10,202,221	10,557,619	9,733,824

Total: RDT&E, Army

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Line No.	PE	Program Element Title	Page
#4 - Advanced Component Development and Prototypes			
55	0603305A	Army Missile Defense Systems Integration	1
56	0603308A	Army Missile Defense Systems Integration (Dem/Val)	20
57	0603327A	Air and Missile Defense Systems Engineering	34
58	0603619A	Landmine Warfare and Barrier - Adv Dev	80
59	0603627A	Smoke, Obscurant and Target Defeating Sys-Adv Dev	89
60	0603639A	Tank and Medium Caliber Ammunition	103
61	0603653A	ADVANCED TANK ARMAMENT SYSTEM (ATAS)	105
62	0603747A	Soldier Support and Survivability	113
63	0603766A	Tactical Support Development - Adv Dev (TIARA)	127
64	0603773A	Unique Identification (UID)	133
65	0603774A	Night Vision Systems Advanced Development	139
66	0603779A	Environmental Quality Technology Dem/Val	152
67	0603782A	WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	164
68	0603790A	NATO Research and Development	172
69	0603801A	Aviation - Adv Dev	182
70	0603802A	Weapons and Munitions - Adv Dev	196
71	0603804A	Logistics and Engineer Equipment - Adv Dev	200
72	0603805A	Combat Service Support Control System Evaluation a	231
73	0603807A	Medical Systems - Adv Dev	239
74	0603827A	Soldier Systems - Advanced Development	258

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75	0603850A	Integrated Broadcast Service (JMIP/DISTP)	273
76	0603856A	SCAMP Block II	280
77	0603869A	Meads Concepts - Dem/Val	283
#5 - System Development and Demonstration			
78	0604201A	AIRCRAFT AVIONICS	293
79	0604220A	Armed, Deployable OH-58D	303
81	0604270A	EW DEVELOPMENT	314
82	0604280A	Joint Tactical Radio System	347
83	0604321A	ALL SOURCE ANALYSIS SYSTEM	355
85	0604329A	Common Missile	379
86	0604601A	Infantry Support Weapons	382
87	0604604A	MEDIUM TACTICAL VEHICLES	422
88	0604609A	Smoke, Obscurant and Target Defeating Sys-Eng Dev	430
90	0604622A	Family of Heavy Tactical Vehicles	444
91	0604633A	AIR TRAFFIC CONTROL	471
92	0604642A	LIGHT TACTICAL WHEELED VEHICLES	479
93	0604645A	Armored Systems Modernization (ASM)-Eng. Dev.	485
94	0604646A	Non Line of Sight Launch System	539
95	0604647A	Non Line of Sight Cannon	547
96	0604710A	Night Vision Systems - Eng Dev	557

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97	0604713A	Combat Feeding, Clothing, and Equipment	585
98	0604715A	Non-System Training Devices - Eng Dev	605
99	0604716A	TERRAIN INFORMATION - ENG DEV	619
100	0604726A	Integrated Meteorological Support System	623
101	0604741A	Air Defense Command, Control and Intel - Eng	629
102	0604742A	CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	646
103	0604746A	Automatic Test Equipment Development	659
104	0604760A	Distributive Interactive Simulations (DIS) - Engin	673
105	0604766A	Tactical Exploitation System/DCGS (TIARA)	701
108	0604778A	Positioning Systems Development (SPACE)	704
109	0604780A	COMBINED ARMS TACTICAL TRAINER (CATT)	707
110	0604783A	JOINT NETWORK MANAGEMENT SYSTEM	732
111	0604801A	Aviation - Eng Dev	740
112	0604802A	Weapons and Munitions - Eng Dev	743
113	0604804A	Logistics and Engineer Equipment - Eng Dev	791
114	0604805A	Command, Control, Communications Systems - Eng Dev	858
115	0604807A	Medical Materiel/Medical Biological Defense Equipm	912
116	0604808A	Landmine Warfare/Barrier - Eng Dev	937
117	0604814A	Artillery Munitions - EMD	963
118	0604817A	Combat Identification	973
119	0604818A	Army Tactical Command & Control Hardware & Softwar	982

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120	0604819A	LOSAT	1028
121	0604820A	RADAR DEVELOPMENT	1031
122	0604822A	General Fund Enterprise Business System (GFEBS)	1039
123	0604823A	FIREFINDER	1046
124	0604827A	Soldier Systems - Warrior Dem/Val	1067
125	0604854A	Artillery Systems - EMD	1081
126	0604865A	Patriot PAC-3 Theater Missile Defense Acq - EMD	1090
127	0604869A	Patriot/MEADS Combined Aggregate Program (CAP)	1099
128	0605013A	Information Technology Development	1109

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Program Element Title	PE	Line No.	Page
ADVANCED TANK ARMAMENT SYSTEM (ATAS)	0603653A	61	105
Air and Missile Defense Systems Engineering	0603327A	57	34
Air Defense Command, Control and Intel - Eng	0604741A	101	629
AIR TRAFFIC CONTROL	0604633A	91	471
AIRCRAFT AVIONICS	0604201A	78	293
ALL SOURCE ANALYSIS SYSTEM	0604321A	83	355
Armed, Deployable OH-58D	0604220A	79	303
Armored Systems Modernization (ASM)-Eng. Dev.	0604645A	93	485
Army Missile Defense Systems Integration	0603305A	55	1
Army Missile Defense Systems Integration (Dem/Val)	0603308A	56	20
Army Tactical Command & Control Hardware & Softwar	0604818A	119	982
Artillery Munitions - EMD	0604814A	117	963
Artillery Systems - EMD	0604854A	125	1081
Automatic Test Equipment Development	0604746A	103	659
Aviation - Adv Dev	0603801A	69	182
Aviation - Eng Dev	0604801A	111	740
Combat Feeding, Clothing, and Equipment	0604713A	97	585
Combat Identification	0604817A	118	973
Combat Service Support Control System Evaluation a	0603805A	72	231
COMBINED ARMS TACTICAL TRAINER (CATT)	0604780A	109	707
Command, Control, Communications Systems - Eng Dev	0604805A	114	858

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Program Element Title	PE	Line No.	Page
Common Missile	0604329A	85	379
CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	0604742A	102	646
Distributive Interactive Simulations (DIS) - Engin	0604760A	104	673
Environmental Quality Technology Dem/Val	0603779A	66	152
EW DEVELOPMENT	0604270A	81	314
Family of Heavy Tactical Vehicles	0604622A	90	444
FIREFINDER	0604823A	123	1046
General Fund Enterprise Business System (GFEBS)	0604822A	122	1039
Infantry Support Weapons	0604601A	86	382
Information Technology Development	0605013A	128	1109
Integrated Broadcast Service (JMIP/DISTP)	0603850A	75	273
Integrated Meteorological Support System	0604726A	100	623
JOINT NETWORK MANAGEMENT SYSTEM	0604783A	110	732
Joint Tactical Radio System	0604280A	82	347
Landmine Warfare and Barrier - Adv Dev	0603619A	58	80
Landmine Warfare/Barrier - Eng Dev	0604808A	116	937
LIGHT TACTICAL WHEELED VEHICLES	0604642A	92	479
Logistics and Engineer Equipment - Adv Dev	0603804A	71	200
Logistics and Engineer Equipment - Eng Dev	0604804A	113	791
LOSAT	0604819A	120	1028
Meads Concepts - Dem/Val	0603869A	77	283

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Program Element Title	PE	Line No.	Page
Medical Materiel/Medical Biological Defense Equipm	0604807A	115	912
Medical Systems - Adv Dev	0603807A	73	239
MEDIUM TACTICAL VEHICLES	0604604A	87	422
NATO Research and Development	0603790A	68	172
Night Vision Systems - Eng Dev	0604710A	96	557
Night Vision Systems Advanced Development	0603774A	65	139
Non Line of Sight Cannon	0604647A	95	547
Non Line of Sight Launch System	0604646A	94	539
Non-System Training Devices - Eng Dev	0604715A	98	605
Patriot PAC-3 Theater Missile Defense Acq - EMD	0604865A	126	1090
Patriot/MEADS Combined Aggregate Program (CAP)	0604869A	127	1099
Positioning Systems Development (SPACE)	0604778A	108	704
RADAR DEVELOPMENT	0604820A	121	1031
SCAMP Block II	0603856A	76	280
Smoke, Obscurant and Target Defeating Sys-Adv Dev	0603627A	59	89
Smoke, Obscurant and Target Defeating Sys-Eng Dev	0604609A	88	430
Soldier Support and Survivability	0603747A	62	113
Soldier Systems - Advanced Development	0603827A	74	258
Soldier Systems - Warrior Dem/Val	0604827A	124	1067
Tactical Exploitation System/DCGS (TIARA)	0604766A	105	701
Tactical Support Development - Adv Dev (TIARA)	0603766A	63	127

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Program Element Title	PE	Line No.	Page
Tank and Medium Caliber Ammunition	0603639A	60	103
TERRAIN INFORMATION - ENG DEV	0604716A	99	619
Unique Identification (UID)	0603773A	64	133
WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	0603782A	67	164
Weapons and Munitions - Adv Dev	0603802A	70	196
Weapons and Munitions - Eng Dev	0604802A	112	743

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603305A - Army Missile Defense Systems Integration

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	103267	112069	14573	15089	15553	14851	15471	10920	0	336524
TR3 MOBILE TACTICAL HIGH ENERGY LASER (MTHL)	51951	44308	0	0	0	0	0	0	0	99479
TR4 MISSILE DEFENSE INTEGRATION	37361	55021	1642	1741	1913	1258	1752	0	0	117762
TR5 MISSILE DEFENSE BATTLELAB	12077	12740	12931	13348	13640	13593	13719	10920	0	114482
TR6 ARMY AIR AND MISSILE DEFENSE	1878	0	0	0	0	0	0	0	0	4801

A. Mission Description and Budget Item Justification: This Program Element funds missile defense systems integration efforts for both the Army Space and Missile Defense Command (SMDC) and the Program Executive Office for Air, Space, and Missile Defense (PEO-ASMD).

SMDC: HQDA General Order No. 5, 1 March 1998, designated the US Army Space and Missile Defense Command (SMDC) as the Army specified proponent for space and Ground-Based Midcourse Ballistic Missile Defense and the operational integrator for Theater Missile Defense. This mission has evolved to include becoming the Army proponent for space and ground-based midcourse defense as well as the operational integrator for Global Missile Defense. SMDC has also become the Army Service Component Command (ASCC) for US Strategic Command (USSTRATCOM) and is the Army single point of contact for research, development and acquisition in support of Army Title 10 and USSTRATCOM missions. These missions include: Space, Global Missile Defense, Command, Control, Computers, Communications, Intelligence, Surveillance and Reconnaissance (C4ISR), Information Operations, and Global Strike.

PEO-AMD: The mission of the United States Army Program Executive Office for Air, Space, and Missile Defense (PEO ASMD) is to develop, acquire, and field Theater Air and Missile Defense (TAMD) systems. These systems provide the capabilities needed to defend friendly forces and assets against attack by enemy aircraft, cruise missiles, and theater ballistic missiles (TBMs). The Army is developing and procuring individual TAMD weapon systems that must be integrated to form a Family of Systems (FoS). It is the PEO's responsibility to ensure the Army TAMD FoS is developed as an integrated capability. The PEO must integrate Army and Joint requirements in order to satisfy both needs. The PEO must support interoperability systems engineering, simulation, analysis, and evaluation in order to integrate the Family of Systems. Funding will allow the PEO to sufficiently address both Army and Joint interoperability requirements, ensuring an effective Army TAMD FoS.

Project: TR3 (Mobile Tactical High Energy Laser): This project funded a chemical laser weapon system assessment and hardware design and risk reduction activities supporting design. Starting in FY06, all funding has been realigned to higher priority requirements. With the remaining FY05 funding, PM will perform an orderly shutdown, deliver an initial engineering design to address the current mortar and rocket threat, perform limited counter-mortar testing and prepare Tactical High Energy Laser (THEL) testbed for storage.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603305A - Army Missile Defense Systems Integration

Project TR4 funded the Force Development Integration Center (FDIC) to execute SMDC's specified proponent role for developing solutions to Doctrine, Organizations, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) issues. This project also funded the production of requirements for hardware and software solutions, the interfaces with technology development, and the development of operational and system architectures.

Project TR5 funds the Space and Missile Defense Battle Lab (SMDBL) to develop warfighting concepts, focus military science and technology research, and conduct warfighting experiments associated with SMDC's ASCC mission. Additionally, this project funds the delivery of innovations to the warfighter through prototyping, operational analysis, and experimentation in support of Current and Future Forces.

Project TR6 funds Integrated Composite Missile Structure.

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	53509	39092	67428
Current Budget (FY 2006/2007 PB)	112069	14573	15089
Total Adjustments	58560	-24519	-52339
Net of Program/Database Changes			
Congressional Program Reductions	-1886		
Congressional Rescissions			
Congressional Increases	63500		
Reprogrammings			
SBIR/STTR Transfer	-3054		
Adjustments to Budget Years		-24519	-52339

FY06/07 funds realigned to higher priority requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)**February 2005**

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603305A - Army Missile Defense Systems Integration

FY06 MTHEL Program (TR3) terminated.

FY05 Congressional adds: \$8.0 million for MTHEL in project TR3; also, \$55.5 million for projects in TR4. These TR4 projects are as follows: \$2.6 million for Advanced Battery Technology; \$1.5 million for Advanced Laser Electric Power (ALEP) Program; \$3.5 million for Advanced Strap-Down Seeker ; \$1.4 million for Anti-Stealth Research Passive Surveillance System; \$1.0 million for Ballute Technology Development; \$1 million for C4SR Visualization; \$3.0 million for Carbon Foam, Missile Defense Agency; \$1 million for Composite Chassis; \$2.4 million for Credible Threat Prediction Capability Development; \$1.4 million for Dielectric Enhanced Sensor System; \$1.0 million for the Eagle Eyes Nuclear Detection Program; \$1.4 million for Global Infrasound Monitoring of the Atmosphere; \$2.5 million for Integrated Composite Airframe Structure Program; \$1.0 million for Low Cost Avionics; \$2.1 million for Modeling and Simulation Activities; \$2.6 million for Multiple Component Army Flight Test; \$3.0 million for Nanoscience Initiative; \$10.5 million for Next Generation Hardware-in-the-loop Tool; \$3.0 million for Next Generation Passive Sensors; \$2.5 million for Remote Sensor Monitoring Technology Research Program to Characterize NCB Species; \$2.6 million for Spectral Operations Resources Center; \$3.0 million for Ultra Light UAV Sensor Platform; \$1.5 million for Vertical Integration for Missile Defense Data.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603305A - Army Missile Defense Systems Integration

PROJECT
TR3

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TR3 MOBILE TACTICAL HIGH ENERGY LASER (MTHEL)	51951	44308	0	0	0	0	0	0	0	99479

A. Mission Description and Budget Item Justification: This project funds weapon system prototype development/integration effort for Army Transformation applications. The Mobile Tactical High Energy Laser (MTHEL) development and integration effort is a follow-on to the combined US/Israel Tactical High Energy Laser Advanced Concept Technology Demonstration (THEL ACTD) program. The THEL ACTD was initiated in Jul 96 to evaluate the effectiveness of high energy lasers to negate the threat posed to population areas by short range Katyusha rockets, and was successfully completed in Oct 00. The THEL demonstrator is a complete fixed site weapon system which includes a HEL beam generator, based on deuterium fluoride chemical laser (DFCL) technologies; an acquisition, pointing, and tracking system; and a battle management system, including an organic fire control radar. The THEL device is currently being used as a MTHEL risk reduction testbed at the High Energy Laser Systems Test Facility (HELSTF). The demonstrated effectiveness of the fixed site THEL demonstrator led to the initiation of a system engineering trade study in FY01 to evaluate mobile THEL variants that meet both Israeli and US Army mission needs. The mission of the MTHEL is based on a Common Operational Requirement developed by the US Army Air Defense School and the Israeli Air Force. The work in this program element is consistent with the Army Directed Energy Master Plan and the Army Modernization Plan. Work in this program element is related to and fully coordinated with efforts in PE 0603308A (Army Missile Defense Systems Integration (DEM/VAL), PE 0605605 (DOD High Energy Laser Systems Test Facility) and PE 0602307A (Advanced Weapons Technology, Project 042 - High Energy Technology) in accordance with the ongoing Reliance joint planning process and contains no unwarranted duplication of effort among the military departments. Work is performed by the Program Executive Office, Missiles and Space (PEO MS), Cruise Missile Defense Systems (CMDS) Project Office in Huntsville, AL.

U.S. portion of program completes in FY05.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603305A - Army Missile Defense Systems Integration

PROJECT
TR3

Accomplishments/Planned Program

- o Assess MTHEL Common Operational Requirements Document and Lethality testing results. Major efforts include:
- o Modify THEL component and subsystem designs for pressure recovery, exhaust management, thermal management closed cycle operation, gain generation, vibration damping and beam control for MTHEL application
- o Conduct lethality and propagation testing to validate codes related to system engineering and performance specifications
- o Integrate mature chemical HEL component technologies into weapon prototype design (FY03 - FY05)
- o Conduct risk reduction and design verification testing (FY03 - FY05)
- o Conduct static and dynamic lethality tests against extended threat set (FY03 - FY05)
- o Select components and complete prototype preliminary design review and evaluation (FY05)

FY 2004	FY 2005	FY 2006	FY 2007
51951	44308	0	0
Totals	51951	44308	0

B. Other Program Funding Summary: Not applicable for this item.

Under the terms of the current Letter of Request (LOR), Israel is expected to provide \$35M in \$7M increments per year, FY04 thru FY08, to support the MTHEL prototype development program. The current MTHEL prototype program was restructured to provide the MTHEL prototype in FY08 with limited testing in FY09 due to Israel's reduced funding. MTHEL risk reduction/design verification tests and static/dynamic lethality tests against an extended threat set continue thru FY 05 using the existing MTHEL Testbed at HELSTF. In FY04 and FY 05, Congress added \$17.0 million and \$8.0 million, respectively, for the MTHEL effort.

C. Acquisition Strategy: MTHEL prototype development activities continue in FY05. The MTHEL acquisition strategy is to develop and integrate an operational weapon prototype using demonstrated chemical laser, advanced beam control and supporting technologies with links into both the Israeli and US Army operational architectures. Based on the detailed System Engineering Trade Studies, and static and dynamic lethality testing, the MTHEL product office in consultation with Israel Ministry of Defense Product Office selected demonstrated technologies to be integrated into a mobile tactical high energy laser system to address a common set of missions.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603305A - Army Missile Defense Systems Integration

PROJECT
TR4

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TR4 MISSILE DEFENSE INTEGRATION	37361	55021	1642	1741	1913	1258	1752	0	0	117762

A. Mission Description and Budget Item Justification: HQDA General Order No. 5, 1 March 1998, designated the US Army Space and Missile Defense Command (SMDC), the Army specified proponent for Ground-Based Midcourse Ballistic Missile Defense, and the Army operational integrator for Theater Missile Defense (TMD). As such, SMDC is responsible to develop warfighting concepts, conduct warfighting experiments to validate those concepts, identify capabilities needed to implement the validated concepts, and develop Doctrine, Training, Materiel, Leader Development, Personnel and Facilities (DOTMLPF) solutions to realize those capabilities.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue efforts to integrate concepts and DOTMLPF solutions for Army missile defense capabilities, across the four domains of missile defense (passive defense, active defense, attack operations and battle management). Represent Army positions and defend Army equities in Joint/DoD and inter-Service activities.	0	1822	1642	1741
Includes FY05 Congressional Add for Interactive Modeling and Simulation; Dielectric Enhanced Sensor System; Advanced Battery Technology; Next Generation Passive Surveillance Systems; Vertical Integration for Missile Defense Surveillance Data; Global Infrasonic Monitoring of Atmosphere; Ballute Technology Development; Nanoscience Initiative; Remote Sensor Monitoring Technology; Ultra Light UAV Sensor Platform; Credible Threat Prediction Capability Development; Advanced Laser Electric Power Program; Composite Chassis; Multiple Component Army Flight Test; Low Cost Avionics; Advanced Strap-Down Seeker; Carbon Foam Missile Defense Agency; Eagle Eyes Nuclear Detection Program; Next Generation Hardware-in-the-loop; integrated Composite Airframe Structure Program; Anti-Stealth Research-Passive Surveillance System; C4ISR Visualization; Spectral Operations Resources Center.	37361	53199	0	0
Totals	37361	55021	1642	1741

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603305A - Army Missile Defense Systems Integration

PROJECT

TR4

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Program supports the continuous integration of Army missile defense capabilities and Doctrine, Training, Material, Leader Development, Personnel and Facilities (DOTMLPF) solutions. Various performers will conduct planned accomplishments.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
**0603305A - Army Missile Defense Systems
 Integration**

PROJECT
TR4

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various		Various	47355	53199	1-4Q	0		0		0	100554	0
Subtotal:			47355	53199		0		0		0	100554	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Govt support & support contracts	Various	Various	5093	1822	1-4Q	1642	1-4Q	1741	1-4Q	0	10298	0
Subtotal:			5093	1822		1642		1741		0	10298	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603305A - Army Missile Defense Systems
Integration

PROJECT
TR4

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			52448	55021		1642		1741		0	110852	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603305A - Army Missile Defense Systems Integration

PROJECT
TR4

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
Continue integration of Army missile defense capabilities & DOTMLPF solutio																																								
ATOC-Hardware & software integration																																								
ATOC-Fabrication of hybrid vehicle base testbed																																								
ATOC-Quality Assurance of testbed																																								
ATOC-Component & subsystem testing																																								
ATOC-Field Testing																																								
ATOC-Data reduction, analysis, and reporting																																								
Execute Congressional adds																																								

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603305A - Army Missile Defense Systems Integration

PROJECT
TR4

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Continue integration of Army missile defense capabilities and DOTMLPF solutions	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
ATOC - Hardware & software Integration	2-3Q							
ATOC - Fabrication of hybrid vehicle base testbed	3Q							
ATOC - Quality assurance of testbed	3Q							
Execute Congressional adds		1-4Q						
ATOC - Component and subsystem testing	3Q							
ATOC - Field testing	4Q							
ATOC - Data reduction, analysis, and reporting	4Q	1Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603305A - Army Missile Defense Systems Integration

PROJECT
TR5

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TR5 MISSILE DEFENSE BATTLELAB	12077	12740	12931	13348	13640	13593	13719	10920	0	114482

A. Mission Description and Budget Item Justification: This project funds the delivery of innovations to the warfighter in the Space and Missile Defense Command mission areas of Missile Defense, Space, Information Operations (IO), Global Strike (GS), Command, Control, Communications, Intelligence, Surveillance and Reconnaissance (C4ISR). The innovations are provided through prototyping, operational analysis and experimentation to support the Current and Future Forces. The project supports the Army Service Component Command responsibilities for integration of Army capabilities into U.S. Strategic Command.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes	PE NUMBER AND TITLE 0603305A - Army Missile Defense Systems Integration		PROJECT TR5	
<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
<p>Experiments/Advanced Prototype components into Command and Control (C2) Systems - Experiments assessed/exploited Doctrine, Organizations, Training, Material, Leadership and Education, Personnel and Facilities (DOTMFLPF) issues. Participated in major Army and Joint Experiments integrating space, missile defense, IO, GS and C4ISR organizational/operational concepts into the Army's Transformation Campaign Plan (TCP). Assessed space, missile defense, IO, GS and C4ISR impacts on doctrine and materiel. Twelve experiments were completed in FY04. These include Total Defender; , Unit of Action-Concept Experimentation Program; Combined Arms Battalion Experiment, Joint Project Optic Windmill (JPOW) 8, Nimble Titan, Army Aviation Expeditionary Force and JEFX 04. Seventeen experiments are scheduled for FY05. These include Amalgam Virgo, Joint Expeditionary Force Experiment (JEFX) 05, Nimble Titan 05, Total Defender, Unit of Employment Intelligence, Surveillance and Reconnaissance Design Omni Fusion and Roving Sands 05. Eleven experiments are scheduled for FY06 and twelve for FY07. The Future Operation Capability (FOC) test bed integrates commercial state-of-the-art technologies into C4ISR experiments. Prototype versions of the FOC supported operations Iraqi Freedom and Homeland Defense.</p>	7524	7772	7889	8103
<p>Operational Analysis/Tools, Modeling and Simulation (M&S)- Studies and Analysis included operational assessments of concepts, doctrine, organizations, technologies and tactics. Also examined Future Combat system/Transformation issues for space and missile defense including Space Control, Army Equities in Space - Intelligence Surveillance and Reconnaissance (AEIS-ISR), Joint Ground Tracking, ISR Integration and targeting. Tools and M&S accomplishments included M&S for experimentation and operational assessments, and the maintenance of M&S tools. Evolving concepts will require analysis that addresses emerging needs in FY05-07. Space control will require analysis to support the military utility analysis and requirements definition in FY06 and FY07. Additionally, M&S integration will be required to support the fielding of Army simulations and experimentations for information operations and Global Strike. Plans include continued maintenance of M&S tools and support for experimentation.</p>	4553	4968	5042	5245
Totals	12077	12740	12931	13348

B. Other Program Funding Summary: Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603305A - Army Missile Defense Systems Integration

PROJECT

TR5

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603305A - Army Missile Defense Systems
Integration

PROJECT
TR5

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Experiments, Exercises, Enhancements, Maintenance analysis	CPAFF/CPFF	Various, AL & CO	11293	5398		5478		5655		Continue	27824	0
b . Govt Support and Support Contracts	MIPR/Allot	Various, AL , CO & NM	13082	7342		7453		7693		Continue	35570	0
Subtotal:			24375	12740		12931		13348		Continue	63394	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603305A - Army Missile Defense Systems
Integration

PROJECT
TR5

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			24375	12740		12931		13348		Continue	63394	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
**0603305A - Army Missile Defense Systems
 Integration**

PROJECT
TR5

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Conduct experiments, operational analysis, maintain M&S for ASCC Missions																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603305A - Army Missile Defense Systems
Integration

PROJECT
TR5

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Conduct experiments, conduct operational analysis and maintain M&S tools for ASCC mission areas.	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603305A - Army Missile Defense Systems Integration

PROJECT
TR6

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TR6 ARMY AIR AND MISSILE DEFENSE	1878	0	0	0	0	0	0	0	0	4801

A. Mission Description and Budget Item Justification: This project funds effort to produce a high performance and cost efficient kill vehicle mid-body frame utilizing state of the art co-processed composites technology that will achieve flight qualification to support Terminal High Altitude Area Defense (THAAD) near-term technology insertion objectives.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Includes FY04 Congressional Add for Integrated Composite Missile Structure	1878	0	0	0
Totals	1878	0	0	0

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603308A - Army Missile Defense Systems Integration (Dem/Val)

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	34668	32131	9284	14805	13409	16266	23012	23662	0	217735
978 SPACE CONTROL	948	926	957	2734	6196	6942	12759	12601	0	44980
988 RANGE UPGRADES	7800	14475	0	0	0	0	0	0	0	22080
990 SPACE AND MISSILE DEFENSE INTEGRATION	25920	16730	8327	12071	7213	9324	10253	11061	0	150675

A. Mission Description and Budget Item Justification: This program element funds space and missile defense systems integration efforts performed by both the Army Space and Missile Defense Command (SMDC) and the Program Executive Office for Air, Space and Missile Defense (PEO ASMD).

SMDC: Headquarters, Department of the Army General Order Number 5, dated 1 March 1998, designated SMDC as the Army specified proponent for space and National Missile Defense (NMD), and the operational integrator for Theater Missile Defense (TMD). As such, SMDC is responsible to develop warfighting concepts, conduct warfighting experiments to validate those concepts, identify capabilities needed to implement the validated concepts, and develop Doctrine, Organization, Training, Materiel, Leader Development, Personnel and Facilities (DOTMLPF) solutions to realize those capabilities.

PEO ASMD (Project #978) - The Army Core Space Control Program formally transitioned to Program Executive Office for Air, Space and Missile Defense (PEO ASMD) from the Army Space and Missile Defense Command (SMDC) in 2003. Space Control provides capabilities that will help meet current Army Requirements Review Committee guidance, DEPSECDEF directives, USSPACECOM Space Control Capstone Requirements Document (CRD), and Army Requirements Oversight Council (AROC)-approved and Joint Requirements Oversight Council (JROC)-approved counter-surveillance and reconnaissance system Joint Initial Requirements Document (JIRD). Space Control has gained much importance with proliferation of satellite technology and the commercial availability of these technologies of potential adversaries. Adversaries will have the capability to capitalize on these assets to identify friendly activities and operations, increase their lethality and intelligence gathering efforts, and thus, reduce our survivability, agility, versatility, and information superiority. The Army Core Space Control System is a System of Systems concept consisting of sensors (to see the satellites), shooters (to deny the satellites), and an integrating battle command capability. Space Control is critical to the Future Force for survivability in that it denies adversary imaging for precision targeting, thus reducing lethality, and limiting intelligence gathering. Space Control also supports the Future Force characteristics of agility and versatility by denying adversary space-based communications and information as our forces respond to varying shifts in intensity and mission requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603308A - Army Missile Defense Systems Integration (Dem/Val)

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	4871	8281	11850
Current Budget (FY 2006/2007 PB)	32131	9284	14805
Total Adjustments	27260	1003	2955
Net of Program/Database Changes			
Congressional Program Reductions	-527		
Congressional Rescissions			
Congressional Increases	28600		
Reprogrammings			
SBIR/STTR Transfer	-813		
Adjustments to Budget Years		1003	2955

Change Summary Explanation:

FY05 increase due to Congressional adds to project 988 as follows: \$9.3 million - Telecommunications Upgrades at Kodiak Launch Complex and \$5.8 million - Kodiak Range Upgrades. Project 990 Congressional adds are as follows: \$10.5 million - Low Cost Interceptor; \$2.0 million - P3 Power system and \$1.0 million -- Radar Power Technology.

FY 06 increase is for space and missile defense integration activities (Project 990).

FY07 increases are as follows: \$1.7 million for development of system designs for space control projects (Project 978) and \$.3 million for the Army to exploit space systems (Project 990).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603308A - Army Missile Defense Systems Integration (Dem/Val)

PROJECT
978

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
978 SPACE CONTROL	948	926	957	2734	6196	6942	12759	12601	0	44980

A. Mission Description and Budget Item Justification: The Army Core Space Control System (ACSCS) was formally transitioned to the Program Executive Office for Air, Space and Missile Defense (PEO ASMD) from the U.S. Army Space and Missile Defense Command (SMDC) in 2003. On January 13, 2005, PEO ASMD merged with the PEO, Tactical Missiles to become the PEO, Missiles and Space. The ACSCS is a space control toolkit with the initial capability to provide a ground-based space electronic warfare capability (GBSEWC); a ground-based space surveillance system (i.e., Space and Threat Surveillance (SaTS) System); a Counter Intelligence, Surveillance, and Reconnaissance (Counter ISR) System; and an integrated Battle Management, Command, Control, Communications, Computers, and Intelligence (BMC4I) System that will be developed seamlessly along with the PEO Missile and Space's System of Systems initiative. The mission of space control is to provide freedom of action in space for friendly forces and to deny the same freedom to the enemy when directed. This includes offensive and defensive operations by the Army to gain and maintain space superiority in the space region and also involves maintaining situational awareness of events in space.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Develop and maintain Space Control program plans and strategies.	948	551	250	250
Define Space Control Architectural requirements.	0	100	257	250
Develop system designs and perform systems engineering.	0	275	450	2234
Totals	948	926	957	2734

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Acquisition plans for GBSEWC, SaTS, and Counter ISR will be developed in accordance with National Security Space (NSS) Acquisition Policy 03-01 and will utilize evolutionary acquisition approaches with spiral developments. These system designs will leverage any Science and Technology Objectives (STO) or Advanced Concept Technology Demonstrations (ACTDs) from various technology developers that are ready to transition into an acquisition program. Once systems are fielded, they will be retrofitted with upgraded hardware and software.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603308A - Army Missile Defense Systems
Integration (Dem/Val)

PROJECT
978

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program plans and strategies	Various	Various	350	300	1-4Q	300	1-4Q	300	1-4Q	0	1250	0
b . Systems and technical architectures	Various	Various	301	276	1-4Q	150	1-4Q	150	1-4Q	0	877	0
c . Systems engineering and prototypes	Various	Various	224	250	1-4Q	307	1-4Q	1959	1-4Q	0	2740	0
Subtotal:			875	826		757		2409		0	4867	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Government support and support contracts	Various	Various	50	50	1-4Q	50	1-4Q	125	1-4Q	0	275	0
Subtotal:			50	50		50		125		0	275	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603308A - Army Missile Defense Systems
Integration (Dem/Val)

PROJECT
978

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . T&E Support	Various	Various	0	0	1-4Q	100	1-4Q	150	1-4Q	0	250	0
Subtotal:			0	0		100		150		0	250	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Administration processes	Various	Various	0	50	1-4Q	50	1-4Q	50	1-4Q	0	150	0
Subtotal:			0	50		50		50		0	150	0

Project Total Cost:			925	926		957		2734		0	5542	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
**0603308A - Army Missile Defense Systems
 Integration (Dem/Val)**

PROJECT
978

Event Name	FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11				FY 12			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Develop Plans and Strategies	█				█				█				█				█				█				█							
Define Architectures	█				█				█				█				█				█				█							
Systems Design and Systems Engineering	█				█				█				█				█				█				█				█			

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603308A - Army Missile Defense Systems
Integration (Dem/Val)

PROJECT
978

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Develop Plans and Strategies	1-4Q	1-4Q	1-4Q	1-4Q				
Define Architectures	1-4Q	1-4Q	1-4Q	1-4Q				
Systems Design and Systems Engineering			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603308A - Army Missile Defense Systems Integration (Dem/Val)

PROJECT
988

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
988 RANGE UPGRADES	7800	14475	0	0	0	0	0	0	0	22080

A. Mission Description and Budget Item Justification: This project funds necessary range support for Department of Defense flight tests at Kodiak Island, Alaska. The Kodiak Launch Facility Complex is designed to provide an opportunity for demonstrating various elements potentially suitable for incorporation into ballistic missile defense system development.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Continue range support activities	7800	14475	0	0
Totals	7800	14475	0	0

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603308A - Army Missile Defense Systems Integration (Dem/Val)

PROJECT
990

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
990 SPACE AND MISSILE DEFENSE INTEGRATION	25920	16730	8327	12071	7213	9324	10253	11061	0	150675

A. Mission Description and Budget Item Justification: Headquarters, Department of the Army General Order Number 5, dated 1 March 1998, designated Army Space and Missile Defense Command (SMDC) as the Army specified proponent for space. As such, SMDC is responsible to develop warfighting concepts, conduct warfighting experiments to validate those concepts, identify capabilities needed to implement the validated concepts, and develop Doctrine, Organization, Training, Materiel, Leader Development, Personnel and Facilities (DOTMLPF) solutions to realize those capabilities. This project supports these efforts.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue efforts to plan, develop, and execute concepts and DOTMLPF solutions for Army exploitation of space systems, including Space-Based Infrared System (SBIRS), Multi-Mission Mobile Processor (M3P), Space-Based Radar, and various space control capabilities. Represent Army positions and defend Army equities relative in Joint/DoD and inter-Service activities; e.g., National Security Space Architect (NSSA) Program Assessments, etc. Lead Army's efforts in developing and executing the the Space Domain of the Army Knowledge Enterprise Architecture. Develop space modernization strategies and sponsor exploration of future space warfighting concepts in support of Army Transformation.	8352	3676	8327	12071
Includes Congressional adds for Low Cost Interceptor, P3 Power System and Radar Power Technology.	17568	13054	0	0
Totals	25920	16730	8327	12071

B. Other Program Funding Summary: Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603308A - Army Missile Defense Systems Integration (Dem/Val)

PROJECT

990

C. Acquisition Strategy: Program is continuous. Various performers will conduct planned accomplishments.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603308A - Army Missile Defense Systems
Integration (Dem/Val)

PROJECT
990

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	Various	Various	104521	0		0		0		0	104521	0
Subtotal:			104521	0		0		0		0	104521	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . GOVT SUPPORT & SUPPORT CONTRACTS	VARIOUS	VARIOUS	13246	16730	1-4Q	8327	1-4Q	12071	1-4Q	Continue	50374	0
Subtotal:			13246	16730		8327		12071		Continue	50374	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603308A - Army Missile Defense Systems
Integration (Dem/Val)

PROJECT
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			117767	16730		8327		12071		Continue	154895	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
**0603308A - Army Missile Defense Systems
 Integration (Dem/Val)**

PROJECT
990

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Continue dev/synchronization of Army space & DOTMLPF solutions																																
Execute Congressional adds																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603308A - Army Missile Defense Systems
Integration (Dem/Val)

PROJECT
990

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Execute Congressional adds.		1-4Q						
Continue development/synchronization of Army space and DOTMLPF solutions	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603327A - Air and Missile Defense Systems Engineering

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		120173	109217	83063	128570	101847	72861	0	0	0	610900
E88	INTEGRATED FIRE CONTROL AIR MISSILE DEFENSE (CA)	42421	0	24961	42736	48894	50930	0	0	0	207796
S24	ARMY SIAP SYSTEMS ENGINEERING	14605	29013	10139	10171	10137	196	0	0	0	73522
S25	ARMY SIAP OPERATIONAL INTEGRATION	2709	5423	2921	3058	2968	2964	0	0	0	19977
S26	ARMY SIAP IMPLEMENTATION	10709	14903	26115	40938	16815	889	0	0	0	109827
S27	JOINT DISTRIBUTED ENGINEERING PLANT (JDEP)	3652	3165	3407	3460	0	0	0	0	0	13499
S32	JOINT SIAP SYSTEM ENGINEERING	46077	35814	15520	28207	23033	17882	0	0	0	165380
S34	AMD SYSTEM OF SYSTEMS ENGINEERING AND INTEGRATION	0	20899	0	0	0	0	0	0	0	20899

A. Mission Description and Budget Item Justification: This Program Element provides funding for integration of Army Air and Missile System of Systems (SoS). The Army SoS comprises a broad range of systems acquired individually to support complementary missions. To provide this integrated capability, the PEO Missiles and Space must ensure that operational effectiveness and acquisition efficiency are achieved. Requirements must be integrated within the Army and also address joint needs. The Joint Distributed Engineering Plan (JDEP) will provide the capability to address Joint and Service system interoperability performance in a system-of-systems environment. The funding in this project provides for Army participation in this activity. The Single Integrated Air Picture (SIAP) is the culmination of four services SIAP developmental efforts into an objective joint capability. The engineering will fuse near real time and real time data to support situational awareness, battle management and target engagements across theater air and missile defense systems. The Cruise Missile Defense (CMD) initiative was approved by the Vice Chief of Staff of the Army in 2003. This program will accelerate the fielding and development of systems to counter the threat of Land Attack Cruise Missiles. The Integrated Fire Control (IFC) effort will provide for the engineering and development of the battle management algorithms necessary to support Integrated Fire Control. IFC will provide the integrated capability necessary to counter emerging cruise missile threat, through the integration of ground based weapons with elevated sensors and the management of sensor, weapon and network resources. This program element will integrate requirements within the Army and address joint needs.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	91713	87400	116572
Current Budget (FY 2006/2007 PB)	109217	83063	128570
Total Adjustments	17504	-4337	11998
Net of Program/Database Changes			
Congressional Program Reductions	-3959		
Congressional Rescissions			
Congressional Increases	24600		
Reprogrammings			
SBIR/STTR Transfer	-3137		
Adjustments to Budget Years		-4337	11998

FY05 Increase to PEO Missiles and Space in project S34 to support E-strike, Future Army Attack and Missile Defense System (FAAMDS), ASMD Architecture Analysis Program (A3P), Geospatial Information Decision Support (GIDS), and Suingle Integrated Space Picture (SISP).
 FY06 Funds realigned to higher priority requirements.
 FY07 Adjustment increase in the Joint SIAP Systems Engineering, Project S32.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
E88

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
E88 INTEGRATED FIRE CONTROL AIR MISSILE DEFENSE (CA)	42421	0	24961	42736	48894	50930	0	0	0	207796

A. Mission Description and Budget Item Justification: Cruise Missile Defense/Integrated Fire Control - This project will provide for development of the Integrated Fire Control (IFC) capability that is essential to defeat the emerging cruise missile threat. The IFC capability is a critical enabler for the transformation of the Army's current air and missile defense systems to a component-based, System of Systems (SoS) Architecture. IFC will provide network centric air and missile defense protection of high value assets, operational flexibility through wide area battle coordination and counters stressing threats at extended ranges IFC enables fire control quality track and/or measurement data from any sensor to be used to execute an engagement with the most effective/efficient available weapon system. IFC provides the network and functionality necessary to fully exploit the capabilities provided by advanced elevated sensors. This project defines the integrated air and missile defense SoS architecture for IFC, develops requirements and interface specifications, develops specific IFC capabilities, and performs integration and testing of the IFC architecture. The IFC capabilities that this project will develop are an essential component of the development of an effective cruise missile defense capability. This project will be coordinated with similar IFC projects/programs within the other services and the Missile Defense Agency to evolve toward a Joint IFC capability. (FY05 Funding for this project in PE 0603327, project S24).

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Cruise Missile Defense – Integrated Fire Control	1720	0	24961	42736
Science and Technology Analysis and Integration Project	2880	0	0	0
Army Space Architectural Analysis	4880	0	0	0
Army Allen Airfield Upgrades	32941	0	0	0
Totals	42421	0	24961	42736

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
E88

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PE 0603869A, MEADS	236823	251414	0	0	0	0	0	0	0	488237
PE 0203801A, PATRIOT Product Improvement	45587	32082	16188	10884	10607	10884	11119	12029	15520	164900
SSN C50001, Patriot/MEADS CAP	0	0	288875	326352	454511	510672	510389	490411	0	2581210
PE 0604869A, PAC-3	151318	61482	0	0	0	0	0	0	0	212800
PE 0102419A, JLENS	57803	79316	106420	256893	471997	332428	0	0	0	1304857
SSN BZ0525, JLENS Production	0	0	0	0	0	29153	549707	397776	0	976636
PE 0604802A, SLAMRAAM	36103	63111	36102	29200	0	0	0	0	0	164516
SSN C81004, SLAMRAAM Production	7397	2440	19315	21970	59273	13124	0	0	0	123519
PE 0604820A, SENTINEL	0	5851	5080	2547	2647	0	0	0	0	16125
SSN WK5053, SENTINEL Production	20646	7337	8393	15373	25074	31572	34473	32552	0	175420

This PE project is an integral part of the Air, Space and Missile Systems of Systems (SoS) including Integrated Fire Control, JLENS, Patriot/MEADS Combined Aggregate Program (CAP), SLAMRAAM, JTAGS, SENTINEL, and on-going initiatives to achieve Single Integrated Air Picture (SIAP).

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
E88

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CMD Integrated Fire Control Development	MIPR, 1095, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	0	0		17466	1-4Q	18900	1-4Q	0	36366	0
b . Integrated Product and Development Spt	MIPR, 1095, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	0	0		1404		3000		0	4404	0
Subtotal:			0	0		18870		21900		0	40770	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Cruise Missile Defense – Integrated Fire Control	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	1780	0		1100	1-4Q	1200	1-4Q	0	4080	0
b . Science and Technology Analysis and Integration Project	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	2980	0		0		0		0	2980	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
E88

II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
c . Army Space Architectural Analysis	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	4950	0		0		0		0	4950	0
d . Army Allen Airfield Upgrades	MIPRs, 1095s, CPFF		32711	0		0		0		0	32711	0
Subtotal:			42421	0		1100		1200		0	44721	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Testing of IFC capability	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	0	0		4991	1-4Q	19636	1-4Q	0	24627	0
Subtotal:			0	0		4991		19636		0	24627	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
E88

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
Project Total Cost:			42421	0		24961		42736		0	110118	0

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
E88

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11																											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																								
System of Systems Increment 1 Program Events																																																								
(1) CDR																																																								
(2) TRR																																																								
(3) Test Readiness Review II																																																								
(4) IOC																																																								
Systems of Systems Increment 2 Program Events																																																								
(5) Requirements Review																																																								
(6) PDR																																																								
(7) CDR																																																								
(8) IOC																																																								
Systems of Systems Increment 3 Program Events																																																								
(9) Requirements Review																																																								
(10) PDR																																																								
(11) CDR																																																								

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
E88

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
System of Systems Increment 1 Program Events								
Critical Design Review			2Q					
Test Readiness Review I				2Q				
Test Readiness Review II					2Q			
SoS Increment 1 IOC					4Q			
System of Systems Increment 2 Program Events								
Requirements Review		2Q						
Preliminary Design Review			1Q					
Critical Design Review				4Q				
System of System Increment 3 Program Events								
Requirements Review					3Q			
Preliminary Design Review							1Q	
Critical Design Review								4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S24

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S24 ARMY SIAP SYSTEMS ENGINEERING	14605	29013	10139	10171	10137	196	0	0	0	73522

A. Mission Description and Budget Item Justification: The establishment of a Single Integrated Air Picture (SIAP) capability is a critical enabler for many Army and Joint mission areas. Army execution of the SIAP effort requires the establishment and maintenance of a PEO Missiles and Space integrated engineering structure, the management and coordination of Army SIAP activities with numerous Army stakeholders and technical management of Army SIAP tasks. SIAP requires the development of Army integration engineering infrastructure to effectively support joint integration engineering activities. Army Systems Engineering effort has three main elements: 1) ensure persistent critical interoperability deficiencies are identified and fixed; 2) support the development and evaluation of the Joint SIAP System Engineering Organization's (JSSEO) SIAP Integrated Architecture Behavior Model; and 3) provide management, staffing and infrastructure for the JSSEO and Army SIAP programs.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Program Management / Systems Engineering	4812	2725	2500	2200
Identify and Fix Critical Interoperability Deficiencies (SIAP)	2212	1362	1549	1350
Development and Evaluation of SIAP Integrated Architecture Behavior Model (SIAP)	7581	4926	6090	6621
Integrated Fire Control for CMD	0	20000	0	0
Totals	14605	29013	10139	10171

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S24

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PE 643327, Project S25, SIAP Operational Integration	2643	5423	2921	3058	2968	2964	0	0	0	19977
PE 643327, Project S26, SIAP Implementation	10167	14903	26115	40938	16815	889	0	0	0	109827
PE 643327, Project S32, Joint SIAP Systems Engineering	44924	35814	15520	28207	23033	17882	0	0	0	165380
PE 643327, Project E88, Integrated Fire Control Air Missile Defense	40275	0	24961	42736	48894	50930	0	0	0	207796

This PE project is an integral part of the Army Air and Missile System of System of Systems (SoS) including Integrated Fire Control, JLENS, Patriot/MEADS Combined Aggregate Program (CAP), SLAMRAAM, JTAGS, SENTINEL, and on-going initiatives to achieve Single Integrated Air Picture (SIAP).

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S24

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Systems Engineering support for the development and evaluation of the SIAP IABM	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	7771	3000	1-4Q	4223	1-4Q	3949	1-4Q	Continue	18943	0
b . Identification and development of fixes for critical interoperability deficiencies	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	2169	1250	1-4Q	1362	1-4Q	1724	1-4Q	Continue	6505	0
c . Begin development of Integrated Fire Control Capability in support of Cruise Missile Defense	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	0	20000	1-4Q	0		0		Continue	20000	0
Subtotal:			9940	24250		5585		5673		Continue	45448	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S24

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management, Army JSSEO Staff and Modeling and Simulation	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	4665	3085	1-4Q	1525	1-4Q	1500	1-4Q	Continue	10775	0
Subtotal:			4665	3085		1525		1500		Continue	10775	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development of Testbed and actual testing of IABM timebox drops	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	0	1678		3029	1-4Q	2998	1-4Q	0	7705	0
Subtotal:			0	1678		3029		2998		0	7705	0

Remarks: IABM - Integrated Architecture Behavior Model

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S24

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:												
Project Total Cost:			14605	29013		10139		10171		Continue	63928	0

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S24

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
IABM integration Planning/Assessment																																
IABM Configuration 05 Assessment																																
IABM Configuration 07 Integration																																
IABM Configuration 09 Integration																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S24

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
IABM Integration Planning/Assessment	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
IABM Configuration 05 Assessment			1-4Q	1-4Q				
IABM Configuration 07 Integration					1-4Q	1-4Q		
IABM Configuration 09 Integration						1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S25

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S25 ARMY SIAP OPERATIONAL INTEGRATION	2709	5423	2921	3058	2968	2964	0	0	0	19977

A. Mission Description and Budget Item Justification: This project funds the coordination of Single Integrated Air Picture (SIAP) requirements with the operational community: verification that operational requirements exist to support technical specifications and any subsequent changes; integration and coordination of army operational requirements for SIAP with the user community; determination of which implementation options/roadmaps provide the maximum warfighting benefits; development of the operational view within the Theater Air and Missile Defense (TAMD) integrated architecture; identification of existing and/or required modeling and simulation capabilities to support SIAP; and integration of hardware-in-the-loop and associated assessments and analysis. These products/tasks are required to ensure a specific, focused effort that integrates SIAP with weapons, sensors, BMC3 and concepts of operations. This program also supports Aviation and Artillery attack operation systems and passive missile defense materiel solutions.

This project contains a congressional add in FY05 for Air and Missile Defense System of Systems Hardware in the Loop. The add was named Hybrid Electric Technology Demonstrator in the congressional language.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue efforts for coordinating SIAP requirements with TRADOC Directorates of Combat Developments (DCDs) to consolidate SIAP operational requirements across all four pillars, integrating SIAP requirements into current and evolving doctrine, identifying SIAP demonstrations and experiments that showcase Army interoperability, coordinating Army participation in TAMD joint interoperability exercises/demonstrations, assessing the models and simulations that support SIAP and developing the Army position on SIAP-related tools and supporting Joint SIAP Systems Engineering Organization initiatives in resolving Joint Data Network (JDN) fixes. Continue working Blue Force Laydowns for Common Reference Scenarios for analysis.	2709	2739	2921	3058
Hybrid Electric Technology Demonstrator (AMD SOS HWIL)	0	2684	0	0
Totals	2709	5423	2921	3058

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S25

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PE 643327, Project S24, Army SIAP Systems Engineering	14605	30285	10165	9996	9951	192	0	0	0	75194
PE 643327, Project S26, Army SIAP Implementation	10709	15557	26181	40233	16508	873	0	0	0	110061
PE 643327, Project S32, Joint SIAP Systems Engineering	47318	39668	19686	17936	22626	17556	0	0	0	164790

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S25

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Hybrid Electric Technology Demonstrator (AMD SOS HWIL)	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	0	2684		0		0		0	2684	0
Subtotal:			0	2684		0		0		0	2684	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Government support & support contracts	MIPRs, 1095s, CPFF	OGAs, Inhouse, Contact spt.	2709	2739	1-4Q	2921	1-4Q	3058	1-4Q	Continue	11427	0
Subtotal:			2709	2739		2921		3058		Continue	11427	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S25

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			2709	5423		2921		3058		Continue	14111	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S25

Event Name	FY 03				FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Coord & integrate SIAP reqmts into doctrine, demos, experiments, & exercise																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S25

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Coordinate and integrate SIAP requirements into doctrine, demonstrations, experiments and exercises.	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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0603327A - Air and Missile Defense Systems Engineering

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S26 ARMY SIAP IMPLEMENTATION	10709	14903	26115	40938	16815	889	0	0	0	109827

A. Mission Description and Budget Item Justification: The establishment of a Single Integrated Air Picture (SIAP) capability is a critical enabler for many Army and Joint mission areas. The Joint SIAP System Engineering Organization (JSSEO) has adopted a business model focused on the development of an Integrated Architecture Behavior Model (IABM) as the solution for fixing interoperability deficiencies and delivering future SIAP capabilities. The IABM is being jointly developed by the JSSEO and the Services, with the first delivery scheduled for FY05. Initial deliveries will be implemented in selected Army systems to evaluate the emerging IABM. Additionally, until the high risk in the IABM approach has been adequately mitigated, the identification and implementation of near-term fixes to critical interoperability deficiencies (such as those observed during Operation Iraqi Freedom) will continue to be maintained as a risk mitigation program.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Perform engineering and analysis to identify and prioritize critical interoperability deficiencies, design and develop engineering fixes for high priority deficiencies, and begin implementation of those fixes.	4654	6962	2618	31915
Support the development, evaluation and implementation of the JSSEO IABM. Prepare selected Army system for implementation of IABM Configuration 05.	5755	7941	23497	9023
Totals	10409	14903	26115	40938

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Army SIAP Systems Engineering (S24)	13866	29013	10139	10171	10137	196	0	0	0	73522
Army Operational Integration (S25)	2643	5423	2921	3058	2968	2964	0	0	0	19977
Joint SIAP Systems Engineering (S32)	44924	35814	15520	28207	23033	17882	0	0	0	165380

This PE project is an integral part of the Army Air and Missile System of Systems (SoS) including Integrated Fire Control, JLENS, Patriot/MEADS Combined Aggregate Program (CAP), SLAMRAAM, JTAGS, SENTINEL, and on-going initiatives to achieve Single Integrated Air Picture (SIAP).

C. Acquisition Strategy: Not applicable to this item.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Army Critical Interoperability Deficiencies Engineering and Implementation	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	5508	5462	1-4Q	7345		7555		0	25870	0
b . SIAP IABM Engineering and Implementation	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	5201	7941	4Q	16152		23325		0	52619	0
Subtotal:			10709	13403		23497		30880		0	78489	0

Remarks: Implementation of IABM Configuration occurs in FY07

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Support	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	0	1500	1-4Q	2618	1-4Q	4023		0	8141	0
Subtotal:			0	1500		2618		4023		0	8141	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Testing of Implementation of IABM into systems	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	0	0		0		6035	1-4Q	0	6035	0
Subtotal:			0	0		0		6035		0	6035	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			10709	14903		26115		40938		0	92665	0
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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Integrated Architecture Behavior Model Development Support																																				
Timebox Development																																				
IABM Configuration 05 Delivered (JSSEO)																																				
IABM Configuration 07 Delivered (JSSEO)																																				
IABM Configuration 09 Delivered (JSSEO)																																				

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Integrate Architecture Behavior Model Development Support								
Timebox Development	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	
IABM Configuration 05 Delivered (JSSEO)		4Q						
IABM Configuration 07 Delivered (JSSEO)				4Q	1-4Q			
IABM Configuration 09 Delivered (JSSEO)						1-4Q	1-4Q	1-4Q

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S27 JOINT DISTRIBUTED ENGINEERING PLANT (JDEP)	3652	3165	3407	3460	0	0	0	0	0	13499

A. Mission Description and Budget Item Justification: The Joint Distributed Engineering Plant (JDEP) is a Navy concept expanding their land-based Distributed Engineering Plant (DEP) which assesses integration and interoperability problems (air and missile defense) of the fleet. This program will be used to evaluate interoperability of joint forces, test and evaluate interoperability of new acquisition systems, and engineering hardware and software to correct deficiencies and develop new capabilities. The initial focus of this program is directed toward integrated air and missile defense. The program consists of individual combat systems distributed throughout the US connected with ATM telecommunication network(s) and High Level Architecture (HLA) protocols. The JDEP management structure consists of service execution cells. This funding provides for the Army involvement in the overall JDEP program.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
JDEP Test Event Participation	1004	1370	1500	1500
Communication Equipment	623	696	700	700
Operational Center Support: Support during JDEP testing and pre-event simulations.	2025	1099	1207	1260
Totals	3652	3165	3407	3460

B. Other Program Funding Summary: Not applicable for this item.

This PE project is an integral part of the Army Air and Missile System of Systems (SoS) including Integrated Fire Control, JLENS, Patriot/MEADS Combined Aggregate Program (CAP), SLAMRAAM, JTAGS, SENTINEL, and on-going initiatives to achieve Single Integrated Air Picture (SIAP).

C. Acquisition Strategy: Not applicable for this item.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development of Simulation/Stimulation for JDEP	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	1537	1000	1-4Q	816	1-4Q	816	1-4Q	0	4169	0
Subtotal:			1537	1000		816		816		0	4169	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Digital/integrated system network and equipment	MIPRs, 1095s, CPFF	OGAs, Inhouse, contract spt.	685	696	1-4Q	700	1-4Q	700	1-4Q	Continue	2781	0
Subtotal:			685	696		700		700		Continue	2781	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . JDEP Test Event Support	MIPRs, 1095s, CPFF	OGAs, Inhouse, contract spt.	1150	1169	1-4Q	1491	1-4Q	1559	1-4Q	Continue	5369	0
Subtotal:			1150	1169		1491		1559		Continue	5369	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Army management of JDEP activity	MIPRs, 1095s, CPFF	OGAs, Inhouse, contract spt.	280	300	2-4Q	400		385		0	1365	0
Subtotal:			280	300		400		385		0	1365	0

Project Total Cost:			3652	3165		3407		3460		Continue	13684	0
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PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
IABM/JDEP Build/Tests																																
Version 3.0																																
Version 3.1																																
Version 3.2																																
Version 4.0																																
Version 5.0																																

Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
IABM/JDEP Build/Tests	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
Version 3.0	1Q							
Version 3.1	3Q							
Version 3.2		1Q						
Version 4.0		4Q						
Version 5.0			4Q					

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COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
S32 JOINT SIAP SYSTEM ENGINEERING	46077	35814	15520	28207	23033	17882	0	0	0	165380

A. Mission Description and Budget Item Justification: A Single Integrated Air Picture (SIAP) is the product of fused, near-real-time data from multiple sensors to allow development of common, continuous, and unambiguous tracks of all airborne objects in the surveillance area. All airborne objects must be detected, tracked, and reported. Each object must have one and only one track identifier and associated characteristics to be incorporated into SIAP. Current systems do not provide this capability.

The Joint SIAP System Engineering Organization (JSSEO) is developing the tools and processes and performing the system engineering designed to net Joint US and coalition warfighting systems and tactical data link systems for the theater air and missile defense warfighting mission. The JSSEO focuses on specific problem areas through engineering blocks and translates these solutions into an integrated, executable architecture (Integrated Architecture Behavioral Model (IABM)) that describes the expected performance between Joint and coalition netted sensors for meeting the Joint Staff's Net-Ready Key Performance Parameters. These engineering blocks will identify the engineering specifications, supporting rationale (test results and analysis), and acquisition estimate expected to implement the changes. As the Services implement the desired architectures in their combat systems, they will conform and build the Joint Theater Air and Missile Defense Family of Systems SIAP capability. The JSSEO products are the block engineering and the integrated architectures that provide the framework for Service implementation.

Block 0 addressed the four joint warfighting shortfalls selected for their impact on the Joint Data Net (JDN), their applicability across the Services, and the engineering maturity reflected by interface change proposals already on record with the Joint Interoperability for Tactical Command and Control system process. The change proposals addressed were: improved correlation/de-correlation, identification taxonomy and symbology, ID conflict resolution matrix, and strength reporting (still awaiting final approval).

Block 1 focused on building the technical foundations for geodetic/time synchronization that addressed a set of United States Joint Forces Command and JROC endorsed deficiencies that could be implemented in the near- to mid-term. The Block 1 capabilities addressed are: further reduction of dual tracks, improved combat ID capability, improved data sharing (network capacity), and improved air picture for theater ballistic missile defense performance.

Block 2 is targeted at improving efficiency and throughput, and improving beyond line-of-sight capability. The capabilities being addressed are host computer implementation consistency, distributed database consistency improvement, network latency reduction, interface with ground systems, and improving single and multi-unit missile defense performance.

The integrated architecture is captured in an Integrated Architecture Behavior Model (IABM) to give engineers a tool (with operations context and supporting engineering detail) to make decisions about what design functions produce the most cost effective solution in meeting Joint Battle Management Command and Control requirements. By using modern software development techniques, we can specify the performance within nodes and between nodes of a tactical network in a way that will increase machine-to-machine precision and reduce integration costs in current and future combat systems.

Starting in FY04, Joint SIAP funding was transitioned from a Navy Program Element to an Army Program Element.

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Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Block 1 - (FY04) Service implementation planning and risk reduction of Block 1 recommendations began. JSSEO monitored and assisted the Services with test infrastructure development and acquisition planning, monitored technical configuration management and conducted technical design reviews with affected weapon systems. (FY05-07) Implementation in Service systems continues, monitor and assist the Services in the implementation of Block 1 solutions. Establish technical configuration management, conduct technical design reviews with affected weapon systems and assist with risk reduction and demonstration planning for Block 1 math and analysis designed into the Integrated Architecture Behavior Model (IABM).	3574	100	300	900
Block 2 - (FY04) Refined planning and requirements, and began engineering analysis for Block 2. Translated JROC validated requirements into system-level objectives for quality of service and information assurance capabilities to support Joint sensor netting. Coordinated design and solution development with the Services and Agencies and introduced industrial integrators to Joint technical approach. (FY05-07) Secured JFCOM endorsement for Block 2 objectives that continues to focus engineering of SIAP Block 2 improvements. Monitor technical configuration management; conduct technical design reviews with affected weapon systems support Block 2 host implementation and database consistency objectives with the Integrated Architecture Behavior Model (IABM). Other products include engineering analysis focused on network latency reduction, ground system interfaces, and Missile Defense performance enhancements	10796	4255	2250	8487
Architecture - (FY04) Delivered version 2.1 of the SIAP Integrated Architecture. Expanded engineering detail to capture additional tactical functionality and updated Joint TAMD requirements. Provided integrated architecture artifacts to Joint Staff and OSD roadmaps and other decision-making tools. Continued to update the IABM with increased functional scope and began to align with other tactical data functions. (FY05-07) Deliver SIAP Integrated Architecture versions 3.0 and 4.0, and deliver IABM configurations 05 and 07. Expand engineering detail to capture additional tactical functionality and updated Joint TAMD requirements. Continue to assist Services with integration tasks, resolve technical discrepancies and update the behavior model to align scope with other warfighting domains and provide minor track management and combat identification performance enhancements. Configuration 05 of the IABM will deliver in Sep 2005; Configuration 07 will deliver in Sep 2007 to establish a 2-yr cadence for DoD integrators	17496	20301	6239	10984

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Accomplishments/Planned Program (continued)		FY 2004	FY 2005	FY 2006	FY 2007
Systems Engineering Tools and Analysis - (FY04) Continued to evaluate the technical and warfighting benefits of SIAP engineering. Updated analysis tools to support modeling and simulation capabilities, hardware in the loop laboratories and data reduction of open-air live exercises. Coordinated with Joint Tactical Data Link Certification Agency for SIAP Block architecture conformance certification. Analyzed and synchronized implementation opportunities with respect to individual Services and weapon systems. Plotted predicted and fielded Joint Tactical Data Line performance capabilities and timelines. (FY05-07) Continue to evaluate the technical and warfighting benefits of the SIAP improvements. Update analysis tools to support modeling and simulation capabilities, hardware in the loop laboratories, and planning/data reduction of open-air live exercises (i.e., graduation exercises for assessing Block improvements). Coordinate with Joint Interoperability Test Command (JITC) for verification and validation of the Integrated Architecture Behavior Model (IABM). Analyze and synchronize implementation opportunities. Products include updates to technical reports on Common Reference Scenarios (CRS), SIAP Attributes, SIAP Measures of Performance (MOPs), and Block improvements.		8167	7254	1855	3500
Block 0 = (FY06) Analyze installed performance of Block 0 fixes in systems in Joint Exercises		2201	0	1457	0
Program Management - Continue to support SIAP TF infrastructure requirements such as rent, LAN (local area network), telephone, computers, VTC (video teleconferences) center rooms, office equipment, facilities management.		3843	3904	3419	4336
Totals		46077	35814	15520	28207

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy:Not applicable to this project.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Block 1	MIPR	NAVSEA-JHU-APL. Laurel, MD	800	0	1-4Q	0	1-4Q	0	1-4Q	Continue	800	0
b . Block 1	MIPR	GSA-Sparta, Centerville, VA	222	0	1-4Q	0	1-4Q	0	1-4Q	Continue	222	0
c . Block 1	MIPR	Various	2552	100	1-4Q	300	1-4Q	900	1-4Q	Continue	3852	0
d . Block 2	MIPR	NAVSEA - JHU/APL Laurel, MD	2000	800	1-4Q	577	1-4Q	1098	1-4Q	Continue	4475	0
e . Block 2	MIPR	GSA-BAH, McLean VA	0	375	1-4Q	384	1-4Q	504	1-4Q	Continue	1263	0
f . Block 2	MIPR	GSA - Northrop Grumman, McLean, VA	463	50	1-4Q	0	1-4Q	71	1-4Q	Continue	584	0
g . Block 2	MIPR	GSA - SPARTA, Centreville, VA	595	754	1-4Q	884	1-4Q	972	1-4Q	Continue	3205	0
h . Block 2	Various	Various	7738	2276	1-4Q	405	1-4Q	5841	1-4Q	Continue	16260	0
i . Architecture	MIPR	NAVSEA - JHU/APL, Laurel, MD	750	6066	1-4Q	2735	1-4Q	5371	1-4Q	Continue	14922	0
j . Architecture	MIPR	GSA - BAH, McLean, VA	1692	2882	1-4Q	1129	1-4Q	2218	1-4Q	Continue	7921	0

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . Architecture	MIPR	GSA, Northrup Grumman	1944	681	1-4Q	305	1-4Q	600	1-4Q	Continue	3530	0
l . Architecture	MIPR	GSA, Sparta, McLean, VA	1088	800	1-4Q	213	1-4Q	418	1-4Q	Continue	2519	0
m . Architecture	Various	Various	12022	9881	1-4Q	1857	1-4Q	2377	1-4Q	Continue	26137	0
n . Block Development Engineering	MIPR	NAVSEA - JHU/APL, Laurel, MD	625	170		63	1-4Q	129	1-4Q	Continue	987	0
o . Block Development Engineering	MIPR	GSA- BAH, McLean, VA	0	0		0	1-4Q	146	1-4Q	Continue	146	0
p . Block Development Engineering	MIPR	GSA, Northrup Grumman, McLean, VA	741	2008		770	2-3Q	1681	1-4Q	Continue	5200	0
q . Block Development Engineering	MIPR	GSA - Sparta, Centreville, VA	0	338		117	1-4Q	273	1-4Q	Continue	728	0
r . Block Development Engineering			9002	4729	1-4Q	2362		1272		0	17365	0
Subtotal:			42234	31910		12101		23871		Continue	110116	0

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Support	Various		3843	3904		3419		4336		Continue	15502	0
Subtotal:			3843	3904		3419		4336		Continue	15502	0

Project Total Cost:			46077	35814		15520		28207		Continue	125618	0
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Army Support to Full Range of Joint SIAP Systems Engineering Activities	[Red Bar]																															
SIAP Program Deliveries	[Red Bar]																															
IABM Configuration 05	[Red Bar]																															
IABM Configuration 07	[Red Bar]																															
IABM Configuration 09	[Red Bar]																															
Integrated Architecture Development Version 2.0	[Red Bar]																															
Integrated Architecture Development Version 3.0	[Red Bar]																															
Integrated Architecture Development Version 4.0	[Red Bar]																															
Integrated Architecture Development Version 5.0	[Red Bar]																															

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Army Support to Full Range of Joint SIAP Systems Engineering Activities	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
SIAP Program Deliveries								
IABM Configuration 05		4Q						
IABM Configuration 07				4Q				
IABM Configuration 09						4Q		
Integrated Architecture Development Version 2.0	1Q							
Integrated Architecture Development Version 3.0		4Q						
Integrated Architecture Development Version 4.0				4Q				
Integrated Architecture Development Version 5.0						4Q		

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PROJECT
S34

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S34 AMD SYSTEM OF SYSTEMS ENGINEERING AND INTEGRATION	0	20899	0	0	0	0	0	0	0	20899

A. Mission Description and Budget Item Justification: Funding in the project provides components to produce an integrated capability or AMD System of Systems (SoS). To provide this integrated capability, the PEO Missiles and Space (M&S) must ensure operational effectiveness and acquisition efficiency are achieved. The Army system of systems comprises a broad range of elements/components acquired individually to support complementary missions. PEO M&S must have the needed resources to execute this integration task. This project will provide for insertion of technology initiatives, development of alternative architectures and the modeling and simulation associated with development of a PEO M&S system of systems. FY05 Funding in this project is a result of multiple congressional adds.

Geospatial Information Decision Support for Single Integrated Air Picture - This effort provides the Army aerospace warfighter the view and effects from space to ground to support time-critical targeting of missile threats.

SituSpace Single Integrated Space Picture - Provides critical decision support and visualization of the view up into space, in support of space control, satellite control, and laser-assisted missile defense missions.

ASMD Architecture Analysis Program - The PEO M&S Architecture Analysis Program (A3P) Develops the Modeling and Simulation infrastructure for the Army's Integrated Air and Missile Defense (IAMD) System of Systems Program. A3P provides key capabilities for the SoS Simulation Lab, SoS Integration Lab and SoS User Lab. A3P analyses are critical for the definition of the SoS architecture and requirements, and the integration of AMD components/systems into the Army and Joint IAMD architectures.

Future Army Attack and Missile Defense System (FAAMDS) - This project will provide for the initiation of the preliminary design of a direct fire rocket capable of engaging and destroy a mortar in flight.

E-Strike Technology Enhancement for the Maneuver Air Defense Capability - Provides for the Army's future needs in development of a radar that can acquire, track, and provide fire control for a kinetic energy and a directed energy rocket, artillery, and mortar (RAM) defense system. This funding will provide for the performance analysis to develop the necessary requirements for the radar and shooters and the overall integration requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S34

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Geospatial Information Decision Support for Single Integrated Air Picture	0	5019	0	0
SituSpace Single Integrated Space Picture	0	4390	0	0
ASMD Architecture Analysis Program (A3P)	0	5010	0	0
Future Army Attack and Missile Defense System (FAAMDS)	0	1672	0	0
E-Strike Technology Enhancement for the Maneuver Air Defense Capability	0	4808	0	0
Totals	0	20899	0	0

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S34

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Geospatial Information Decision Support for Single Integrated Air Picture	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	0	5019		0		0		0	5019	0
b . ASMD Architecture Analysis Program (A3P)	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	0	5010		0		0		0	5010	0
c . SituSpace Single Integrated Space Picture	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	0	4390		0		0		0	4390	0
d . Future Army Attack and Missile Defense System (FAAMDS)	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	0	1672		0		0		0	1672	0
e . E-Strike Technology Enhancement for the Maneuver Air Defense Capability	MIPRs, 1095s, CPFF	Various OGA's, Inhouse and Contractor, Huntsville, AL and various other locations	0	4808		0		0		0	4808	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S34

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	20899		0		0		0	20899	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603327A - Air and Missile Defense Systems Engineering

PROJECT
S34

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:												
Project Total Cost:			0	20899		0		0		0	20899	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603619A - Landmine Warfare and Barrier - Adv Dev

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	34952	15843	0	8311	39325	43773	18699	4142	0	174525
005 CLOSE COMBAT CAPABILITIES ADV DEV	25372	0	0	0	0	0	0	0	0	25372
606 CNTRMN/BARRIER ADV DEV	9580	15843	0	8311	39325	43773	18699	4142	0	149153

A. Mission Description and Budget Item Justification: This program element provides for component development of new mine, counter mine, demolition, non-lethal, and shoulder launched munitions/systems by prototyping modern munitions technology, logic networks, fuzes, power sources, warhead components and modules into complete systems. This Program Element provides for development of grenades, munition simulators, and pyrotechnic devices. Additionally, this Program Element (PE) provides for the Intelligent Munitions System (IMS). The IMS provides the Future Combat System (FCS) unit of action with capability of intelligent mines, both lethal and non-lethal, demolitions includes sensors/seekers used by the US Army. It will enhance the effectiveness of the unit of action by providing networked munitions and real time targeting data capabilities. The IMS will significantly enhance minefield effectiveness through coordinated attack/tactics and elimination of overwatch forces. This PE also provides for the initiation and/or continuation of component development of the Airborne Stand-off Minefield Detection System (ASTAMIDS) a Future Combat System complementary system.

IMS is an FCS Core and a Landmine alternative program; GSTAMIDS and ASTAMIDS are FCS Complementary programs.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603619A - Landmine Warfare and Barrier - Adv Dev

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	11634	0	8167
Current Budget (FY 2006/2007 PB)	15843	0	8311
Total Adjustments	4209	0	144
Net of Program/Database Changes			
Congressional Program Reductions	-236		
Congressional Rescissions			
Congressional Increases	4900		
Reprogrammings			
SBIR/STTR Transfer	-455		
Adjustments to Budget Years			144

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603619A - Landmine Warfare and Barrier - Adv Dev

PROJECT
606

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
606 CNTRMN/BARRIER ADV DEV	9580	15843	0	8311	39325	43773	18699	4142	0	149153

A. Mission Description and Budget Item Justification: This project provides for component development of new countermines systems for neutralizing, clearing, breaching and detection concepts that will enhance the effectiveness of the Objective Force to maintain freedom of maneuver. The program includes the Airborne Standoff Minefield Detection System (ASTAMIDS) and Ground Standoff Mine Detection System Future Combat Systems (GSTAMIDS FCS). With the advent of the Army's Future Force Transformation, the GSTAMIDS Program has been restructured to meet the countermines requirements for the FCS. The April 2003 Joint Requirements Oversight Council (JROC) approved the FCS Operational Requirements Document (ORD) which includes countermines requirements. ASTAMIDS and GSTAMIDS have been identified in Spirals 2 and 3 respectively as part of the Chief of Staff of the Army's initiative to spiral future capabilities to the current force. The GSTAMIDS FCS forward looking effort will transition advanced technologies from the Army's S&T program into development to further enhance vehicle mounted mine detection capabilities for FCS.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
ASTAMIDS System Development and Demonstration.	7451	7826	0	0
Test planning, preparation, and support for ASTAMIDS.	878	1795	0	0
ASTAMIDS Modeling, Analysis and Engineering support.	1251	1524	0	0
GSTAMIDS FCS System Development and Demonstration – Forward Looking	0	0	0	8311
MV/MNT Program for Simulaton Based Operations Program	0	4698	0	0
Totals	9580	15843	0	8311

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603619A - Landmine Warfare and Barrier - Adv Dev

PROJECT
606

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PE 0604808A, Project 415, Mine Neutralization/Detection	32184	14123	34327	27512	46446	64504	55429	20804	Continuing	Continuing
S11500, ASTAMIDS	0	0	0	0	11363	12191	11975	12208	Continuing	Continuing

C. Acquisition Strategy: The Airborne Stand-off Minefield Detection System (ASTAMIDS) prime contractor was competitively selected and awarded a System Development and Demonstration (SDD) contract after Milestone Decision Authority (MDA) Milestone B approval. A sole source production contract with multiple options is anticipated.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603619A - Landmine Warfare and Barrier - Adv Dev

PROJECT
606

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ASTAMIDS	C-CPIF	Northrup Grumman, Melbourne, FL	25169	7826	1Q	0		0		0	32995	32995
b . Landmine Test Assets Procurement	MIPR	Various	0	0		0		0		0	0	0
c . GSTAMIDS FCS - Forward Looking	TBD	TBD	0	0		0		7900	2Q	Continue	7900	0
d . MVMNT	TBD	Reprogramming Action	0	4698		0		0		0	4698	0
Subtotal:			25169	12524		0		7900		Continue	45593	32995

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ASTAMIDS	MIPR	NVESD Ft Belvoir VA	2287	472	1Q	0		0		0	2759	0
b . ASTAMIDS	MIPR	Various	769	256	1-4Q	0		0		0	1025	0
c . GSTAMIDS FCS - Forward Looking	TBD	TBD	0	0		0		411	1Q	Continue	411	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603619A - Landmine Warfare and Barrier - Adv Dev **PROJECT 606**

II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			3056	728		0		411		Continue	4195	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ASTAMIDS	MIPR	DTC, MD	623	1010	2Q	0		0		0	1633	0
Subtotal:			623	1010		0		0		0	1633	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	In-house	PM-CCS Picatinny NJ / Ft Belvoir VA	697	856	1-4Q	0		0		0	1553	0
b . Program Management Contractor Support	C-FP	BRTRC Farifax VA	1212	725	1Q	0		0		0	1937	1930

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE **PROJECT**
0603619A - Landmine Warfare and Barrier - Adv Dev **606**

IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			1909	1581		0		0		0	3490	1930
Project Total Cost:			30757	15843		0		8311		Continue	54911	34925

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603619A - Landmine Warfare and Barrier - Adv Dev PROJECT
606

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
GSTAMIDS (FCS)																																
(1) MS B																																
SDD																																
(2) LRIP Decision																																
Phase III																					2 IPD											
ASTAMIDS																																
System Integration	SDD (SI)																															
System Demonstration									SDD (SD)																							
(3) MS C																																
Phase III																																
Autonomous Mine Detection																																
Development																	3 MS C				Production											
																					Development											

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE **PROJECT**
0603619A - Landmine Warfare and Barrier - Adv Dev **606**

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
ASTAMIDS Transition from SI to SD portion of SDD			2Q					
GSTAMIDS FCS MS B	3Q							
GSTAMIDS FCS MS C			2Q			2Q		
GSTAMIDS FCS - Forwarding Looking MS B				2Q				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603627A - Smoke, Obscurant and Target Defeating Sys-Adv Dev

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	10003	9342	5733	2847	4212	1217	0	1709	0	37018
E78 TARGET DEFEATING SYS	5627	0	0	0	0	0	0	0	0	7803
E79 SMOKE/OBSCURANT SYSTEM	4376	9342	5733	2847	4212	1217	0	1709	0	29215

A. Mission Description and Budget Item Justification: This program element supports the Component Advanced Development and System Integration developmental phases of high performance obscurant materials and systems to increase the survivability of the combined armed forces and to complement weapon systems. U.S. Forces must be able to defeat target acquisition, weapon guidance systems, and surveillance sensors across the electro-optical spectrum. These programs develop systems to provide large area and projected obscurant across the spectrum from visual through infrared and millimeter wavelength radar. The technologies supported by this program enhance obscurant systems as combat multipliers.

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	6249	6199	8140
Current Budget (FY 2006/2007 PB)	9342	5733	2847
Total Adjustments	3093	-466	-5293
Net of Program/Database Changes			
Congressional Program Reductions	-138		
Congressional Rescissions			
Congressional Increases	3500		
Reprogrammings			
SBIR/STTR Transfer	-269		
Adjustments to Budget Years		-466	-5293

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603627A - Smoke, Obscurant and Target Defeating Sys-Adv Dev

Change Summary Explanation: Funding - FY 06/07: Funds realigned to higher priority requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603627A - Smoke, Obscurant and Target Defeating Sys-Adv Dev

PROJECT
E78

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
E78 TARGET DEFEATING SYS	5627	0	0	0	0	0	0	0	0	7803

A. Mission Description and Budget Item Justification: These program elements support the Component Advanced Development and System Integration developmental phases of high performance obscurant materials and systems to increase the survivability of the combined armed forces and to complement weapons systems.

U.S. Forces must be able to defeat target acquisition, weapon guidance systems, and surveillance sensors across the electro-optical spectrum. These programs develop systems with increased survivability by use of projected obscurant, armor protection and robotic obscurant platforms (ROP), across the spectrum from visual through infrared and millimeter wavelength radar. The technologies supported by this program enhance obscurant systems as combat multipliers. This technology will transfer the visibility defeating materials directly to the threat and remove soldiers from direct-fire risk.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Conducted Limited User Test.	755	0	0	0
Designed obscurant platform system.	4052	0	0	0
Fabricated test prototypes (2 @ \$400,000 ea)	820	0	0	0
Totals	5627	0	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603627A - Smoke, Obscurant and Target Defeating Sys-Adv Dev

PROJECT
E78

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, A, Budget Activity 2, PE 0602622A, Project 552	3424	3476	3633	3661	3716	3798	0	0	Continuing	Continuing
RDTE, Budget Activity 5, PE 0604609, Smoke, Obscurant and Target Defeating Sys	11968	3798	0	5127	6482	5458	465	464	0	33762
Other Procurement Army, OPA3, M99103	23170	26	0	0	0	0	0	0	0	23196
Other Procurement Army, OPA3, G71300, Vehicle Obscuration Smoke System	13820	3837	2904	2462	2554	1815	0	0	0	27392
Other Procurment Army, OPA3, MX1000, Family of Tactical Obscuration Devices	0	0	0	10359	28642	41534	32751	27416	Continuing	Continuing

C. Acquisition Strategy: Project: Smoke/Obscurant and Target Defeat: This effort was conducted as a full and open cost plus fixed fee (CPFF) contract for advanced development and system integration of prototype systems capable of providing visual through MMW obscuration using armor, robotics on projected platforms. Efforts will result in prototype design capable of entering the System Development and Demonstration phase of acquisition.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603627A - Smoke, Obscurant and Target Defeating
Sys-Adv Dev

PROJECT
E78

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Supports hardware development	C/CPFF	Titan Systems Corporation	5167	0		0		0		0	5167	0
Subtotal:			5167	0		0		0		0	5167	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prototype Fabrication.	OGA	TACOM	820	0		0		0		0	820	0
Subtotal:			820	0		0		0		0	820	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603627A - Smoke, Obscurant and Target Defeating
Sys-Adv Dev

PROJECT
E78

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Support program management	In house	SBCCOM, APG, MD	1764	0		0		0		0	1764	0
Subtotal:			1764	0		0		0		0	1764	0

Project Total Cost:			7751	0		0		0		0	7751	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
**0603627A - Smoke, Obscurant and Target Defeating
 Sys-Adv Dev**

PROJECT
E78

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) Conducted Limited User Test (LUT)				1																												
Redesign Hardware																																
Fabricate prototypes																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603627A - Smoke, Obscurant and Target Defeating
Sys-Adv Dev

PROJECT
E78

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Conducted Limited User Test	4Q							
Redesign Hardware.	2-4Q	1-4Q						
Prototype Fabrication	3-4Q	1-4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603627A - Smoke, Obscurant and Target Defeating Sys-Adv Dev

PROJECT
E79

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
E79 SMOKE/OBSCURANT SYSTEM	4376	9342	5733	2847	4212	1217	0	1709	0	29215

A. Mission Description and Budget Item Justification: This program element supports the Component Advanced Development and System Integration developmental phases of high performance obscuration materials and systems to increase the survivability of the combined armed forces and to complement weapons systems. This program develops systems to provide small area, medium area and large area obscuration across the spectrum from visual through infrared and millimeter wavelength radar. The technologies supported by this program enhance obscuration systems as combat multipliers.

U.S. Forces must be able to defeat target acquisition, weapon guidance systems, and surveillance sensors across the electro-optical spectrum.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Initiated component advance development for small and medium area devices which will have the capability to obscure in the visible, infrared, and millimeter wave spectrums.	4376	0	0	0
Conduct initial Milestone B for the Family of Tactical Obscurant Devices.	0	94	0	0
Execute contract to build candidate smoke grenades and smoke pots with multi-spectral capability. (quantity or cost of each unknown at this time)	0	5359	4733	2047
Qualify and quantify test requirements for candidate grenades and pots.	0	600	0	0
Initiate environmental impact studies on candidate grenades and pots.	0	196	0	0
Conduct Test and Evaluation.	0	0	1000	800
Funding erroneously issued on Smoke Line.	0	3093	0	0
Totals	4376	9342	5733	2847

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603627A - Smoke, Obscurant and Target Defeating Sys-Adv Dev

PROJECT
E79

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, A, Budget Activity 2, PE 0602622A, Project 552	3424	3476	3633	3661	3716	3798	0	0	0	21708
Other Procurement Army, OPA3, MX1000, Family of Tactical Obscuration Devices	0	0	0	10609	29385	42654	33667	28212	Continuing	Continuing

C. Acquisition Strategy: This project supports development of the Family of Tactical Obscuration Devices. The Advanced Component Development effort acquisition strategy utilizes full and open competition and cost plus fixed fee (CPFF) contracting to test and build multispectral grenades and pots.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603627A - Smoke, Obscurant and Target Defeating Sys-Adv Dev

PROJECT
E79

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Initial Program Planning and System Design	OGA	JPMNBCCA, APG, MD	3567	0		0		0		0	3567	0
b . Developmental Contract	C/CPFF	TBS	0	4453	3Q	3766	1Q	1080	1Q	0	9299	0
Subtotal:			3567	4453		3766		1080		0	12866	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Environmental Studies	OGA	TBS	0	196		0		0		0	196	0
Subtotal:			0	196		0		0		0	196	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603627A - Smoke, Obscurant and Target Defeating Sys-Adv Dev

PROJECT
E79

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test & Evaluation	OGA	TBS	0	600	2Q	1000	2Q	800		0	2400	0
Subtotal:			0	600		1000		800		0	2400	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Conduct initial Milestone B	Inhouse	JPMNBCCA, APG, MD	0	94	2Q	0		0		0	94	0
b . Contract development, engineering design and evaluation.	Inhouse	JMPNBCCA, APG, MD	809	906	1Q	967	1Q	967		0	3649	0
c . Erroneous funding issued to Smoke/Obscurants.			0	3093		0		0		0	3093	0
Subtotal:			809	4093		967		967		0	6836	0

Project Total Cost:			4376	9342		5733		2847		0	22298	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
**0603627A - Smoke, Obscurant and Target Defeating
 Sys-Adv Dev**

PROJECT
E79

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) Draft ICD				▲1																												
(2) Milestone B ((Small Obscuration Devices (SOD))								▲2																								
(3) Contract Award (SOD-Visual)												▲3																				
(4) Contract Award (SOD Bi-spectral)																▲4																
(5) Contract Award (SOD-MMW)																																
(6) Milestone B ((Small Obscuration Modules (SOM))																																
(7) Contract Award (SOM - Visual)																																
(8) Milestone C (SOD - Visual)																																
(9) Milestone C (SOD - Bi-spectral)																																
(10) Milestone C (SOD - MMW)																																
(11) Milestone C (SOM - Visual)																																
(12) Contract Award (SOM - Bi-spectral)																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603627A - Smoke, Obscurant and Target Defeating Sys-Adv Dev

PROJECT
E79

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Draft ICD	4Q							
Milestone B (Small Obscuration Devices (SOD))		2Q						
Contract Award (SOD-Visual)		3Q						
Contract Award (SOD-Bi-spectral)		3Q						
Contract Award (SOD-MMW)			1Q					
Milestone B (Small Obscuration Modules (SOM))			4Q					
Contract Award (SOM Visual)				1Q				
Contract Award (SOM Bi-Spectral)								1Q
Milestone C (SOD-Visual)				1Q				
Milestone C (SOD-Bi-Spectral)					1Q			
Milestone C (SOD MMW)						1Q		
Milestone C (SOM Visual)						4Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603639A - Tank and Medium Caliber Ammunition

COST (In Thousands)		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
		Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
Total Program Element (PE) Cost		24737	26674	0	0	0	0	0	0	0	92193
643	120MM CONVENTIONAL TANK AMMUNITION	5045	1864	0	0	0	0	0	0	0	12206
64B	105MM CONVENTIONAL TANK AMMUNITION	3677	0	0	0	0	0	0	0	0	22551
656	MOUNTED COMBAT SYSTEM (MCS) AMMUNITION	14177	24810	0	0	0	0	0	0	0	52689
694	MEDIUM CALIBER AMMUNITION	1838	0	0	0	0	0	0	0	0	4747

A. Mission Description and Budget Item Justification: The Tank and Medium-caliber Ammunition (TMA) Program Element (PE) encompasses a comprehensive program to develop, rapidly transition to production, and field, advanced tank, medium caliber, and other munitions. These programs will ensure continued battlefield overmatch and lethality of U.S. maneuver forces despite worldwide development and proliferation of enhanced armored vehicle protection technologies. To do this, TMA will identify and develop promising technologies through competitive development and streamlined acquisition procedures. All ammunition development funds within this PE are managed to facilitate transitions between phases, avoid administrative delays, and focus resources on the most promising areas.

FY 2005 supports the Mid Range Munitions (MRM) for the Future Combat System (FCS) Mounted Combat System (MCS). Beginning in FY06, the MRM is being restructured within S&T for maturation. The Mid Range Munition (MRM) Program has successfully completed the autonomous guide-to-hit. It will add significant capability to the Future Force; it will provide greater hit probability at extended ranges, provide increased survivability and lethality for the MCS and will have potential for the Abrams Main Battle Tank in the current force and the Mobile Gun System in the Stryker Brigade Combat Team (SBCT). MRM will expand the Maneuver Task Force Commander's battle space significantly and consequently improve our soldiers' survivability.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603639A - Tank and Medium Caliber Ammunition

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	39697	64708	59243
Current Budget (FY 2006/2007 PB)	26674	0	0
Total Adjustments	-13023	-64708	-59243
Net of Program/Database Changes			
Congressional Program Reductions	-12262		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-761		
Adjustments to Budget Years		-64708	-59243

FY 2005: Congressional reduction (-\$11.9M) for MRM.

FY 2006: Funds realigned (-\$64.7M) to higher priority requirements. MRM is being restructured within S&T for maturation.

FY 2007: Funds realigned (-\$59.2M) to higher priority requirements. MRM is being restructured within S&T for maturation.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes				PE NUMBER AND TITLE 0603653A - ADVANCED TANK ARMAMENT SYSTEM (ATAS)				PROJECT C03		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
C03 INTERIM ARMORED VEHICLE (IAV) FAMILY	57621	49712	26712	13216	63398	87	0	0	0	360980

A. Mission Description and Budget Item Justification: This project supports the development of the Family of Stryker vehicles. A critical need exists to improve the deployability and operational effectiveness of rapid response/early entry forces. The Stryker equipped Brigade Combat Team (BCT) will be capable of deployment to anywhere on the globe in a combat ready configuration. Immediate response by a lethal, versatile, tactically agile joint force capable of operational maneuver once in the Area of Operations is essential to fulfilling the warfighting needs of the U. S. Army. The Stryker family includes: Infantry Carrier (ICV), Reconnaissance Vehicle (RV), Mobile Gun System (MGS), Mortar Carrier (MC), Commander's Vehicle (CV), Fire Support Vehicle (FSV), Engineer Squad Vehicle (ESV), Medical Evacuation Vehicle (MEV), Anti-Tank Guided Missile Vehicle (ATGM), and Nuclear/Biological/Chemical (NBC) Reconnaissance (NBC RV). The use of a common platform/common chassis design reduces requirements for repair parts and logistics support in the area of operations. RDTE funding is for integration of the mission equipment packages that make each platform unique and effective, and for vehicle testing to include developmental, production qualification, live fire and initial operational testing.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue vehicle design refinement and support to government testing. Complete design integration of NBCRV and HFE redesign. Complete design work on MGS: gun turret drives, fire control target acquisition, vehicle weight reduction, RAM improvement redesign. Development of Block modifications: mounted mortar on Mortar Carrier, Add-on Armor, Integrated Electronic Technical Manuals (IETM). Integrate C4ISR component upgrades, Land Warrior and FCS Spiral Development.	25077	17138	3126	8181
Government Testing of Vehicles: Completed Production Qualification Test (PQT) for MGS and NBCRV. Perform and complete Development Testing on the MC unique, Ammo Requal, MGS Unique to include additional RAM testing and Remote Weapons Station (RWS). Prepare for separate Live Fire Test & Evaluation (LFT&E) and Initial Operational Testing and Evaluation (IOT&E) on NBCRV and MGS.	27712	26646	23036	4785
Government Systems Engineering and Program Management	2420	1499	550	250
Training Devices	713	3000	0	0
SBIR/STTR	1699	1429	0	0
Totals	57621	49712	26712	13216

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603653A - ADVANCED TANK ARMAMENT SYSTEM (ATAS)

PROJECT
C03

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	51892	7605	88
Current Budget (FY 2006/2007 PB)	49712	26712	13216
Total Adjustments	-2180	19107	13128
Net of Program/Database Changes			
Congressional program reductions	-751		
Congressional rescissions			
Congressional increases			
Reprogrammings			
SBIR/STTR Transfer	-1429		
Adjustments to Budget Years		19107	13128

NBC Reconnaissance Vehicle (NBCRV) and Mobile Gun System (MGS) both required design fixes in FY04 to improve vehicles' performance prior to Low Rate Initial Production Decision (LRIP). As a result, the LRIPs for these 2 vehicles were slipped from early 1QFY04 to late 4QFY04. The shift in the LRIP decision coupled with plans to improve Human Factors and integrate a more advanced Sensor Processing Group on NBCRV have impacted planned testing and NBCRV Milestone III. The shift in the LRIP decision coupled with requirements to improve gun RAM have impacted planned testing of the MGS and the MGS Milestone III decision. Funding in FY05 supports the testing of planned system improvements, specifically RAM testing for the MGS. Funding in FY06 and FY07 supports Live Fire and Operational testing prior to production decisions.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603653A - ADVANCED TANK ARMAMENT SYSTEM (ATAS)

PROJECT
C03

C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	ToCompl	TotalCost
PA, WTCV, G85100 Stryker	962682	1524165	878449	719486	549173	204107	268426	205709	988988	6301185

D. Acquisition Strategy: The Brigade Combat Team is providing an accelerated procurement of the Family of Stryker Vehicles. On 16 Nov 00, the program completed a successful MS II DAB and awarded a requirements contract to GM/GDLS Defense Group. L.L.C. with delivery orders for integration efforts and limited rate initial production (LRIP) vehicles. The Army has accepted over 1015 vehicles through Jan of the 2nd qtr of FY05; concurrently, the program has completed Initial Operating Test and Evaluation (IOT&E) for the 8 variants, Live Fire testing, and held a successful MS III DAB in 2nd qtr FY04 for seven of the ten Variants. The remaining three variants are the MC "B"/Mounted Mortar Carrier, the NBCRV and the MGS. The MC "B"/Mounted Mortar Carrier received production approval based on a signed and published ADM the 1st qtr of FY05. The NBCRV and MGS systems received limited LRIP approval by the DAB in the 4th qtr of FY04 with a signed ADM dtd 14 Oct 04. Subsequently, our remaining RDT&E program will complete development on the NBCRV and MGS and a limited scoped IOT&E and Live Fire testing required for each vehicle for their entry in MS III. Work has also begun on block improvements the Family of Stryker will benefit from: add-on armor and integrated electronic technical manuals, Land Warrior integration and FCS Spiral Development. The production of the Add-on-Armor program will begin FY05.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603653A - ADVANCED TANK ARMAMENT SYSTEM
(ATAS)

PROJECT
C03

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IAV Development	CPAF	GDLS Sterling Heights, MI	300198	15968	1-2Q	0		7400	1-2Q	63222	386788	386650
b . GFE	Requisitions	Various	851	0		0		0		0	851	851
c . Prototype Development (8)	Firm Fixed Price	GM GDLS DG L.L.C Shelby, MI	29215	0		0		0		0	29215	29215
d . Training Devices	MIPR	PEO-STRI, Orlando, FL	8420	3000		0		0		0	11420	11420
e . Miscellaneous Contractor Support			1246	0		0		0		0	1246	1246
f . SBIR/STTR			1699	1429		0		0		0	3128	3128
Subtotal:			341629	20397		0		7400		63222	432648	432510

Remarks: Stryker development supports the following 10 vehicles: Infantry Carrier Vehicle (ICV), Reconnaissance Vehicle, Mobile Gun System, Mortar Carrier, Commander's Vehicle, Fire Support Vehicle, Engineer Squad Vehicle, Medical Evacuation Vehicle, Anti-Tank Guided Missile Vehicle, and NBC Reconnaissance Vehicle.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603653A - ADVANCED TANK ARMAMENT SYSTEM
(ATAS)

PROJECT
C03

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Other Gov't Agencies	MIPR	TACOM, Warren, MI Various	15288	1074	1-2Q	550	1-2Q	250	1-2Q	263	17425	17621
b . Source Selection Board			2300	0		0		0		0	2300	2300
Subtotal:			17588	1074		550		250		263	19725	19921

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Developmental System Testing	MIPR	ATEC, APG, MD/Various	94116	20815	2-3Q	0		0		0	114931	117936
b . Fort Lewis Concept Prove Out	MIPR	BCT Materiel Dev Cell, Ft Lewis, WA	1118	0		0		0		0	1118	1118
c . Procure Test Vehicles	Competitive /CPAF	General Motors/General Dynamics Land Systems Defense Group L.L.C. Shelby, MI	3735	0		0		0		0	3735	3735
d . Live Fire Test & Evaluation	MIPR	Army Test Center, Army Research Lab, Army Evaluation Center - Various	12607	2033	2Q	6895	1Q	2373	1Q	0	23908	23908

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603653A - ADVANCED TANK ARMAMENT SYSTEM
(ATAS)

PROJECT
C03

III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
e . Initial Operational Test & Evaluation	MIPR	OTC, Ft. Knox, KY	58981	3798	3Q	16141	1Q	2412	1Q	0	81332	78983
f . Contractor Support to Test	CPFF	GM GDLS DG L.L.C. Shelby, MI	20414	1170	2Q	3126	2Q	781	2Q	0	25491	24710
Subtotal:			190971	27816		26162		5566		0	250515	250390

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PMO	N/A	TACOM, Warren, MI	8610	425	1-2Q	0		0		0	9035	9102
b . Consultant Contract PM Support	Competitive /Various	ICI, Camber, Warren, MI	2147	0		0		0		0	2147	2147
Subtotal:			10757	425		0		0		0	11182	11249

Project Total Cost:			560945	49712		26712		13216		63485	714070	714070
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603653A - ADVANCED TANK ARMAMENT SYSTEM (ATAS)

PROJECT
C03

Event Name	FY 02				FY 03				FY 04				FY 05				FY 06				FY 07				FY 08				FY 09			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
LRIP	Stryker Initial Production																															
(1) IOC	▲ 1 IOC																															
IOT&E	■ IOT&E																															
(2) MS III	▲ 2 MS III																															
FRP	Full Production																															
NBCRV	NBCRV Sensor Dev and Veh Int																															
(3) IPR	▲ 3 IPR																															
LRIP	Initial Production																															
IOT&E	■																															
FRP	Full																															
(4) MS III	▲ 4 MS III																															
MGS	MGS Development																															
(5) IPR	▲ 5 IPR (14)																															
LRIP	Initial Production																															
(6) IPR	▲ 6 IPR (58)																															
IOT&E	■																															
(7) MS III	▲ 7 MS III																															
FRP	Full Production																															

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603653A - ADVANCED TANK ARMAMENT SYSTEM
(ATAS)

PROJECT
C03

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Stryker Milestone III - 7 Variants	2Q							
NBCRV IPR	4Q							
Planned NBCRV Milestone III				4Q				
MGS IPR (Lot 1)	4Q							
Planned MGS IPR (Lot 2)		3Q						
Planned MGS Milestone III				2Q				

Reflects current program schedule.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	13133	13234	3393	2728	3767	3860	4244	4331	Continuing	Continuing
610 FOOD ADV DEVELOPMENT	3540	3848	3393	2728	3767	3860	4244	4331	Continuing	Continuing
669 CLOTHING AND EQUIPMENT	8323	9196	0	0	0	0	0	0	0	22086
C09 SOLDIER SUPPORT EQUIPMENT - AD	1270	190	0	0	0	0	0	0	0	13048

A. Mission Description and Budget Item Justification: This program element supports component development and prototyping for organizational equipment, improved individual clothing and equipment that enhance Soldier battlefield effectiveness, survivability, and sustainment. This program element also supports the component development and prototyping of joint service food and combat feeding equipment designed to reduce logistics burden. In FY06, Projects 669 and C09 transition to a new Program Element, 0603827A, Soldier Systems - Advanced Development.

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	13810	11705	11013
Current Budget (FY 2006/2007 PB)	13234	3393	2728
Total Adjustments	-576	-8312	-8285
Net of Program/Database Changes			
Congressional Program Reductions	-200		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-376		
Adjustments to Budget Years		-8312	-8285

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603747A - Soldier Support and Survivability

Change Summary Explanation: Funding - FY 06/07: Funds realigned to other higher priority requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

PROJECT
610

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
610 FOOD ADV DEVELOPMENT	3540	3848	3393	2728	3767	3860	4244	4331	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project provides for the advanced component development and prototyping of joint service food and combat feeding equipment designed to reduce the logistics burden and Operation and Support (O&S) costs of subsistence support to service personnel. Project supports development of rations and rapidly deployable field food service equipment. Project conducts demonstration and validation of improved subsistence and subsistence support items used to enhance soldier effectiveness and quality of life in all four Services, as part of an integrated Department of Defense (DoD) Food Research, Development, Test, Evaluation and Engineering Program. The Program is reviewed and validated twice annually by the DoD Combat Feeding Research and Engineering Board (CFREB) as part of the Joint Service Food Program. This project develops critical enablers that support the Joint Future Force Capabilities and the Joint Expeditionary Mindset by maintaining readiness through fielding and integrating new equipment. This equipment enhances the field soldier's well-being and provides the soldier with usable equipment, in addition to reducing sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands on lift, combat zone footprint, and costs for logistical support.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

PROJECT
610

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
FY 04: Developed, field tested and transitioned updated Unitized Group Ration-Heat & Serve (UGR-H&S) and UGR-A menus and documents for procurement to ensure maximum acceptability and consumption. Completed revisions to the Medical Diet Supplement (MDS) based on field input. Developed optimized user labeling for the UGR-H&S and initiated transition into procurement documents. Initiated development of UGR-H&S Surge Procurement database. A total of 25 new items were developed and field tested. Results presented to Feb 04 Joint Services Operational Ration Forum (JSORF) and approved for use in the UGR-H&S 05 menus. FY 05-07: Continue to improve fielded group operational rations to increase variety, enhance acceptability, increase consumption and improve nutritional intake to maintain peak performance on the battlefield. Integrate state-of-the-art packaging technologies and other Science and Technology (S&T) transitions into fielded group rations.	640	924	660	679
FY 04: Completed in-house testing of Institutional-Sized Pouch (ISP) product and packaging (material and assembly configuration). Conducted in-house and field testing of ISPs to ensure compatibility with military food service equipment. Based on performance, cost and commercial availability, recommended adoption of ISPs as potential components for UGR-B and as an additional production base for military surge option for UGR-H&S. Initiated transition of ISP technology to procurement.	273	0	0	0
FY04: Conducted Meal, Cold Weather/Long Range Patrol Ration advanced development of new brick packaging and easy open peelable seal for Operation and Support (O&S) cost reduction; conducted advanced development of nutrient supplementation fortification for operational rations to enhance cognitive and physical performance. Completed introduction of Hot Beverage Bag into Meal Ready to Eat (MRE). A total of 30 new test items were developed for testing, results presented to Feb 04, Joint Service Operational Rations Forum (JSORF) and approved for use in the MRE 05 menus.	981	0	0	0
FY 05: Continue annual improvements to enhance acceptability and consumption of individual and assault rations; conduct large scale test of new Meal Ready to Eat (MRE) items with soldiers. Initiate non-hydrogen flameless ration heater development to reduce hydrogen field waste, design new items and procure initial prototypes from at least two different vendors. Conduct field evaluations with Soldiers under actual conditions using FY 04 improved Meal Cold Weather and Long Range Patrol Rations, then analyze test data and present recommendations for new products to the Joint Service Operational Forum (JSORF).	0	1154	0	0

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

PROJECT
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Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
FY 06: Continue annual improvements to enhance acceptability and consumption of individual and assault rations; conduct field-testing of new MRE items. Conduct large-scale non-hydrogen flameless ration heater field test with Soldiers; analyze data and work with regulatory agencies on introduction of new heaters. Continue introduction of improved Meal Cold Weather and Long Range patrol Rations for new products to the Joint Service Operational Rations Forum. Establish full-scale producibility of First Strike ration and components. Complete Performace Contract Requirements (PCR) and obtain JSORF approval for First Strike Ration procurement.	0	0	1008	0
FY 07: Continue annual improvements of individual and assault rations; conduct field testing of new MRE items. Complete data analysis of FY 06 non-hydrogen flameless ration heater field tests. Complete procurement documentation and transition for Defense Supply Center Philadelphia (DSCP) procurement. Conduct field test of improved Meal Cold Weather and Long Range Patrol Rations, analyze test data and present recommendations for new products to the Joint Service Operational Ration Forum. Finalize full-scale producibility of First Strike Ration and components, which will reduce weight/cube by 50% over 3 standard MREs. Prepare and transition procurement documentation for DSCP.	0	0	0	798
FY 04: Continued storage studies of ongoing stored items. FY 06-FY 07: Complete storage studies on remaining items. Develop predictive protocols for accelerated storage of rations and transition recommended changes to procurement documents. Initiate efforts to provide Veterinary Command (VETCOM) storage guidelines that correlate commercial use-by dates with Unitized Group Ration (UGR) shelf life requirements and develop a predictive model using accelerated storage data to ensure highly acceptable and wholesome rations.	92	0	150	89
FY 04: Awarded a combined development and production contract for the Multi-Temperature Refrigerated Container System (MTRCS). Completed design and initiated fabrication of MTRCS prototypes. FY 05: Complete fabrication of MTRCS prototypes and conduct Developmental and Operational Testing. FY 06: Complete Developmental and Operational Testing and prepare Milestone C for transition into production.	309	624	50	0
FY 04: Installed and tested a new Modular Refrigerator on the aircraft carrier USS Roosevelt. The Modular Refrigerator increases available freezer assets and increases operating efficiency. A draft specification was prepared for use in Navy procurement.	192	0	0	0
FY 04: Reviewed ice makers presently used on Navy ships, compared output to shipboard demand and recommended improvements. Tested and procured commercial icemakers, down selected and tested candidates on sea vessels.	242	0	0	0
FY 06: Initiate development of grey water treatment options for the field food sanitation system. FY 07: Conduct technical evaluation of full scale grey water treatment devices.	0	0	200	497

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

PROJECT
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Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
FY 05: Conduct market investigation into field co-generation technologies for Field Feeding Operations and prepare for FY 06 award of development contract. FY 06: Award a contract to develop a co-generator that produces heat for cooking and sanitation as well as electrical energy for the kitchen's systems. Evaluate the prototype co-generator through bench top testing and optimize the design.	0	86	250	0
FY 04: Prepared a technical data package for the Sanitation Steam Heater and transitioned it to the Air Force for procurement.	187	0	0	0
FY 05: Complete development of various package configurations for Compressed Meal (CM) technology which will provide shelf stable, fresh-like quality and reduce the logistics footprint. FY 06: Complete producibility and field-testing of CM and transition CM technology to procurement.	0	287	300	0
FY 04: Initiated design changes for Remote Unit Self-Heating Meal (RUSHM), renamed to Unitized Group Ration-Express (UGR-E), and conducted pre-production testing to validate commercial producibility. Developed self-contained prototype to enhance convenience, as well as water-added prototypes, and conducted in-house verification tests. Initiated confirmatory field tests validating utility for remote site feeding. FY 05: Draft Performance Contract Requirements (PCR) and acquisition strategy for Unitized Group Ration Enhancements (UGR-E). Complete pre-production contract to validate producibility and cost. Conduct remote site large scale field testing, accelerated storage, rough handling, and cold weather testing. Finalize menus, dietary requirements, accessory components and overall module configuration. FY 06: Complete producibility demonstrations and field testing of UGR-E. Complete Safety Assessment Report (SAR), Health Hazard Assessment Report (HHAR), and Department of Transportation/Environmental Protection Agency (DOT/EPA) regulatory assessments. Complete acquisition strategy and obtain JSORF approval for procurement. Finalize procurement documentation and transition to Defense Logistics Agency (DLA) for procurement.	402	383	174	0
FY 04: Conducted developmental and operational testing of commercial storage/MAP gas system(s) to extend shelf life for fresh fruits and vegetables. FY 05: Down select and conduct testing aboard submarines of commercial storage/MAP gas systems. FY 06: Conduct surveys and prepare final report and recommendations to the Navy.	222	136	153	0
FY 05: Conduct studies on emerging technologies to reduce food service labor and to reduce freezer storage on board Navy ships by use of prepared foods, common menus and shelf stable food items. Transition technology to Navy.	0	134	0	0
FY 06-FY 07: Develop Modular Food Service equipment prototypes; modify, test and evaluate to further optimize future Navy DDX galley designs.	0	0	224	232

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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0603747A - Soldier Support and Survivability

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Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007
FY 06: Optimize and ruggedize Surface Biosensor to ensure performance in field environments. Transition to Vice Chief of Army, Office of the Surgeon General (VSA, OTSG) for procurement.	0	0	224	0
FY 07: Initiate development of prototype scrubber for removal of carbon dioxide from field kitchen and sanitation system work environments.	0	0	0	204
FY07: Award contract for the development of a water heating/chilling device for crew sustainment in the Future Combat Vehicle	0	0	0	229
FY05: Conduct a Market Survey of options to mitigate combustion by-products for the field food sanitation system, procure recommended solutions and conduct in-house testing.	0	120	0	0
Totals	3540	3848	3393	2728

B. Other Program Funding Summary

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0604713.548, Military Subsistence System	1895	1946	3383	2952	2464	2461	2099	2142	Continuing	Continuing
OPA 3, M65801, Refrigerated Containers	0	5884	5006	10416	9140	10586	10584	10892	Continuing	Continuing

C. Acquisition Strategy:Project development will transition to System Development & Demonstration and production.

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February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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0603747A - Soldier Support and Survivability

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Joint Service Food/Combat Feeding Equipment	In-House	RDECOM, Natick, MA	21840	1515	1-4Q	1283	1-4Q	1011	1-4Q	Continue	25649	Continue
b . Joint Service Food/Combat Feeding Equipment	Contracts	Various	10148	1474	1-4Q	1248	1-4Q	983	1-4Q	Continue	13853	Continue
Subtotal:			31988	2989		2531		1994		Continue	39502	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Joint Service Food/Combat Feeding Equipment	MIPR	DTC, Maryland & AEC, Virginia	4446	665	1-4Q	563	1-4Q	443	1-4Q	Continue	6117	Continue
Subtotal:			4446	665		563		443		Continue	6117	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CFP Management	In-House	RDECOM, Natick, MA	1704	194	1-4Q	299	1-4Q	291	1-4Q	Continue	2488	Continue
Subtotal:			1704	194		299		291		Continue	2488	Continue

Project Total Cost:			38138	3848		3393		2728		Continue	48107	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
(1) Field Test MRE enhancements, (2) , (3) , (4) , (5) , (6) , (7) , (8)			▲1				▲2				▲3				▲4				▲5				▲6				▲7				▲8		
(9) Field Test UGR Enhancements, (10) , (11) , (12) , (13) , (14) , (15) , (16)			▲9				▲10				▲11				▲12				▲13				▲14				▲15				▲16		
(17) Transition new rations to DPSC, (18) , (19) , (20) , (21) , (22) , (23) , (24)			▲17				▲18				▲19				▲20				▲21				▲22				▲23				▲24		
(25) Pre-Production testing of RUSHM, (26) Producibility and Field test of Compressed Meal, (27) Test prototype design of MFSS for DDX, (28) test MFSS aboard Navy ship			▲25				▲26				▲27				▲28																		
(29) MS C for MTRCS, (30) MS B for JSMAK, (31) Test & Evaluate Multi-Ration Heater/Tray Ration Heater enhancement, (32) Field test RFID technology											▲29				▲30	▲31	▲32																
(33) Complete producibility demonstration and field test UGR-E											▲33																						
DT/OT on MTRCS																																	
(34) DT/OT on Commercial Storage/MAP Gas System			▲34																														

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

PROJECT
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Conduct field test on Meals Ready to Eat (MRE) enhancements.	3Q	3Q	3Q	3Q	3Q	3Q	3Q	3Q
Transition new Individual rations to DSCP and Services.	4Q	4Q	4Q	4Q	4Q	4Q	4Q	4Q
Conduct field test on UGR enhancements.	3Q	3Q	3Q	3Q	3Q	3Q	3Q	3Q
Prepared TDP for sanitation steam heater and transitioned to Air Force.	4Q							
Transition UGR enhancements/changes to DSCP for procurement.	4Q	2Q	2Q	2Q	2Q	2Q	2Q	2Q
Complete producibility and field test of Compressed Meal.		2Q						
Conducted pre-production testing of Remote Unit Self Heating Meal (RUSHM).	4Q							
Procured and tested commercial items for sea vessels.	3Q							
Installed Modular Refrigerator on board USS Roosevelt.	4Q							
Test prototype design of Modular Food system for DDX.				2Q				
Test Modular Food Service System aboard Navy ship.					1Q			
Conduct studies on emerging technologies to reduce food service labor on board Navy ships.			3Q					
Develop Modular Food Service equipment and transition to the Navy.				3Q	3Q	3Q	3Q	3Q
Prepare TDP and transition Surface Scanning Biosensor to VSA, OTCG for procurement.			4Q					
Transition performance contract requirements for Tamper Evident Packaging to DSCP and services.					4Q			
Test and evaluate Multi-Ration Heater/Tray Ration Heater enhancements.					2Q			
Conduct field tests on Radio Frequency Identification (RFID) technology.					3Q			
Transition heat-driven refrigerator to advanced development.			1Q					

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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Schedule Detail (continued)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Transition component shelf life guidelines correlated to commercial use-by dates to VETCOM.			4Q					
Transition the Compressed Meals to DSCP for procurement.			4Q					
Transition Lightweight Insulated Food Containers to procurement.				4Q				
Transition First Strike Ration procurement documentation to DSCP.				4Q				
Complete producibility demonstrations and field test UGR-E.			4Q					
Conduct Milestone B for Joint Service Modular Kitchen System (JSMAK).					1Q			
Initiate DT and OT on the Mult Temp Refrigerated Container System (MTRCS).		4Q						
Complete DT and OT for the MTRCS.			3Q					
Conduct Milestone C for MTRCS.				1Q				
Conduct DT/OT of commercial storage/MAP gas system to extend shelf life of fresh fruits/vegetables.	4Q							
Test commercial storage/MAP gas system aboard submarines.		3Q						
Conduct surveys on commercial storage/MAP gas systems and provide recommendations to the Navy.			4Q					

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February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

PROJECT
669

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
669 CLOTHING AND EQUIPMENT	8323	9196	0	0	0	0	0	0	0	22086

A. Mission Description and Budget Item Justification: Not applicable for this item.

Accomplishments/Planned Program Not applicable for this item.

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

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February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

PROJECT
C09

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
C09 SOLDIER SUPPORT EQUIPMENT - AD	1270	190	0	0	0	0	0	0	0	13048

A. Mission Description and Budget Item Justification: Not applicable for this item.

Accomplishments/Planned Program Not applicable for this item.

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603766A - Tactical Support Development - Adv Dev (TIARA)

PROJECT
907

COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
907 TACTICAL SURVEILLANCE SYSTEMS - TIARA	16024	15218	18907	19951	20846	23246	25484	25364	Continuing	Continuing

A. Mission Description and Budget Item Justification: Integrate National and Theater capabilities into the tactical army architecture and force structure to support intelligence targeting and situational awareness. The mission is to define requirements and endeavor to get them integrated into the national/theater architectures/requirements and CONOPS. This involves an extensive amount of studies, simulations and experiments in coordination with multiple programs and commands. In the short term, the mission is to evaluate current National developmental technology and potential CONOPS then integrate these items into TENCAP systems/architectures/CONOPS. In the long run, the mission is to influence the type/direction of National technological/CONOPS development to meet objective force requirements.

Capabilities developed will be incorporated into the Tactical Exploitation System (TES), Division TES (DTES), TES Lite, Future Combat System, and Distributed Common Ground Station - Army (DCGS-A). Common Baseline addresses common Tactical Exploitation of National Capabilities (TENCAP) subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to future national, theater and tactical intelligence, surveillance and reconnaissance capabilities.

On January 13, 2005, the Program Executive Office (PEO), Air, Space and Missile Defense (ASMD) merged with the PEO, Tactical Missiles to become the PEO, Missiles and Space.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Pursue technology to refine the TENCAP common baseline, fully exploiting national and theater capabilities to meet emerging worldwide contingency scenarios. Effort includes experimentation, Signals Intelligence (SIGINT), Imagery Intelligence (IMINT), communications, and Measurement and Signature Intelligence (MASINT) processing initiatives.	13426	11851	14782	15436
Support ASPO program management for administrative activities.	2598	3367	4125	4515
Totals	16024	15218	18907	19951

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603766A - Tactical Support Development - Adv Dev (TIARA)

PROJECT
907

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	15441	15278	15902
Current Budget (FY 2006/2007 PB)	15218	18907	19951
Total Adjustments	-223	3629	4049
Net of Program/Database Changes			
Congressional Program Reductions	-223		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years		3629	4049

FY06 - FY07: Increase to support technical base shortfall; previously funded in PE 0305208, Project 956.

C. Other Program Funding Summary: Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603766A - Tactical Support Development - Adv Dev (TIARA)

PROJECT

907

D. Acquisition Strategy: As pioneers in streamlined acquisition, ASPO's success in delivering systems to warfighters is directly attributed to an environment emphasizing stable funding, low density acquisition, minimal use of MILSPECS, and managed competition. By influencing new technology direction, tailoring existing technology, leveraging the best commercial practices, and using commercial and government-off the shelf software, ASPO minimizes risk while maximizing efficiency. Government and contract personnel and facilities accomplish dedicated Integrated Logistics Support (ILS) for all systems through a coordinated effort.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603766A - Tactical Support Development - Adv Dev
(TIARA)

PROJECT
907

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Common Baseline	SS/CPAF	Multiple	39124	11851	1-3Q	14782	1-3Q	15436	1-3Q	Continue	81193	Continue
Subtotal:			39124	11851		14782		15436		Continue	81193	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ASPO Program Management	In House	ASPO, Alexandria, VA	9237	3367	1-4Q	4125	1-4Q	4515	1-4Q	Continue	21244	Continue
Subtotal:			9237	3367		4125		4515		Continue	21244	Continue

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603766A - Tactical Support Development - Adv Dev
(TIARA)

PROJECT
907

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			48361	15218		18907		19951		Continue	102437	Continue
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Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603766A - Tactical Support Development - Adv Dev
(TIARA)

PROJECT
907

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Common Baseline	1-3Q	1-3Q	1-3Q	1-3Q	1-3Q	1-3Q	1-3Q	1-3Q
ASPO Program Management	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes				PE NUMBER AND TITLE 0603773A - Unique Identification (UID)				PROJECT U02		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
U02 UNIQUE IDENTIFICATION (UID)	0	0	1500	1500	1500	1500	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Department of Defense (DoD) vision for unique item identification is to uniquely identify tangible items in order to facilitate item tracking in DoD business systems and provide reliable and accurate technical and financial data for management, financial accountability, and asset management purposes. The policy relies to the maximum extent practicable on commercial item markings and does not impose unique government data requirements. Unique Identification (UID) is a mandatory DOD requirement on all solicitations issued on or after January 1, 2004. UID, or a recognized equivalent, is required for all property items delivered to the Government if: (1) the acquisition cost is \$5,000 or more, (2) it is either a serially managed, mission essential or controlled inventory piece of equipment or a repairable item, or a consumable item or material where permanent identification is required, (3) it is a component of a delivered item, if the program manager has determined that unique identification is required, or (4) a UID or a DOD-recognized UID equivalent is available.

The following strategic outcomes have been defined:

- * Data integration across Department, Government, and Industry systems as envisioned by the DoD Business Enterprise Architecture
- * Improved item management and accountability
- * Improved asset visibility and life-cycle management
- * Clean audit opinions on the property, plant, and equipment and operating materials and supplies portions of DoD financial statements

The DoD UID focuses first on the requirements for new equipment, major modifications, and re-procurements of equipment and spares. The second phase of implementation will apply the UID policy to existing assets and other business venues including maintenance. Unique identification of tangible items will: Help achieve integration of item data across the Department, Federal and industry asset management systems envisioned by the DoD Business Enterprise Architecture (BEA); improve item management and accountability; improve asset visibility and life cycle management; and, enable clean audit opinions on tangible item portions of DoD financial statements.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Analysis and Design, Development and Integration	0	0	1500	1500
Totals	0	0	1500	1500

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603773A - Unique Identification (UID)

PROJECT
U02

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget	0	0	0
Current Budget (FY 2006/2007 PB)	0	1500	1500
Total Adjustments	0	1500	1500
Net of Program/Database Changes			
Congressional Program Reductions			
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years			

FY06/07 increase in support of the Unique Identification program.

<u>C. Other Program Funding Summary</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OMA APE 432612	0	12225	13700	13700	13700	13700	14047	14402	0	95474

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603773A - Unique Identification (UID)

PROJECT

U02

D. Acquisition Strategy: The Unique Identification (UID) acquisition strategy will make extensive use of Integrated Product Teams (IPTs) consisting of in-house matrix and contract support. The strategy will be accomplished via performance-based acquisition procurement efforts. Spiral software development will be employed through the evolutionary acquisition of time-phased requirements through blocks of capability building on preceding blocks while ongoing to full, interoperable capability. UID must support the near term needs of the acquisition community while achieving the long-term goal of a collaborative business enterprise environment. The evolutionary acquisition approach UID is taking will acquire contractor support and services for program management and integration early in its acquisition life cycle phases. Phased implementation and incremental development will align with the Acquisition Business Enterprise Architecture. Implementation of maturing technology and commercial off-the-shelf software (COTS) will provide the necessary flexibility for building an Information Technology environment to sustain a collaborative business enterprise and achieve the Department of Defense goal for a Global Information Grid (GIG).

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603773A - Unique Identification (UID)

PROJECT
U02

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Analysis and Design, Development, Integration and Testing	Competitive contract, Time & Materials	Northrop Grumman and Defense Information Systems Agency (DISA)	0	0		1500	1-4Q	1500	1-4Q	Continue	3000	0
Subtotal:			0	0		1500		1500		Continue	3000	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603773A - Unique Identification (UID)

PROJECT
U02

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			0	0		1500		1500		Continue	3000	0
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Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603773A - Unique Identification (UID)

PROJECT
U02

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Development, Design and Implementation			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

Unique Identification will be an ongoing, simultaneous cycle of design, development and implementation

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February 2005

BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes				PE NUMBER AND TITLE 0603774A - Night Vision Systems Advanced Development				PROJECT 131		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
131 NIGHT VISION SYS A/DEV	6651	17052	6885	5410	3583	2723	5836	5954	Continuing	65078

A. Mission Description and Budget Item Justification: This program addresses initiatives to develop and transition technologies from the laboratories and industry in order to improve fielded equipment in the current force as well as initiation, development, and engineering/program management support of systems for fielding to the Future Force Units of Action/Employment (FF UA/UE) and Future Combat System (FCS). Efforts include the development of an uncooled infrared imaging "B-Kit" to integrate this technology across many FF systems for lower costs for production, fielding and maintenance. 3rd Gen high performance thermal imaging technology will allow simultaneous operation in the mid and long wavelength infrared bands for significantly improved ranges for acquisition of enemy forces. Sense Through The Wall (STTW) technology will improve survivability and lethality of UA/UE troops in urban environments by allowing them to detect motion through buildings and other man-made objects. This effort will be pursued in two realms, Unattended Ground Vehicle mounted for close-in and a manned ground vehicle mounted stand-off mode for infantry and intelligence missions. Imaging for REMBASS / Unattended Ground Sensors (UGS) will demonstrate the benefits of an integrated remote imaging capability with current (REMBASS) and future force (UGS) detection and tracking sensors. A major thrust will be to transition technologies to acquisition programs that meet required, advanced sensor capabilities of the FF and FCS requirements documents. This will include the ability for sensors to accomplish foliage penetration (FOPEN), Aided Target Recognition (ATR), and Close Surveillance Support System for 360 degree situational awareness for vehicles. FOPEN will allow UA/UE troops to discern enemy positions under the cover of trees and other natural cover. ATR will provide the FF unprecedented capability in automatic target hand-off. Close Surveillance Support System will allow any future vehicle crew member to see outside the vehicle in day or night without the blind spots created by armor. This will allow much improved maneuvering in urban/complex terrain, tracking of friendly soldiers and vehicles, and detection and engagement of dismounted and vehicular threats to the lighter FCS combat vehicles. Other emerging concepts resulting from ongoing operations will be supported by this program, to include route reconnaissance for road hazards, battle damage assessment including decoy and camouflage detection, detection of threat soldiers carrying RPGs, and identification of Improvised Explosive Devices (IED) and suicide bombers. FY 2005 supports a Congressional addition, developing and demonstrating the sensor portion of the Family of Integrated Rapid Response Equipment (FIRRE). FIRRE demonstrates perimeter security capabilities for fixed site applications.

FY2006/2007 funding supports continuing 3rd Gen FLIR, STTW, UGS, FOPEN, ATR, and Close Surveillance Support System as well as emerging concepts of route reconnaissance, battle damage assessment, detection of personnel with RPGs, IEDs, and suicide bombers.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
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<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Uncooled B-Kit – Extend uncooled focal plane array technology capability across multiple platforms to allow interchangeable parts for lower cost, weight, power, and volume. FY03 effort began establishment of technical specifications, producibility and timelines across FCS and Future Force systems for a Risk Reduction Demonstration decision in FY04. FY06 and beyond supports the expansion of the Uncooled B Kit (UBK) family to include larger and smaller arrays.	1635	0	896	1169
Advanced EOIR Payload with Laser Designator - conduct market survey and perform flight evaluation of potential solution for advanced UAV Payloads incorporating Laser Designation capability	789	0	0	0
Sense Through The Wall Technology to sense motion in buildings or behind other small structures from a stand-off distance. This is a concept development effort to address key FCS systems requirements. Follow on efforts explore application to existing platforms.	1851	542	1083	1066
Emerging Concepts – Explore a range of potential technologies for FCS and the Future Force that will enable route reconnaissance, battle damage assessment, and detection of threats such as personnel with RPGs, IEDs, and suicide bombers.	405	172	506	450
Foliage Penetration (FOPEN) - Technology to sense the presence of personnel and man-made objects under natural foliage. This concept development effort defines technology options, develops alternatives, and refines Army requirements. FOPEN transitions technology from the DARPA Forrester program, which demonstrates in 4QFY05-FY06	130	0	1122	1186
Aided Target Recognition (ATR) - Technology to allow FCS and the Future Force sensors to automatically detect and recognize targets, and cross cue other sensors in a tactical environment. This concept development effort defines technology, develops alternatives, and refines Army requirements. Near term products include super resolution image processing software.	185	81	362	182
Close Surveillance Support System - Perform concept development and demonstrations for a vehicle sensor system that provides an unimpeded 360 degree view of the immediate area around the vehicle from any crew position for situational awareness and threat detection. FY04 established general employment concepts and user/system needs. FY05/06 procures a demonstrator/test bed and further refines Operational concepts of employment. This effort compliments the Distributed Aperature System (DAS) ATD.	1300	768	961	0
3rd Gen FLIR - Initiate Concept and Technology Development for 3rd Gen FLIR, the next generation of advanced primary reconnaissance imaging systems for the Future Force to include FCS Unit of Action. FY04/05 supports the integration and demonstration of 3rd Gen FLIR prototypes from the 3rd Gen FLIR STO into an LRAS3, enabling side-by-side user evaluation of 3rd Gen vs 2nd Gen FLIR. FY06/07 efforts will 'productize' the 3rd Gen Detector/DEWAR/Cooler assembly for use in ground and aerial, manned and unmanned applications (as a common component).	0	896	983	835

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT			
4 - Advanced Component Development and Prototypes	0603774A - Night Vision Systems Advanced Development	131			
Accomplishments/Planned Program B(continued)		FY 2004	FY 2005	FY 2006	FY 2007
Establishment of Joint Unique Identification Program, with Army as executive agency, will be moved to new PE once established.		0	10048	0	0
Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)		0	490	0	0
Transition OVERWATCH ATD technology into current and future systems applications.		0	0	344	522
FIRRE FY05 efforts define the sensor requirements and procure the sensors to support demonstration of an integrated capability which could be quickly fielded. This effort compliments FIRRE efforts funded by PM Force Protection.		0	3588	0	0
Demonstration and testing of CRS3 (supports demonstration and testing of CRS3 developed in PE 64710 Project DL76 in FY04).		0	298	0	0
Imaging for REMBASS/UGS. Demonstrates capabilities from integrating a remote imaging capability with the detection and tracking capabilities of REMBASS (current) and Future Force UGS.		0	169	628	0
Theater Support Vessel (TSV) - Perform concept studies and systems engineering for sensor systems required to recon, and maneuver in unimproved ports and maintain situational awareness of line of sight land threats by TSVs transporting future ground forces		356	0	0	0
Totals		6651	17052	6885	5410

B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	14047	8407	6792
Current Budget (FY 2006/2007 PB)	17052	6885	5410
Total Adjustments	3005	-1522	-1382
Net of Program/Database Changes			
Congressional Program Reductions	-255		
Congressional Rescissions			
Congressional Increases	3750		
Reprogrammings			
SBIR/STTR Transfer	-490		
Adjustments to Budget Years		-1522	-1382

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February 2005

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FY 2005 Congressional Increase of \$3.75M for Night Vision Systems Advanced Development (FIRRE).
 FY 2006/FY2007 \$1.522M and \$1.382M realigned to PE/Project 643773.U02, Unique Identification (UID) program

C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	ToCompl	TotalCost
PE 0602709A/Night Vision and Electro-Optical Technology	21634	26406	23823	26686	28309	29395	30227	30441	Continue	Continue
PE 0603710A/Night Vision Advanced Development	82800	102047	51761	49341	42638	43097	49173	49622	Continue	Continue
PE 0604710A/Night Vision Devices Engineering	37452	26119	26449	38224	51748	28577	23231	22619	Continue	Continue
K38300 LRAS3	50470	48192	42293	1777	0	0	0	0	0	142732
G86100 Future Combat System	0	0	0	0	167402	328778	1520447	3621968	Continue	Continue
BA0330 TUAV	121616	131471	26000	36169	42774	101356	129056	27611	Continue	Continue
W61900 IAV	110042	117670	146085	137375	42817	0	44635	27856	0	626480
PE 654645 FCS (UGS)	0	130935	86445	106341	116608	118798	117904	81003	Continue	Continue

D. Acquisition Strategy: The advances and improvements for cooled and uncooled thermal imaging sensors, radars, Sense Through The Wall systems, and Unattended Ground Sensors activities utilize various cost reimbursement development contracts that were, and will continue to be competitively awarded using best value source selection procedures.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Laser Protection	C/CP, MIPR	DRS, Dallas, TX /SBRC, Santa Barbara, CA; NVESD	2326	0		0		0		0	2326	2326
b . Foliage Penetration efforts	T&M, MIPR	TBS	130	0		712	2Q	1076	1-4Q	Continue	Continue	Continue
c . CIRISS efforts	T&M	Various	441	0		0		0		0	441	441
d . Sensor Link Protocol efforts	MIPR	Various	105	0		0		0		0	105	105
e . Demo of payload & systems integration TSP	SS/CPFF	TRW, Sierra Vista, AZ	400	0		0		0		0	400	400
f . 3rd Gen FLIR	MIPR	NVESD	0	696	2Q	878	1Q	723	1Q	Continue	Continue	Continue
g . Close Surveillance Support System efforts	T&M	TBS	1101	668	2Q	776	1Q	0		Continue	Continue	Continue
h . Emerging Concepts efforts	T&M	Various	799	146	1Q	386	2Q	360	2Q	Continue	Continue	Continue
i . TUAV Laser Rangefinder	C/CP	Versitron, Santa Rosa, CA	300	0		0		0		0	300	300
j . Land Warrior			3750	0		0		0		0	3750	3750

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . Award CAD Contract for TSP	C/CPFF	Applied Science Technologies, Sunnyvale, CA; BAE Nashua, NH	10967	0		0		0		0	10967	10967
l . Theater Support Vessel study	TBD	TBS	106	0		0		0		0	106	106
m . ATR/ATC Activities	MIPR	Various	462	0		0		0		0	462	462
n . Uncooled B-Kit Evolution/Development	C/CP, MIPR	ADC, Newington, VA; Various others	3989	0		806	2Q	839	1Q	Continue	Continue	Continue
o . FLIR Develop/Integrate	Various	Various	1938	0		0		0		0	1938	1938
p . UAV Quieting, Etc. TSP	MIPR	TUAV Proj Office, Redstone Arsenal, AL	900	0		0		0		0	900	900
q . LRAS3 /LLDR Telescopic Mast Demo	MIPR	NVESD	685	0		0		0		0	685	685
r . Demo and eval of ENVG technology (Tx to DL67)	Various	Various	1778	0		0		0		0	1778	1778
s . Multifunction Laser Design (Tx to DL67)	C/CP	Raytheon, Dallas, TX	906	0		0		0		0	906	906

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BUDGET ACTIVITY
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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
t. SR2P	MIPR	NVESD	658	0		0		0		0	658	658
u. Demo and eval of ANVG (Tx to DL67)	Various	Various	1320	0		0		0		0	1320	1320
v. Head Tracked Commander's Sight	C/CP	Various	223	0		0		0		0	223	223
w. Large Format Array Uncooled Thermal Sight	C/CP	(Soldier effort)	400	0		0		0		0	400	400
x. Unattended Ground Sensors	Various	Various	2970	0		0		0		0	2970	2970
y. SBIR/STTR			0	490		0		0		0	490	490
z. Sense Through the wall Unmanned/Stand-Off	MIPR	Ft Huachuca & I2WD	2357	377	2Q	623	1Q	811	2Q	Continue	Continue	Continue
aa. Multi-mode Radar	Various	Various	789	0		0		0		0	0	0
bb. Aided Target Recognition efforts	T&M	TBS	160	81	1Q	282	1Q	122	1Q	0	645	645
cc. Cost Benefit Analysis TUAV	MIPR and C/FP	TRAC-WSMR, NM and TBE, Huntsville, AL	910	0		0		0		0	910	910

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BUDGET ACTIVITY
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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
dd. CRS3 Testing	MIPR	RTTC, Huntsville, AL	0	238	2Q	0		0		0	238	238
dd. Overwatch efforts	MIPR and C/FP	Various	0	0		284	2Q	447	1-4Q	0	731	866
ee. FIRRE Efforts	TBD	TBS	0	3178	2-3Q	0		0		0	3178	3137
ee. UID Program			0	10048		0		0		0	10048	10048
ff. Imaging for REMBASS/UGS	C/FP	TBS	0	149	3Q	511	1Q	0		0	660	807
Subtotal:			40870	16071		5258		4378		Continue	Continue	Continue

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	Various	1425	265	1Q	240	1Q	160	1Q	Continue	Continue	Continue
b . Engineering Support	FFP	CSC, Falls Church, VA	0	521	2Q	392	2Q	275	2Q	Continue	Continue	Continue
c . Matrix Support	MIPR	CECOM Fort Monmouth, NJ	2000	0		0		0		0	2000	2000
d . Engineering Support	FFP	MITRE; McLean, VA	1216	0		0		0		0	1216	1216
e . Engineering Support	FFP	CACI, Fort Monmouth, NJ	2356	0		0		0		0	2356	2356
Subtotal:			6997	786		632		435		Continue	Continue	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Multispectral Eval	MIPR	WSMR	308	0		0		0		0	308	308
b . FLIR Demos and Evals	MIPR	Various	836	0		0		0		0	836	836
c . ENVG Demos and Evals	MIPR	Various	105	0		0		0		0	105	105
d . HT Command Site Eval	MIPR	Various	90	0		0		0		0	90	90

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
e . ANVG Test Plan and Flight Support	MIPR	Various	480	0		0		0		0	480	480
f . ANVG Simulation/Field Eval	MIPR	Various	100	0		0		0		0	100	100
g . STTW/UGS	MIPR	Various	757	0		280	2-3Q	100	4Q	0	1137	1137
h . Operational Assessment of TSP Flight Demos	MIPR	AEC, APG, MD	350	0		0		0		0	350	350
i . Payload Demo and Emitter Spt Assessment	MIPR	EPG, Ft Huachuca, AZ	1165	0		0		0		0	1165	1165
j . Uncooled B Kit Eval	MIPR	TBD	0	0		0		185	3Q	0	185	185
k . FOPEN Eval	MIPR	TBD	0	0		320	3-4Q	0		0	320	320
l . ATR/CS3/Overwatch Evals	MIPR	TBD	0	0		105	2-3Q	60	3Q	0	165	165
m . REMBASS/UGS Demo	MIPR	TBD	0	0		65	2-3Q	0		0	65	0
n . Emerging Concepts Demo	MIPR	TBD	0	0		0		30	3Q	0	30	0
Subtotal:			4191	0		770		375		0	5336	5241

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BUDGET ACTIVITY
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management		PM-NV/RSTA, Ft.Belvoir, VA	655	195	1-4Q	225	1-4Q	222	1-4Q	Continue	Continue	Continue
Subtotal:			655	195		225		222		Continue	Continue	Continue
Project Total Cost:			52713	17052		6885		5410		Continue	Continue	Continue

Schedule Profile (R4 Exhibit)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) Uncooled B Kit MS B	▲ 1																															
(2) Unattended Ground Sensors MS B (FCS MS B update)					▲ 2																											
(3) ATR Transition to Programs									▲ 3																							
(4) Close Surveillance Support System MS B									▲ 4																							
(5) STTW Unmanned/Stand-Off MS B									▲ 5																							
(6) Uncooled B Kit Phase II MS B													▲ 6																			
(7) FOPEN MS B																	▲ 7															
(8) Hyperspectral Imager																					▲ 8											
(9) 2 Color Uncooled Focal Plane Array																									▲ 9							
(10) Suicide Bomb Detection																													▲ 10			
(11) Route Reconnaissance																													▲ 11			
(12) CRS3 Test									■																							

Schedule Detail (R4a Exhibit)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Uncooled B Kit MS B	2Q							
Uncooled B Kit Spiral Development	2-4Q		1-4Q	1-2Q				
Foliage Penetration Development			1-4Q	1-4Q	1-2Q			
Foliage Penetration Milestone B for Block II FCS					2Q			
3rd Gen FLIR Development		1-4Q	1-4Q	1-4Q	1-4Q			
Sense Thru The Wall (STTW) Development			1-4Q	1-4Q				
Sense Thru The Wall (STTW) MS B				4Q				
Unattended Ground Sensors (UGS) MS B for FCS UA		1Q						
Aided Target Recognition (ATR)		4Q	1-4Q	1-4Q				
Development/Transition						2-4Q	1-4Q	1-4Q
2 Color Uncooled Focal Plane Array						4Q	1-4Q	1-4Q
Route Reconnaissance							3-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603779A - Environmental Quality Technology Dem/Val

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	38576	41651	5166	5088	5093	5093	5090	5087	Continuing	Continuing
035 NATIONAL DEFENSE CNTR FOR ENVIRO EXCELLENCE-NDCEE	4702	4610	4987	5088	5093	5093	5090	5087	Continuing	Continuing
04E ENVIRONMENTAL RESTORATION TECH VALIDATION	5017	3089	0	0	0	0	0	0	0	15052
04I TECHNOLOGIES TO REDUCE NON-HAZARDOUS WASTE	939	2109	0	0	0	0	0	0	0	2613
04J ENVIRONMENTAL COMPLIANCE TECHNOLOGY VALIDATION	1207	1263	179	0	0	0	0	0	0	2967
04K WASTE MINIMIZATION AND POLLUTION PREVENTION	1315	958	0	0	0	0	0	0	0	3104
E12 TRANSPORTABLE DETONATION CHAMBER VALIDATION	4507	4027	0	0	0	0	0	0	0	13874
E14 ENVIRONMENTAL SECURITY INITIATIVE (CA)	3192	0	0	0	0	0	0	0	0	3362
E15 ARSENIC REMOVAL (CA)	1596	1917	0	0	0	0	0	0	0	1681
E16 ABERDEEN PG ASBESTOS CONVERSION FACILITY (CA)	1315	1150	0	0	0	0	0	0	0	1385
E17 ARMY ENVIRONMENTAL SOLUTIONS PROGRAM (CA)	2348	2397	0	0	0	0	0	0	0	2473
E19 SUSTAINABLE INSTALLATIONS INITIATIVE (CA)	939	1629	0	0	0	0	0	0	0	989
E22 ENVIRONMENTAL MANAGEMENT SYSTEM DEMONSTRATION	0	958	0	0	0	0	0	0	0	958
E23 ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) PILOT IN DOD	0	1438	0	0	0	0	0	0	0	1438
E24 ENVIRONMENTAL SECURITY TECHNICAL CERTIFICATION PRG	0	958	0	0	0	0	0	0	0	958

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E28	WELLHEAD TREATM'T OF PERCHLORATE CONTAMINATED WELL	0	2397	0	0	0	0	0	0	0	0	2397
E34	NDCEE JOINT SERVICES INITIATIVE	0	6519	0	0	0	0	0	0	0	0	6519
EN1	CASTING EMISSION REDUCTION PROGRAM (CERP)	3755	3356	0	0	0	0	0	0	0	0	15415
EN3	MANAGING ARMY TECHNOLOGY ENVIRON ENHANCEMENTS	2956	0	0	0	0	0	0	0	0	0	5033
EN6	UNEXPLODED ORDNANCE IN SUPPORT OF MILITARY READ	4788	0	0	0	0	0	0	0	0	0	12367
EN7	VANADIUM TECHNOLOGY PROGRAM	0	2876	0	0	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: There is a broad application potential for environmental quality technology (EQT) to be applied to multiple Army weapon systems and installations. However, technology must be validated (total ownership cost and performance data identified) before potential users will consider exploiting it. Therefore, this program element includes projects focused on validating the general military utility or cost reduction potential of technology when applied to different types of military equipment or techniques. It may include validations and proof-of-principle demonstrations in field exercises to evaluate upgrades or provide new operational capabilities. The validation of technologies will be in as realistic an operating environment as possible to assess performance or cost reduction potential. EQT demonstration/validation is systemic; i.e., applies to a class of systems (e.g., tanks or aircraft) or to a Department of Army-wide, multiple site/installation problem (e.g., unexploded ordnance detection and discrimination). This program will address, and eventually resource, programs in each of the environmental quality technology pillars (restoration, conservation, compliance, and pollution prevention). Work must be endorsed by potential users and supported by a state-of-the-art assessment (i.e., technology is well-in-hand).

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<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	9356	9050	8839
Current Budget (FY 2006/2007 PB)	41651	5166	5088
Total Adjustments	32295	-3884	-3751
Net of Program/Database Changes			
Congressional Program Reductions	-611		
Congressional Rescissions			
Congressional Increases	34100		
Reprogrammings			
SBIR/STTR Transfer	-1194		
Adjustments to Budget Years		-3884	-3751

Change Summary Explanation:

Funding:

FY 2005 - There were fourteen Congressionally added projects (\$34,100K) in FY05: Technologies to Reduce Non-Hazardous Solid Waste; Waste Minimization and Pollution Prevention; Transportable Detonation Chamber Validation; Arsenic Removal; Aberdeen Proving Ground (APG) Asbestos Conversion Facility; Army Environmental Solutions Program; Sustainable Installations Initiative; Environmental Management System Demonstration; Environmental Management System Pilot to DoD; Environmental Security Technical Certificate; Wellhead Treatment of Perchlorate Contamination of Wells; National Defense Center for Environmental Excellence (NDCEE) Joint Services Initiative; Casting Emission Reduction Program (CERP); and Vanadium Technology Program.

FY 2006 - Funds realigned (\$3,884K) to higher priority requirements.

FY 2007 - Funds realigned (\$3,751K) to higher priority requirements.

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
035 NATIONAL DEFENSE CNTR FOR ENVIRO EXCELLENCE-NDCEE	4702	4610	4987	5088	5093	5093	5090	5087	Continuing	Continuing

A. Mission Description and Budget Item Justification: The National Defense Center for Environmental Excellence (NDCEE) was established by Congress in 1990 with a directive to "serve as a national leadership organization to address high priority environmental problems for the Department of Defense (DoD), other government organizations, and the industrial community." The NDCEE Program is a national resource for developing and disseminating advanced environmental technologies. The NDCEE is used to demonstrate environmentally acceptable technology to industry; validate new technology prior to transferring that technology; and assist in the training of potential users as part of that technology transfer process. The NDCEE is a DoD resource for environmental quality management and technology validation. This program is managed by the Army on behalf of the Office of the Assistant Deputy Under Secretary of Defense for Environment (ADUSD-E).

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Management and operations of the NDCEE by the prime contractor.	1100	1200	1200	1200
Industrial base integration, operation of the NDCEE environmental technology facility, and environmental information analysis.	500	400	500	500
Conduct demonstration/validation of environmentally acceptable technologies that enhance military readiness and reduce production, operating, and/or disposal costs.	2702	2610	2887	2988
NDCEE Government program management during contract negotiations and execution and during project formulation, execution, and technology transfer.	400	400	400	400
Totals	4702	4610	4987	5088

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: The NDCEE is a national asset focused on DoD applications that include technology transfer to appropriate

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DoD organizations. The NDCEE fosters an outreach program to describe its products and capabilities that includes publication of task results and participation in professional meetings, symposia, conferences, and coordination with industry as much as reasonable. The management strategy for the NDCEE centers on a DoD Executive Advisory Board (EAB) chaired by the DoD NDCEE Executive Agent on behalf of the ADUSD-E and composed of senior DoD leadership to direct and oversee NDCEE operations. The EAB is supported by an EAB Working Group (EABWG) that includes staff members from each of the offices represented on the EAB. The EABWG coordinates all NDCEE activities and reports back to the EAB Principals. The EABWG is, in turn, supported by a Technical Working Group (TWG) that addresses the details of NDCEE program execution. The contracting strategy of the NDCEE is based on using an NDCEE Contracting Officer's Representative to validate all the contractual portions of the NDCEE and by technical monitors (TM) to oversee the technical aspects of each contracted task. TMs serve on the TWG. An NDCEE prime contractor operates an NDCEE test facility(s) to validate environmentally compatible technologies on a representative "shop floor". The NDCEE accounts for and conducts work for: (1) direct funded Army tasks; (2) reimbursable tasks from within DoD and from other Government agencies; and (3) Congressionally directed and funded tasks.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Not applicable.			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Technical Data	C; CPFF	Concurrent Technologies Corporation (CTC), Johnstown, PA	3500	1600	2Q	1700	2Q	1700	2Q	Continue	Continue	Continue
Subtotal:			3500	1600		1700		1700		Continue	Continue	Continue

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Testing	C; CPFF	Concurrent Technologies Corp.	2466	0		0		0		0	2466	2466
b . Development Testing	C; CPFF	Concurrent Technologies Corp.	5619	2610	2Q	2887	2Q	2988	2Q	Continue	Continue	Continue
Subtotal:			8085	2610		2887		2988		Continue	Continue	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Support	Allotment	Office of the Assistant Sec Army (Installations and Environment)	2387	400	2Q	400	2Q	400	2Q	Continue	Continue	Continue
Subtotal:			2387	400		400		400		Continue	Continue	Continue

Project Total Cost:			13972	4610		4987		5088		Continue	Continue	Continue
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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
E22 ENVIRONMENTAL MANAGEMENT SYSTEM DEMONSTRATION	0	958	0	0	0	0	0	0	0	958

A. Mission Description and Budget Item Justification: The Environmental Management System Demonstration is a new Congressional interest project. The project involves pilot projects, in which Army installations will install internet-based environmental management systems.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Installation of internet-based environmental management systems for purposes of demonstration and validation.	0	958	0	0
Totals	0	958	0	0

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

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E23

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
E23 ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) PILOT IN DOD	0	1438	0	0	0	0	0	0	0	1438

A. Mission Description and Budget Item Justification: The Environmental Management System (EMS) Pilot in Department of Defense (DOD) is a new Congressional interest project. The project is to demonstrate and validate EMS internet-based software applications at Defense sites in order to better manage environmental information and reduce compliance burdens of installations.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
To demonstrate and validate EMS internet-based software applications at Defense sites.	0	1438	0	0
Totals	0	1438	0	0

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

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E24

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
E24 ENVIRONMENTAL SECURITY TECHNICAL CERTIFICATION PRG	0	958	0	0	0	0	0	0	0	958

A. Mission Description and Budget Item Justification: The Environmental Security Technical Certification Program is a new Congressional interest project. This project is only for a demonstration of remediation technologies in the eastern portion of the Bunker Hill Basin served by the East Valley Water District in San Bernardino, California.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
To demonstrate remediation technologies in the eastern portion of the Bunker Hill Basin served by the East Valley Water District.	0	958	0	0
Totals	0	958	0	0

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

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E28

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
E28 WELLHEAD TREATM'T OF PERCHLORATE CONTAMINATED WELL	0	2397	0	0	0	0	0	0	0	2397

A. Mission Description and Budget Item Justification: The Wellhead Treatment of Perchlorate Contaminated Well is a new Congressional interest project. It is to demonstrate enhancements to existing, best available technologies, as well as new and cost-effective technologies to remediate the perchlorate-contaminated public drinking water supplies in the Rialto, Fontana, and Colton (California) areas.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
To demonstrate enhancements to existing, best available technologies (as well as new and cost-effective technologies) to remediate the perchlorate-contaminated public drinking water supplies in Rialto, Fontana, and Colton (California) areas.	0	2397	0	0
Totals	0	2397	0	0

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

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E34

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
E34 NDCEE JOINT SERVICES INITIATIVE	0	6519	0	0	0	0	0	0	0	6519

A. Mission Description and Budget Item Justification: The National Defense Center for Environmental Excellence (NDCEE) Joint Services Initiative is a new Congressional interest project. The project is to address joint service environmental requirements, identify technological solutions, and perform technology management and demonstration/validation to permit widespread technology adoption.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
To address joint service environmental requirements, identify technological solutions and perform technology management and demonstration/validation to permit widespread technology adoption.	0	6519	0	0
Totals	0	6519	0	0

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

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BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes				PE NUMBER AND TITLE 0603782A - WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL				PROJECT 355		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
355 WIN-TACTICAL - DEM/VAL	77275	95321	131081	152490	142345	50932	17008	10241	0	725542

A. Mission Description and Budget Item Justification: Warfighter Information Network-Tactical (WIN-T) is the Army's communications system for reliable, secure, and seamless video, data, imagery, and voice services that enables decisive combat actions. It will be focused on moving information in a manner that supports commanders, staffs, functional units, and capabilities-based formations - all mobile, agile, lethal, sustainable, and deployable. It will be optimized for offensive and joint operations so that the theater combatant commander will have the capability to perform multiple missions simultaneously with campaign quality. WIN-T will establish an environment in which commanders at all echelons will have the ability to operate with virtual staffs and analytical centers that are located at remote locations throughout the battlespace. As a key system supporting the Army's Current and Future Force, WIN-T meets the pressing need for efficient battlefield bandwidth utilization, optimal data throughput, on-the-move critical information exchange, and rapid infrastructure modernization. WIN-T operates as the principal means to frame the tactical infosphere that encompasses both the Unit of Employment (UE) and Unit of Action (UA) areas of influence. The tactical infosphere will operate while mobile, via its robust networking, and be able to pass relevant information for system of systems combined arms capabilities in all terrain and under all environmental conditions. Future Combat Systems (FCS), Joint Tactical Radio System (JTRS), satellite terminals and other Department of Defense (DoD) Command, Control, Communications & Computers, Intelligence (C4I) programs are relying on WIN-T for seamless integration into the DoD Global Information Grid (GIG). WIN-T will be optimized for offensive and joint operations, while providing the Theater Combatant the capability to plan, prepare, and execute multiple missions and tasks simultaneously with campaign quality utilizing a mobile throughput feature. It will be a framework conforming to established standards and protocols for the network while interfacing with and/or replacing equipment in current forces. The WIN-T outmodes Mobile Subscriber Equipment (MSE) and Tri-Services Tactical Communications (TRI-TAC) capabilities.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Prepare technical assessment and research studies.	710	925	940	605
Prepare/coordinate Request For Proposal (RFP) and Milestone C Decision documentation, perform program support and management efforts, and conduct System Design Review (SDR), Critical Design Review (CDR), Preliminary Design Review (PDR) and a Production Should Cost Effort.	4695	5699	6242	5235
Completes final portion of Phase 2 System Development and Demonstration (SDD). The Prime Contractor and major subcontractors provide final architecture, Modeling and Simulation (M&S), system design, preliminary design and prototypes to support tests, Milestone C and production contract efforts.	63756	73921	5315	0

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BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes	PE NUMBER AND TITLE 0603782A - WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	PROJECT 355
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Accomplishments/Planned Program B(continued)	FY 2004	FY 2005	FY 2006	FY 2007
Provide test support to include M&S and Development Test/Operational Test (DT/OT).	2379	7817	7002	9355
Provide system engineering and technical support to the WIN-T program.	5735	6959	6353	5223
Low Rate Initial Production (LRIP) Development	0	0	105229	132072
Totals	77275	95321	131081	152490

B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	99645	140302	158215
Current Budget (FY 2006/2007 PB)	95321	131081	152490
Total Adjustments	-4324	-9221	-5725
Net of Program/Database Changes			
Congressional Program Reductions	-1610		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-2714		
Adjustments to Budget Years		-9221	-5725

Change Summary Explanation:
 FY04 Program/Database Changes (-1861)
 FY04 SBIR/STTR Transfers (-2257)
 FY05 Congressional Program Deductions (-\$1610)
 FY05 SBIR/STTR Transfers (-\$2714)
 FY06 funds realigned (-\$9221) to higher priority requirements.
 FY07 funds realigned (-\$5725) to higher priority requirements.

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C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
B79100 - WIN-Tactical Program (OPA)	0	0	122433	108100	245742	334847	675008	670658	8981431	11138219

D. Acquisition Strategy: In August 2002, two separate competitive contracts were awarded to General Dynamics Government Systems Corporation and Lockheed Martin Mission Systems to perform Pre-Milestone B efforts which included system engineering tasks, program management tasks and engineering services necessary to conduct initial requirements analyses and generate network architecture designs. The 30 July 2003, Milestone B Defense Acquisition Board approved entry of the WIN-T program into the System Development and Demonstration (SDD) Phase, resulting in the contract SDD option awards to further develop the architecture, produce prototypes, conduct modeling and simulation, and support a Development Test/Operational Test by the end of FY 2005.

On 10 September 2004, the Defense Acquisition Executive authorized a revised acquisition approach for the WIN-T program. The new approach combines the two contractors into a single team with General Dynamics as the prime and Lockheed Martin as a major subcontractor. Formal direction to start work on the combined approach was sent to both contractors on 15 September 2004. The Lockheed Martin contract was terminated for convenience on 26 September 2004. An amendment to the Acquisition Strategy has been developed and approved by the Army Acquisition Executive. It is currently being staffed through OSD for Defense Acquisition Executive approval. The WIN-T schedule has been updated to reflect the combined team architecture and timeline. A sole source Production contract is expected to be awarded in 2QFY06, under which the Prime contractor will proceed with Low Rate Initial Production (LRIP) and Full Rate Production (FRP). The LRIP development funds complete the development of production configuration and training and logistics materials.

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Phase 1 Pre Milestone B	CPFF/T&M	Lockheed Martin Mission Systems, Gaithersburg, MD	21185	0		0		0		0	21185	0
b . Phase 1 Pre Milestone B	CPFF/T&M	General Dynamics Government Systems Corp, Taunton, MA	13306	0		0		0		0	13306	0
c . Phase 2 SDD	CPFF/T&M	Lockheed Martin Mission Systems, Gaithersburg, MD	39962	0		0		0		0	39962	0
d . Phase 2 SDD	CPFF/CPAF/T&M	General Dynamics Government Systems Corp, Taunton, MA	35826	73921	1-4Q	5316	1Q	0		0	115063	0
e . LRIP Development	CPIF	General Dynamics Government Systems Corp, Taunton, MA	0	0		105229	1Q	132072	1Q	Continue	237301	0
Subtotal:			110279	73921		110545		132072		Continue	426817	0

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4 - Advanced Component Development and Prototypes

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . WIN-T Technical Assessment and Research Studies	Various	Various	1541	925	1-4Q	940	1-4Q	605	1-4Q	Continue	4011	0
b . Systems Engineering and Technical Support	Various	Various	11877	6959	1-4Q	6353	1-4Q	5223	1-4Q	Continue	30412	0
Subtotal:			13418	7884		7293		5828		Continue	34423	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Modeling and Simulation and Testing	Various	Various	4270	7817	1-4Q	7002	1-4Q	9355	1-4Q	Continue	28444	0
Subtotal:			4270	7817		7002		9355		Continue	28444	0

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4 - Advanced Component Development and Prototypes

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Documentation Preparation & PM Support	Various	Various	4965	4086	1-4Q	3958	1-4Q	3483	1-4Q	Continue	16492	0
b . Conducted Source Selection Evaluation Board and Conduct Should Cost Effort	Various	Various	326	0		563	1-4Q	0		0	889	0
c . Travel, licenses, facilities, etc.	Various	Various	1640	891	1-4Q	905	1-4Q	922	1-4Q	Continue	4358	0
d . MITRE Support	PWD	MITRE, Eatontown, NJ	3365	722	1-4Q	815	1-4Q	830	1-4Q	Continue	5732	0
Subtotal:			10296	5699		6241		5235		Continue	27471	0
Project Total Cost:			138263	95321		131081		152490		Continue	517155	0

Schedule Profile (R4 Exhibit)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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 NETWORK-TACTICAL - DEM/VAL**

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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) In-Process Review	▲ 1 IPR																															
(2) CDR									▲ 2 CDR																							
Development Test/Operational Test									DT/OT																							
(3) Production RFP Release, (4) MS C					Prod RFP Rel				▲ 3 ▲ 4 MS C																							
Phase 2 SDD	Phase 2 SDD																															
LRIP, FRP													LRIP				FRP															
1. Prod Verification Test-C, 2. Logistics Demonstration, 3. Prod Verification Test-G, 4. New Equipment Training, 5. Force Development Test & Evaluation, 6. Initial Operational Test													1 2 3 4 5 6																			
(5) IOC																					▲ 5 IOC											

Schedule Detail (R4a Exhibit)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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NETWORK-TACTICAL - DEM/VAL

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Schedule Detail	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Phase 2 SDD Option	1-4Q	1-4Q	1-2Q					
Combined Contract Team	4Q							
System Design Review		2Q						
Development Test/Operational Test (DT/OT)			1Q					
Production RFP Release			1Q					
Milestone C Decision			2Q					
Production Contract			2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	
Initial Operational Test (IOT)					4Q	1-2Q		
Initial Operational Capability (IOC)							2Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603790A - NATO Research and Development

PROJECT
691

COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
691 NATO RSCH & DEVEL	2608	4600	4902	4994	5182	5275	5366	5460	0	42948

A. Mission Description and Budget Item Justification: This program implements the provisions of Title 10 U.S. Code, Section 2350a, Cooperative Research and Development (R&D) Projects: Allied Countries. The objective is to improve, through the application of emerging technologies, the conventional defense capabilities of the United States and our cooperative partners, including the North Atlantic Treaty Organization (NATO), U.S. major non-NATO allies and Friendly Foreign countries. Through technology sharing and joint equipment development these projects help reduce U.S. acquisition costs and leverage important technologies for the Army Transformation and the development of the Future Combat system. Cooperative efforts also improve multinational force compatibility with potential coalition partners through the development and use of similar equipment and improved interfaces. The program focuses specifically on international cooperative technology demonstration, validation, and interoperability of Army weapon and command, control, communications and information (C3I) systems. Projects are implemented through international agreements with foreign partners that define scope, cost and work sharing arrangements, management, contracting, security, data protection and third party transfers. Funds are used to pay for only the U.S. work share that occurs in the United States at U.S. Government and U.S. contractors' facilities.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Multilateral Interoperability Program (MIP) (Partners: Germany, France, United Kingdom, Canada, Italy): Continued integration work from the Command and Control Systems Interoperability Program (C2SIP) into an Advanced Concept Technology Demonstration (ACTD) to achieve NATO levels four (messaging) and five (database) interoperability and also extend the effort into a sustainable program to incorporate lessons learned into national systems.	100	450	600	640
International Agreement Tracking System (IATS)/International Online (IO) Development and Implementation, NATO/International Cooperative R&D Policy Development, and Report to Congress Pursuant to 10 USC 2350a, prepare and provide to USD(A&T) the Army section of the Report to Congress on the International Cooperative Research and Development Program.	618	740	802	808
Low Level Air Defense Interoperability (LLAPI) (Partners: Major NATO Allies): The objective of this program is to successfully demonstrate Command and Control (C2) interoperability among the participant nations' Short Range Air Defense (SHORAD) assets for automated air picture exchange.	200	200	200	200
Shared Tactical Ground Picture (STGP)/Single Integrated Ground Picture (SIGP) (Partners: United Kingdom and Norway): STGP/SIGP is an OSD interoperability initiative. The STGP is a coalition (U.S./UK/NO) part of the SIGP which is key to the Future Combat System. STGP links directly with SIGP and FCS making the Army a key player.	100	460	500	506

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Accomplishments/Planned Program B(continued)	FY 2004	FY 2005	FY 2006	FY 2007
Combat Identification (Partners: UK, Germany, France and Italy): Combat ID will pursue the extension of tasks required for implementing the associated NATO Standardization Agreement (STANAG 4579), allied participation in Coalition Combat ID Advanced Concept Technology Demonstrator (ACTD), will pursue the NATO Staff Requirement and a STANAG for the Dismounted Soldier ID.	100	100	100	100
Simulation and Command and Control (C2) Information System Connectivity Experimentation (SINCE) (Partner: Germany): Continues to define and demonstrate a generic solution for interfacing and networking Brigade/Battalion (BDE/BN) Command and Control Information Systems (C2IS) and applicable Modeling and Simulation (M&S) systems as required to support Coalition Force Collaborative Mission Management Experimentation.	400	400	0	0
Senior National Representatives (Army) (SNR(A))/International Cooperative Opportunities (ICO) Projects (Partners: France, Germany, United Kingdom, Italy): Supports harmonization of programs at various levels; exchanging information, identifying knowledge gaps and conducting feasibility studies to further promote cooperative development; standardizing, fielding and roadmapping various processes; distributing the workload among the different nations. The Mine Protection for Armored Vehicles (MPAV) Working Group, specifically, will explore mine protection techniques and technologies in pursuit of advanced armor opportunities in mine protections, and other applicable cooperative R&D areas. Another ongoing program is Lightweight Soldier System Working Group which examines digitized soldier power-sharing during coalition operations. The study explores various requirements associated with standardization of soldier communications to define levels of interconnectivity and hardware solutions.	720	995	1100	1100
Technology Research and Development Projects (TRDP) (Partners: United Kingdom, Germany, France, Canada, Australia, Netherlands, Korea, Norway): The scope of this MOU encompasses R&D collaboration on basic, exploratory and advanced Land Warfare Concepts and Technologies that are focused on Future Combat System enabling technologies, the maturation of which may lead to the development of technologically superior conventional weapon systems.	0	780	1000	1000
Artillery Command and Control Interoperability (ASCA) (Partners: France, Germany, Italy, UK): The Participants in this program will develop an automated software interface between their national field artillery command and control systems. The nations will be able to receive and provide mutual fire support (i.e. cannon and rocket fire) in combined operations more rapidly and with minimal errors.	190	300	300	320

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<u>Accomplishments/Planned Program A(continued)</u>	FY 2004	FY 2005	FY 2006	FY 2007
Joint Tactical Radio System (JTRS) (Partners: Japan, Sweden, UK): The participants in these programs will develop and implement Software-enabled radios as replacements to current radio systems. The projects shall be focused on maintaining interoperability as the countries pursue their own separate software radio programs. The project agreements (PAs) will include a joint development of software radio specifications, separate development and testing of software waveforms, and joint interoperability testing using the system assets developed as part of the agreements.	100	175	300	320
Small Business Innovative Research/Small Business Technology Transfer Programs	80	0	0	0
Totals	2608	4600	4902	4994

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	4801	4869	4949
Current Budget (FY 2006/2007 PB)	4600	4902	4994
Total Adjustments	-201	33	45
Net of Program/Database Changes			
Congressional Program Reductions			
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years	-201	33	45

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C. Other Program Funding Summary: None

D. Acquisition Strategy: All projects are test or technical demonstrations to feed into potential new requirements in support of Army Transformation to the Future Force or as product improvements to the Current Force.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Multilateral Interoperability Program (MIP)	CPFF	C3S, CSC Fort Washington, PA	861	100	1Q	150	1Q	150	1Q	0	1261	0
b . International Agreement Tracking System (IATS) - Software Development	CPFF	JIL Information Systems Vienna, VA	1311	520	2Q	552	2Q	560	2Q	0	2943	0
c . Low Level Air Defense Interoperability (LLAPI)	MIPR	AMCOM, Redstone Ars, AL	437	115	1Q	115	1Q	115	1Q	0	782	0
d . Shared Tactical Ground Picture (STGP)/Single Integrated Ground Picture (SIGP)	MIPR	CECOM, Ft. Monmouth, VA	69	346	2Q	346	2Q	346	2Q	0	1107	0
e . Combat Identification	MIPR	CECOM, Ft. Monmouth, VA	787	25	1Q	25	1Q	25	1Q	0	862	0
f . Simulation & C2 Information System Connectivity Experimentation (SINCE) - C2 Systems	MIPR	CECOM, Ft. Monmouth, VA	1417	140	1Q	0	1Q	0		0	1557	0
g . Senior National Representatives (Army) (SNR[A])	TBD	TBD	2997	692	2Q	761	2Q	761	2Q	0	5211	0
h . TRDP	TBD	TBD	0	312	2Q	328	2Q	328	2Q	0	968	0

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BUDGET ACTIVITY
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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
i . Artillery Command and Control Interoperability (ASCA)	MIPR	CECOM, Ft. Monmouth, NJ	344	208	1Q	208	1Q	208	1Q	0	968	0
j . Joint Tactical Radio System (JTRS)	MIPR	PM JTRS, Rosslyn, VA	50	100	1Q	150	1Q	150	1Q	0	450	0
Subtotal:			8273	2558		2635		2643		0	16109	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MIP	MIPR	CECOM Ft. Monmouth, NJ	208	100	1Q	150	1Q	190	1Q	0	648	0
b . IATS	MIPR	RDECOM, Ft. Belvoir, VA	300	116	1Q	126	1Q	125	1Q	0	667	0
c . Low Level Air Defense Interoperability (LLAPI)	MIPR	AMCOM, Redstone Ars, AL	244	41	1Q	41	1Q	41	1Q	0	367	0
d . Shared Tactical Ground Picture (STGP)/Single Integrated Ground Picture (SIGP)	MIPR	CECOM, Ft. Monmouth, VA	15	77	1Q	77	1Q	83	1-3Q	0	252	0

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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
e . Combat Identification	MIPR	CECOM Ft. Monmouth, NJ	439	25	1Q	25	1Q	25	1Q	0	514	0
f . Simulation and C2 Information System Connectivity Experimentation (SINCE)	MIPR	CECOM Ft. Monmouth, NJ	384	100	1Q	0	1Q	0		0	484	0
g . SNR(A)	MIPR	TBD	642	154	1Q	169	1Q	169	1Q	0	1134	0
h . TRDP	MIPR	TBD	0	313	1Q	329	1Q	329	1Q	0	971	0
i . Artillery Command and Control Interoperability (ASCA)	MIPR	CECOM Ft. Monmouth, NJ	73	46	1Q	46	1Q	66	1Q	0	231	0
j . Joint Tactical Radio System (JTRS)	MIPR	PM JTRS, Rosslyn, VA	25	50	1Q	75	1Q	95	1Q	0	245	0
Subtotal:			2330	1022		1038		1123		0	5513	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MIP	MIPR	CECOM Ft Monmouth, NJ	147	100	1Q	150	1Q	150	1Q	0	547	0
b . IATS	MIPR	RDECOM, Ft. Belvoir, VA	201	77	1Q	84	1Q	83	1Q	0	445	0
c . Low Level Air Defense Interoperability (LLAPI)	MIPR	AMCOM, Redstone Ars, AL	99	13	1Q	13	1Q	13	1Q	0	138	0
d . Shared Tactical Ground Picture (STGP)/Single Integrated Ground Picture (SIGP)	MIPR	AMSAA, Aberdeen Proving Ground, NJ	10	20	1Q	52	1Q	52	1Q	0	134	0
e . Combat Identification	MIPR	CECOM Ft Monmouth, NJ	419	25		25	1Q	25	1Q	0	494	0
f . Simulation and C2 Information System Connectivity Experimentation (SINCE)	MIPR	CECOM Ft Monmouth, NJ	291	100	1Q	0		0		0	391	0
g . SNR(A)	MIPR	TBD	405	103	1Q	113	1Q	113	1-2Q	0	734	0
h . TRDP	MIPR	TBD	0	0		0		0		0	0	0
i . ASCA	MIPR	CECOM Ft Monmouth, NJ	50	31	1Q	31	1Q	31	1Q	0	143	0
j . Joint Tactical Radio System (JTRS)	MIPR	CECOM Ft Monmouth, NJ	12	10	1Q	38	1Q	38	1Q	0	98	0

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III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			1634	479		506		505		0	3124	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MIP	MIPR	PEO C3S, Ft. Monmouth, NJ	86	100	1Q	150	1Q	150	1Q	0	486	0
b . IATS	MIPR	RDECOM, Ft. Belvoir, VA	98	37	1Q	41	1Q	41	1Q	0	217	0
c . Low Level Air Defense Interoperability (LLAPI)	MIPR	AMCOM, Redstone, Ars, AL	143	31	1Q	31	1Q	31	1Q	0	236	0
d . Shared Tactical Ground Picture (STGP)/Single Integrated Ground Picture (SIGP)	MIPR	CECOM, Ft. Monmouth, VA	5	17	1Q	25	1Q	25	1Q	0	72	0
e . Combat Identification	MIPR	CECOM, Ft. Monmouth, NJ	357	25	1Q	25	1Q	25	1Q	0	432	0
f . Simulation and C2 Information System Connectivity Experimentation (SINCE)	MIPR	CECOM, Ft. Monmouth, NJ	192	100	1Q	0	1Q	0	1Q	0	292	0

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IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
g . SNR(A)	MIPR	TBD	217	46	1Q	56	1Q	56	1Q	0	375	0
h . TRDP	MIPR	TBD	0	155	1Q	342	1Q	342	1Q	0	839	0
i . Artillery Command and Control Interoperability (ASCA)	MIPR	CECOM, Ft. Monmouth, NJ	24	15	1Q	15	1Q	15	1Q	0	69	0
j . JTRS	MIPR	PM JTRS, Rosslyn, VA	12	15		38		38		0	103	0
Subtotal:			1134	541		723		723		0	3121	0
Project Total Cost:			13371	4600		4902		4994		0	27867	0

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PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	13763	16017	6249	6614	6295	6821	9009	8947	Continuing	Continuing
079 JT SURVIVABILITY INVES	0	958	0	0	0	0	0	0	0	0
B32 ADV MAINT CONCEPTS/EQ	6662	8883	6249	6614	6295	6821	9009	8947	Continuing	Continuing
B45 AIRCREW INTEGRATED SYS-AD	7101	6176	0	0	0	0	0	0	0	17374

A. Mission Description and Budget Item Justification: This PE provides advanced development aviation support of tactical programs associated with air mobility, advanced maintenance concepts and equipment, and Aircrew Integrated Systems (ACIS).

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	12113	9872	10113
Current Budget (FY 2006/2007 PB)	16017	6249	6614
Total Adjustments	3904	-3623	-3499
Net of Program/Database Changes			
Congressional Program Reductions	-238		
Congressional Rescissions			
Congressional Increases	4600		
Reprogrammings			
SBIR/STTR Transfer	-458		
Adjustments to Budget Years		-3623	-3499

Change Summary Explanation: Funding - FY 06/07: Funds realigned to higher priority requirements.

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
B32 ADV MAINT CONCEPTS/EQ	6662	8883	6249	6614	6295	6821	9009	8947	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program explores, develops, and integrates affordable Aviation Ground Support Equipment (AGSE) and diagnostic technologies to replace obsolete and unsupportable AGSE and diagnostic equipment. It enhances utilization of current and future aircraft by improving the efficiency of maintenance and servicing operations by validating new maintenance concepts to improve man and machine interfaces, enhance aircraft maintenance processes and reduce Operation and Support (O&S) costs. It provides for development of rapid battle repair procedures and tools development to speed the return of aircraft to combat ready status, and development of new equipment for aerial recovery of damaged aircraft. Included in this program are projects such as: evaluation of database management software, diagnostic/prognostic monitoring systems, Battle Damage Assessment and Repair (BDAR) procedures and tools, support to modernized aircraft, advanced powered electric drive vehicle concepts in aviation ground support function area, Aviation Turbine Engine Diagnostic System (ATEDS), Generic Aircraft Nitrogen Generator (GANG), Multipurpose Aircraft Support System (MASS), Flexible Engine Diagnostic System/Shaft Engine Test Instrumentation (FEDS/SETI), Future Tactical Truck System (FTTS), Advanced Concept Technical Demonstration (ACTD) at the National Automotive Center (NAC), Unit Maintenance Aerial Recovery Kit (UMARK), and development of the modular Aviation Ground Power Unit (AGPU) III in conjunction with the Hybrid Electric Vehicle Aviation - prototype and Future Tactical Truck Systems - Integration (FTTS).

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Aviation Turbine Engine Diagnostic System (ATEDS) - Software development and demonstration	1651	0	0	0
ATEDS - Multi Engine/Integration	788	3147	1000	0
ATEDS II - Program Diagnostics	0	0	0	600
BDAR System - Demonstration & validation Block II	0	0	100	100
Standard Aircraft Towing System (SATS) Block II- MASS	300	200	300	510
Aviation Ground Recovery System	0	0	50	0
Shop Sets - Fuel Quantity Testers	0	0	50	100
GANG - AVUM Minipack	0	0	100	100
FEDS/SETI	0	150	250	300
Shop Equipment Contact Maintenance (SECM) Modernization - Block II	450	350	0	0
Maintenance Platform & Tow Bar Modernization	200	150	0	0
Hybrid Electric Vehicle Aviation - prototype, systems integration, early operational assessment, maintenance, modularization, and modular AGPU III.	773	1650	1065	75

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Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
Hybrid Vehicle Upgrade FTTS/ACTD (NAC)	500	500	250	0
FTTS - Integration	0	0	0	1075
Advanced AGSE Working Group	0	100	100	100
Deployable SECM Maintenance Shelter - I/II	125	0	150	0
Deployable Aviation Maintenance Shelter - III (Aircraft)	0	0	50	150
UMARK II	0	0	100	100
Shop Set Complex - Redesign	0	0	205	450
Aviation Vibration Analyzer II (AVA-II)	105	111	0	0
New Aviation Tool Sets (NATS) - Evaluation and Redesign	0	0	200	250
SECM III - (FTTS Aviation Variant)	0	0	244	669
Current Force Aircraft Upgrade Support	0	0	100	100
Joint Aircraft Towing System Demo (Army and USAF)	100	200	0	0
Management Support Services	401	546	580	610
Technical Engineering Services	1269	1679	1255	1225
RDT&E Project Test Support	0	100	100	100
Totals	6662	8883	6249	6614

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Aircraft Procurement, Army(APA) SSN AZ3100	16474	56325	70436	84098	92671	97909	82100	77552	Continuing	Continuing

C. Acquisition Strategy: This project is an aggregate of advanced maintenance concepts-related projects. While the detailed acquisition strategy varies from project to project, the general strategy for each individual project is to complete the development effort through Government test (developmental and operational). Program documentation for milestone decision is prepared, as appropriate, concurrently with the development effort.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ATEDS - Software development and demonstration	C/CPFF	Boeing/GE, Mesa, AZ	1651	0		0		0		0	1651	1651
b . ATEDS - Multi Engine/Integration	C/CPFF	Boeing/GE, Sikorsky/GE, Honeywell; PIF, Redstone Arsenal, AL	1563	3147	2Q	1000	2Q	0		0	5710	5710
c . ATEDS II - Program Diagnostics	C/CPFF	TBS	0	0		0		600	1Q	Continue	Continue	Continue
d . BDAR System Block II	MIPR	AATD, Ft. Eustis, VA	0	0		100	3Q	100	2Q	0	200	0
e . SATS - Block II (MASS)	MIPR	AATD, Ft. Eustis, VA	300	200	2Q	300	2Q	510	2Q	Continue	1310	Continue
f . Aviation Ground Recovery System	TBS	TBS	0	0		50	3Q	0		0	50	0
g . Shop Sets - Fuel Quantity Testers	TBS	TBS	0	0		50	3Q	100	2Q	0	150	0
h . GANG - AVUM Minipack	MIPR	AATD, Ft. Eustis, VA	0	0		100	3Q	100	2Q	0	200	0
i . FEDS/SETI	MIPR	Navy, Lakehurst, NJ	0	150	3Q	250	2Q	300	3Q	Continue	Continue	Continue
j . SECM - Block II	MIPR	PIF, Redstone Arsenal, AL	450	350	2Q	0		0		0	800	0

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . Maintenance Platform & Towbar Modernization	MIPR	AATD, Ft. Eustis, VA	200	150	2Q	0		0		0	350	0
l . Hybrid Electric Vehicle AVN - prototype, sys integ, early opr test, maint, modular AGPU III	C/CPFF	AM General, Detroit, MI/Solectra, Boston, MA, (Applied Geo Tech (AGT)/AAI Corp, Choctaw, MS	2771	1650	2Q	1065	2Q	75	2Q	0	5561	5561
m . Hybrid Vehicle Upgrade FTTS/ACTD (NAC)	MIPR	Tank and Automotive Research and Development Command (TARDEC), NAC	500	500	1Q	250	2Q	0		0	1250	0
n . FTTS Integration	MIPR	TARDEC, NAC	0	0		0		1075	2Q	Continue	Continue	Continue
o . Advanced AGSE Working Group	TBS	AGSE, Redstone Arsenal, AL	0	100	3Q	100	2Q	100	2Q	Continue	Continue	Continue
p . Deployable SECM Maintenance Shelter I/II	MIPR	AATD, Ft. Eustis, VA	125	0		150	3Q	0		0	275	0
q . Deployable Aviation Maintenance Shelter III (Aircraft)	MIPR	AATD, Ft. Eustis, VA	0	0		50	2Q	150	2Q	Continue	Continue	Continue
r . UMARK II	MIPR	AATD, Ft. Eustis, VA	0	0		100	3Q	100	3Q	0	200	0

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
s . Shop Set Complex - Redesign	TBS	TBS	0	0		205	2Q	450	2Q	450	1105	0
t . AVA II	MIPR	PIF, Redstone Arsenal, AL	1055	111	2Q	0		0		0	1166	0
u . NATS Eval & Redesign	MIPR	AATD, Ft. Eustis, VA	0	0		200	2Q	250	2Q	Continue	Continue	Continue
v . SECM III (FTTS Aviation Variant)	MIPR	PIF, Redstone Arsenal, AL	0	0		244	3Q	669	3Q	Continue	Continue	Continue
w . Current Force Aircraft Upgrade Support	TBS	TBS	0	0		100	3Q	100	2Q	0	200	0
x . Joint Aircraft Towing System Demo (Army and USAF)	MIPR	USAF, Warner Robbins Air Force Base, GA	100	200	2Q	0		0		0	300	0
Subtotal:			8715	6558		4314		4679		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

PROJECT
B32

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Technical Engineering Services	MIPR	AATD, Ft. Eustis, VA	3058	1077	1-3Q	1055	1-3Q	1025	1-3Q	Continue	6215	Continue
b . Technical Engineering Services	C/FFP	Camber/Directorate for Combat Developments, Ft. Rucker, AL	219	602	1-3Q	200	1-2Q	200	1-3Q	Continue	1221	Continue
Subtotal:			3277	1679		1255		1225		Continue	7436	Continue

Remarks: None

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . RDT&E Project Test Support	MIPR	ATEC	0	100	1-3Q	100	1-3Q	100	1-3Q	Continue	Continue	Continue
Subtotal:			0	100		100		100		Continue	Continue	Continue

Remarks: None

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

PROJECT
B32

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Support	C/T&M	Science Applications Intl Corp, San Diego, CA	949	223	1-3Q	240	1Q	250	1Q	Continue	1662	Continue
b . Program Management In-House	In-house	AGSE, Redstone Arsenal, AL	753	323	1-4Q	340	1-4Q	360	1-4Q	Continue	1776	Continue
Subtotal:			1702	546		580		610		Continue	3438	Continue

Remarks: None

Project Total Cost:			13694	8883		6249		6614		Continue	Continue	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

PROJECT
B32

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Aviation Turbine Engine Diagnostic System/Integration/ATEDS II Diagnostic	ATEDS																															
New Aviation Tool Sets-Evaluation & Redesign	NATS																															
Battle Damage Assessment & Repair-Block II	BDAR																															
Flexible Engine Diagnostic System/Shaft engine Test Instrumentation	FEDS/SETI																															
Standard Aircraft Towing System / Multiple Aircraft Support System	SATS / MASS																															
Shop Equipment Contact Maintenance Mod-Block I / II / III	SECM - I / II / III																															
Hybrid Vehicle / Future Tactical Truck System / Modular AGPU III	HYBRID VEHICLE / FTTS / Modular AGPU III																															
Misc Projects (Mt Platforms, Towbars, Mt Cover, UMARK II, GANG, etc.)	MISC PROJECTS																															

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

PROJECT
B32

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
AVIATION TURBINE ENGINE DIAGNOSTIC SYSTEM (ATEDS) - DEVELOP SOFTWARE	1-4Q							
AVIATION TURBINE ENGINE DIAGNOSTIC SYSTEM (ATEDS) - MULTI ENG INTEGRATION	2-4Q	1-4Q	1-4Q					
AVIATION TURBINE ENGINE DIAGNOSTIC SYSTEM (ATEDS II), PROG DIAGNOSTICS				1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
BATTLE DAMAGE ASSMNT & REPAIR (BDAR) SYSTEM - DEMO & VALIDATION BLOCK II			3-4Q	1-4Q				
STANDARD AIRCRAFT TOWING SYSTEM (SATS) - BLOCK II - MASS	3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-2Q		
AVIATION GROUND RECOVERY SYSTEM			3-4Q					
SHOP SETS - FUEL QUANTITY TESTERS			3-4Q	1-2Q				
GENERIC AIRCRAFT NITROGEN GENERATOR (GANG) - AVUM MINIPACK			3-4Q	1-4Q				
FLEX ENGINE DIAGNOSTIC SYS/SHAFT ENGINE TEST INSTRUMENT/(FEDS/SETI)		3-4Q	1-4Q	1-4Q	1-4Q			
SHOP EQUIPMENT CONTACT MAINT (SECM) MODERNIZATION - BLOCK II	2-4Q	1-4Q						
MAINT PLATFORM & TOWBAR MODERNIZATION	1-4Q	1-4Q						
HYBRID ELEC VEH AVN-PROTOTYPE, SYS INTEG, EARLY OPR TEST, MAINT, MODULAR AGPU III	1-4Q	1-4Q	1-4Q	1-4Q				
HYBRID VEHICLE UPGRADE FUTURE TACT TRUCK SYS/ ADV CONCEPT TECH DEMO (FTTS/ACTD)	1-4Q	1-4Q	1-4Q					
FUT TACT TRUCK SYS (FTTS) - INTEGRATION				1-4Q	1-4Q	1-4Q	1-4Q	
ADVANCED AGSE WORKING GROUP		3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
DEPLOYABLE SHOP EQUIPMENT CONTACT MAINT (SECM) SHELTER - I/II	3-4Q		3-4Q					
DEPLOYABLE AVIATION MAINTENANCE SHELTER - III (AIRCRAFT)			2-4Q	1-4Q	1Q			

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

PROJECT
B32

Schedule Detail (continued)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
UNIT MAINT AERIAL RECOVERY KIT (UMARK) II			3-4Q	1-4Q				
SHOP SETS COMPLEX - REDESIGN			2-4Q	1-4Q	1-4Q	1-4Q		
AVIATION VIBRATION ANALYZER II	3-4Q	1-4Q						
NEW AVN TOOL SETS (NATS) EVAL AND REDESIGN			2-4Q	1-4Q	1-2Q			
SECM III - (FTTS Aviation Variant)			3-4Q	1-4Q	1-4Q			
CURRENT FORCE AIRCRAFT UPGRADE SPT			3-4Q	1-4Q				
JOINT AIR TOW SYS DEMO (ARMY AND USAF)	4Q	1-3Q						
MANAGEMENT SUPPORT SERVICES	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
TECHNICAL ENGINEERING SERVICES	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
RDT&E PROJECT TEST SUPPORT		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

PROJECT
B45

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
B45 AIRCREW INTEGRATED SYS-AD	7101	6176	0	0	0	0	0	0	0	17374

A. Mission Description and Budget Item Justification: Project DB45 - Aviation Advanced Development: This project provides concept and technology programs for improved aviator safety, survivability, and human performance that amplify the warfighting effectiveness of the Army rotary wing aircraft including the AH-64 Apache/Longbow, CH-47 Chinook, UH/HH-60 Blackhawk, Light Utility Helicopter, and Armed Reconnaissance Helicopter. These projects include those systems and items of equipment that are unique and necessary for the sustainment, survivability, and performance of Army aircrews and troops on the future integrated battlefield. Advanced development programs focus on the development and evaluation of emerging technologies and the adaptation of commercial and nondevelopmental items (NDI) to military requirements. The Air Warrior provides a mission-tailorable system that standardizes and integrates Aviation Life Support Equipment (ALSE) for aviation personnel during flight and ground operations. The current effort includes design and development of a Modular Integrated Helmet Display System with new display capabilities, three-dimensional audio and external audio capability, nuclear flash protection and ballistic protection; design and development of a bodily waste management system for the chemical/biological environment; and improvements to personal environmental control systems and ballistic protection. These development activities will concentrate on requirements analysis through full system integration and demonstration of the capabilities.

Beginning in FY06 Aircrew Integrated Systems Advanced Development funds are under PE 0603827A, Project S51.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue advanced component development of Air Warrior preplanned technology improvements.	2695	2580	0	0
Continued Virtual Cockpit Optimization Project Advanced Component Development and Integration of technologies for simulation and demonstration.	4406	3596	0	0
Totals	7101	6176	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603801A - Aviation - Adv Dev

PROJECT

B45

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, A PE 0603827A PROJ S51 - Adv Dev	0	0	3374	3443	3525	3619	4044	4040	Continuing	Continuing
RDTE, A PE 0604801A PROJ DC45 - EMD	3256	3239	0	0	0	0	0	0	0	6495
RDTE, A PE 0604601A PROJ S61 - EMD	0	0	2248	2291	2523	2620	2706	2805	Continuing	Continuing
Aircraft Procurement, Army SSN AZ3110 - ACIS	32848	29694	29352	34821	42127	38873	56594	42268	Continuing	Continuing

C. Acquisition Strategy: Funds are under PE 0603827A - S51 after FY 2005. Technologies developed under the System Integrator contract will integrate the Air Warrior (AW) Block 1 and 2 features with additional Block 3 capabilities. Specifically these Block 3 capabilities will include a fully compliant Modular Integrated Helmet and Display System (MIHDS), Chemical, Biological, Radiological, and Nuclear (CBRN) waste disposal system and upgrades to AW block 1 and 2 components as emerging technologies become available. The MIHDS helmet will provide a day heads up display, nuclear flash protection, external audio, don in flight CBRN protection and Agile laser eye protection. The System Integrator contract is a 5 year delivery order cost plus fixed fee and was awarded in August 2004. The Virtual Cockpit Optimization project is Congressionally funded for development of technologies to increase pilots' situational awareness and provide cognitive decision aiding tools. Funds are available only in the year of execution. As funds are received, they will be placed on contract.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603802A - Weapons and Munitions - Adv Dev

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	29906	8321	0	0	0	0	0	0	0	66121
AS2 SMALL ARMS IMPROVEMENT	0	2281	0	0	0	0	0	0	0	3277
AS3 OBJECTIVE INDIVIDUAL COMBAT WEAPON (OICW) PD/RR	29906	6040	0	0	0	0	0	0	0	62844

A. Mission Description and Budget Item Justification: This program element addresses the modernization of Small Arms and the advanced component development of the Object Individual Combat Weapon (OICW). Beginning in FY 2006, funds for the Small Arms Improvement in this program element (Project AS2 - Small Arms Improvements) are realigned to PE 0603827 (Project S54 - Small Arms Improvements), while funds for the Objective Individual Combat Weapon in this program element (Project AS3 - Objective Individual Combat Weapon) are realigned to PE 0603827 (Project S55 - Objective Individual Combat Weapon). This realignment manages the Soldier as a system with the goal of increasing Soldiers' combat effectiveness and survivability and improving the Soldiers' quality of life.

Project AS2 (Small Arms Improvements) funds the modernization of existing Small Arms Weapons. It provides funds to develop system integration of subsystems and components and emerging technology designed to enhance lethality, target acquisition, fire control, training effectiveness and reliability for current and future small arms weapon systems and ammunition. Current small arm efforts include two FY05 New Starts: the Remote Weapons Technology program and Airburst Ammo program.

Project AS3 (Objective Individual Combat Weapon) is a program to develop a dual barrel weapon system allowing the Soldier to fire both kinetic energy and air bursting munitions from the same weapon system. The integrated weapon providing both capabilities is the XM-29 Integrated Air Burst Weapon. The XM-8 Modular Assault Weapon is the first increment of the OICW Program. The XM-8 represents state-of-the-art technology for 5.56mm assault weapons and has three variants: a baseline assault carbine; a designated marksman; and a special compact. To meet changing mission requirements, these variants are easily and quickly reconfigured by the individual Soldier with the use of interchangeable assembly groups such as barrel, handguard, buttstock modules, and sighting system. The XM-25 Air Burst Assault Weapon is the second increment of the OICW program. The XM-25 Air Burst Assault Weapon is the air burst portion of the XM29, Integrated Air Burst Weapon. The XM-25 dramatically increases Soldier survivability, standoff and versatility. The air burst weapon provides the Soldier with a 300-500% increase in hit probability to defeat point, area and defilade targets out to approximately 500 meters. The XM-25 weapon includes revolutionary high explosive air bursting munitions and an integrated, multifunctional, all environment, full-solution target acquisition / fire control system.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603802A - Weapons and Munitions - Adv Dev

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	2382	0	0
Current Budget (FY 2006/2007 PB)	8321	0	0
Total Adjustments	5939	0	0
Net of Program/Database Changes			
Congressional Program Reductions	-114		
Congressional Rescissions	-7		
Congressional Increases	6300		
Reprogrammings			
SBIR/STTR Transfer	-240		
Adjustments to Budget Years			

FY 2004 Adjustments: FY 2004 Reprogramming \$9.120M (to PE 0603802 Project AS3 for the XM8 Modular Assault Weapon).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603802A - Weapons and Munitions - Adv Dev

PROJECT
AS2

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
AS2 SMALL ARMS IMPROVEMENT	0	2281	0	0	0	0	0	0	0	3277

A. Mission Description and Budget Item Justification: Not applicable for this item.

Accomplishments/Planned Program Not applicable for this item.

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603802A - Weapons and Munitions - Adv Dev

PROJECT
AS3

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
AS3 OBJECTIVE INDIVIDUAL COMBAT WEAPON (OICW) PD/RR	29906	6040	0	0	0	0	0	0	0	62844

A. Mission Description and Budget Item Justification: Not applicable for this item.

Accomplishments/Planned Program Not applicable for this item.

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603804A - Logistics and Engineer Equipment - Adv Dev

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	12212	15993	13375	12878	12499	13064	18869	18892	0	129243
526 MARINE ORIEN LOG EQ AD	4469	284	2992	3052	3056	3056	3054	3052	0	29458
G11 ADV ELEC ENERGY CON AD	1409	1449	1846	1980	2158	2353	1130	1138	0	14944
G14 MATERIALS HANDLING EQUIPMENT - AD	185	0	199	202	204	208	203	203	0	993
K39 FIELD SUSTAINMENT SUPPORT AD	5701	10435	5026	3217	3467	3921	11092	11083	0	53942
K41 WATER AND PETROLEUM DISTRIBUTION - AD	448	3825	3312	4427	3614	3526	3390	3416	0	29906

A. Mission Description and Budget Item Justification: This program element supports advanced component development and prototypes of new and improved technologies for combat support and combat service support equipment essential to sustaining combat operations. Advancements in watercraft, bridging, electric power generators and batteries, potable water, material-handling, environmental control, shelter systems, cargo aerial delivery, field service systems, mortuary affairs equipment and petroleum equipment are necessary to improve safety and increase the tactical mobility, operational capability, lethality and survivability on the digital battlefield and to provide for greater sustainment while reducing the logistics support burden.

Note: HQ DA is pursuing reprogramming of \$6.2m from 643804.K39 to the correct APE/Projects (\$1.7m to 654804.L39 and \$4.5m to 654804.L46).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603804A - Logistics and Engineer Equipment - Adv Dev

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	10485	16822	17608
Current Budget (FY 2006/2007 PB)	15993	13375	12878
Total Adjustments	5508	-3447	-4730
Net of Program/Database Changes			
Congressional Program Reductions	-238		
Congressional Rescissions			
Congressional Increases	6200		
Reprogrammings			
SBIR/STTR Transfer	-454		
Adjustments to Budget Years		-3447	-4730

Explanation of changes: FY06/07 reductions support other higher Army requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603804A - Logistics and Engineer Equipment - Adv Dev

PROJECT
526

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
526 MARINE ORIEN LOG EQ AD	4469	284	2992	3052	3056	3056	3054	3052	0	29458

A. Mission Description and Budget Item Justification: This project supports advanced component development and prototype equipment for the Army's Logistics-Over-The-Shore (LOTS) missions. Among this equipment is the Joint High Speed Vessel (JHSV). The JHSV will operate at speeds up to four times greater than the current Logistics Support Vessels (LSVs) fleet. These capabilities will provide the Army with operational maneuver from standoff distances; by-passing of land-based chokepoints, and will reduce the logistics footprint in the Area of Responsibility. This ability to transport both troops and their equipment, and to provide an Enroute Mission Planning and Rehearsal System, does not exist today. Funds in the out years support other watercraft efforts.

The evolutionary acquisition features the current lease of two commercial fast ferries, the High Speed Vessel (HSV-X1) and the Theater Support Vessel (TSV-1X) for Advanced Concept Technology Demonstration (ACTD) purposes.

This project also supports the Harbormaster Command and Control Center (HCCC). The HCCC program will provide for safe and effective management of Army and Joint Port Operations during deployment of forces; both under LOTS conditions and operations in existing port facilities.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
HCCC Prototype design	0	0	500	0
FY05-FY07: Continue support for TSV advanced development to include programmatic documentation (i.e. TEMP, threat assessment, acquisition strategy, etc.)	4469	284	2492	3052
Totals	4469	284	2992	3052

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603804A - Logistics and Engineer Equipment - Adv Dev

PROJECT
526

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0604804A, 461, Marine Oriented Logistics, Engineering	59127	62641	0	0	0	0	0	0	Continuing	Continuing
OPA 3, M11203, Theatre Support Vessel(TSV)	0	996	15000	15361	299351	301615	154195	154356	Continuing	Continuing

C. Acquisition Strategy: TSV technical efforts will be conducted primarily with the Naval Surface Warfare Center (NSWC). NSWC can provide both in-house and contract resources (based on workload and expertise). The Acquisition Strategy calls for evolutionary/spiral development of commercial based technology with military adaptations. A new acquisition strategy is under-way. A TSV Memorandum of Agreement between the Army, Navy, and Marine Corps has been signed to form a Navy-led Joint Program Office (JPO) and integrate Army, Navy and Marine Corps requirements.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603804A - Logistics and Engineer Equipment - Adv Dev

PROJECT
526

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TSV Studies/Development	PWD	Naval Underwater Warfare Center, Newport, R.I.	3286	0		0		0		Continue	3286	0
b . TSV - composite prototype hull design	MIPR	Naval Underwater Warfare Center, Newport, R.I.	4211	0		0		0		0	4211	0
c . HCCC Prototype Design	PWD	TBD	0	0		500	1-2Q	0		0	500	0
Subtotal:			7497	0		500		0		Continue	7997	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TSV/Matrix Support	MIPR	TACOM CBU, Warren, MI	4266	0		186	1-2Q	186	1-2Q	Continue	4638	0
b . TSV Matrix Support	MIPR	TACOM, LCCE	0	0		0		0		0	0	0
c . TSV Matrix Support	MIPR	TACOM, Legal, Warren, MI	0	0		33	1-2Q	33	1-2Q	0	66	0
d . TSV - composite prototype hull design	MIPR	CASCOM, Ft. Lee, VA	5240	0		0		0		Continue	5240	0
e . TSV/Matrix Support	MIPR	TARDEC, Warren, MI/ICI	170	0		0		0		0	170	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603804A - Logistics and Engineer Equipment - Adv Dev

PROJECT
526

II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
f . TSV/In-house	MIPR	PM Force Projection, Warren, MI	2190	0		0		0		Continue	2190	0
g . TSV/Matirx	MIPR	TACOM Acquisition Center, Warren, MI	0	0		186	1-2Q	186	1-2Q	0	372	0
h . TSV - composite prototype hull design	MIPR	USAEC, Ft. Eustis, VA	100	0		0		0		0	100	0
Subtotal:			11966	0		405		405		Continue	12776	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TSV	MIPR	DTC/A TEC, MD	1071	0		95	1-2Q	95	1-2Q	Continue	1261	0
b . Harbormaster Command and Control Center (HCCC	MIPR	USATCFE, Ft. Eustis, VA	100	0		0		0		0	100	0
c . TSV	MIPR	PM WIN-T	1500	0		0		0		0	1500	0
Subtotal:			2671	0		95		95		Continue	2861	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603804A - Logistics and Engineer Equipment - Adv Dev

PROJECT

526

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TSV/In-house	MIPR	PM Force Projection, TACOM, Warren, MI	510	284		1992	1Q	2552	1-2Q	0	5338	0
Subtotal:			510	284		1992		2552		0	5338	0
Project Total Cost:			22644	284		2992		3052		Continue	28972	0

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603804A - Logistics and Engineer Equipment - Adv Dev

PROJECT
526

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
HSV-X1- Lease-Joint Venture	Last Option: 1st-4th qtr FY06																															
TSV-1X - Lease Spearhead - Army	Awarded Sep 02																															

Schedule Detail (R4a Exhibit)

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BUDGET ACTIVITY
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
High Speed Vessel Lease (HSV X1, Joint Venture)	1-4Q	1-4Q	1-4Q					
Theatre Support Vessel Lease (Spearhead Vessel)	1-4Q	1-4Q	1Q					

TSV: Congressional guidance in the FY05 Appropriations Act has recommended a need for a revised acquisition strategy, now on going.

HSV X1: Current lease is funded through FY04 and expires first quarter FY05.

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PROJECT
G11

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
G11 ADV ELEC ENERGY CON AD	1409	1449	1846	1980	2158	2353	1130	1138	0	14944

A. Mission Description and Budget Item Justification: The Mobile Electric Power (MEP) program was established by the Department of Defense to develop a Modernized, Standard Family of Mobile Electric Power Sources for all Services throughout the Department of Defense. This project provides concept and technology development that will improve the performance, mobility, readiness and survivability of the next generation power sources in support of the Army. It support initiatives that are essential to the development and fielding to modernized Mobile Electric Power (MEP) sources from 0.5 KW to 920 KW that comply with environmental statutes and provide lower noise, improved fuel and electrical efficiency, significantly reduced weight, enhanced portability, improved reliability, and maintainability.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Investigated availability of commercial technology and components to be used for development of a new intelligent Power Management Distribution System (PMDS) and continue hardware test and evaluation.	100	0	0	0
Test and assess commercially available components for Small Tactical Electric Power (STEP)/market survey	1309	0	0	0
Develop STEP proof of principle prototypes/test technologies	0	1449	0	0
Continue STEP proof of principle prototype development	0	0	1846	0
Test STEP proof of principle prototype and transition to System Development and Demonstration	0	0	0	1880
Initiate Large Advanced Mobile Power Sources (LAMPS) Program/components	0	0	0	100
Totals	1409	1449	1846	1980

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDT&E:PE0604804A, 194 Engine Driven Generators	7017	5241	6735	10100	3809	4387	1683	1689	Continuing	Continuing
OPA 3, Generators and Associated Eq.	71645	57175	43067	33516	34284	28550	24716	25946	Continuing	Continuing

MA9800

C. Acquisition Strategy: Complete advanced development and transition to system development and demonstration phase (Milestone B) and subsequent transition to production (Milestone C).

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . STEP Components	MIPR	CECOM - Belvoir	971	0		0		0		0	971	0
b . STEP Prototypes	MIPR	CECOM - Belvoir	0	880	1Q	1275	2Q	790	2Q	0	2945	0
c . LAMPS Components	MIPR	CECOM - Belvoir	0	0		0		100	2Q	Continue	Continue	0
Subtotal:			971	880		1275		890		Continue	Continue	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . STEP Components	MIPR	CECOM-Belvoir	670	0		0		0		0	670	0
b . PMDS Components	MIPR	CECOM-Belvoir	80	0		0		0		0	80	0
c . STEP Prototypes	MIPR	CECOM-Belvoir	0	400	1Q	271	1Q	200	1Q	0	871	0
Subtotal:			750	400		271		200		0	1621	0

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BUDGET ACTIVITY
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . STEP Components	MIPR	CECOM-Belvoir	748	42	1Q	0		0		0	790	0
b . PMDS Components	MIPR	CECOM-Belvoir	60	0		0		0		0	60	0
c . STEP Prototypes	MIPR	CECOM-Belvoir	0	0		150	2Q	740	2Q	0	890	0
Subtotal:			808	42		150		740		0	1740	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . STEP Components	In-house	PEO In-house	301	0		0		0		0	301	0
b . STEP Prototypes	In-House	PEO In-house	0	127	1Q	150	1Q	150	1Q	0	427	0
Subtotal:			301	127		150		150		0	728	0

Project Total Cost:			2830	1449		1846		1980		Continue	Continue	0
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Schedule Profile (R4 Exhibit)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
STEP Program																																				
(1) Test and Assess Commercially Available Components, (2) Develop Proof of Principle Prototype (Comm. Components), (3) Complete Proof of Principle Prototype																																	▲1	▲2	▲3	
(4) Initiate Test and Evaluation, (5) Complete Test and Evaluation																																	▲4	▲5		
(6) Transfer to System Development & Demonstration	▲6																																			
PMDS Program																																				
(7) Initiate Testing of Components																																	▲7			
LAMPS Program																																				
(8) Initiate LAMPS Program																																	▲8			
(9) Complete Engineering Assessment and Component Market Survey, (10) Test and Assess Commercial Components, (11) Continue Prototype Development, (12) Test & Assess Prototypes																																	▲9	▲10	▲11	▲12

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Initiate testing of the PMDS components	1Q							
Test and assess commercially available STEP components	1Q							
Develop STEP proof of principle prototype using best available commercial components		1Q						
Complete STEP proof of principle prototypes			2Q					
Initiate test and evaluation of STEP proof of principle prototypes			3Q					
Complete test and evaluation of STEP proof of principle prototypes/performance spec				2Q				
Transfer STEP program to System Development and Demonstration				2Q				
Initiate Large Advanced Mobile Power Sources (LAMPS) Program				2Q				
Complete engineering assessment and component market surveys for LAMPS					2Q			
Test and assess commercially available components for LAMPS						1Q		
Continue LAMPS prototypes							1Q	
Test and assess LAMPS prototypes								1Q

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603804A - Logistics and Engineer Equipment - Adv Dev

PROJECT
K39

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
K39 FIELD SUSTAINMENT SUPPORT AD	5701	10435	5026	3217	3467	3921	11092	11083	0	53942

A. Mission Description and Budget Item Justification: This project supports development of critical soldier support and sustainment systems including shelter systems (rigid and soft wall), cargo aerial delivery, field service systems, mortuary affairs equipment, heaters, environmental control units and other combat service support equipment. These systems will fill identified theater distribution and services capability gaps, improve unit sustainability, and increase combat effectiveness. This project also supports Advanced Component Development and Prototyping of Critical Distribution Capabilities to include cargo aerial delivery systems that provide improved safety and accuracy while increasing survivability of aircraft, personnel, and equipment. The project supports the development of tactical environmental control systems that support mobile, joint service platforms for vehicle-mounted command and control systems, medical care capabilities and high tech maintenance shelters and vans. This project develops critical enablers that support the Quartermaster (QM) Force Transformation Strategy and The Army's Modular Capabilities by maintaining readiness through fielding and integrating new equipment. This project also ensures Army Expeditionary Forces are capable of rapid deployment through aerial delivery initiatives and by reducing sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands in lift, combat zone footprint, and costs for logistical support .

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY 04: Completed Operational Testing (OT) of Low Cost Container for Low Cost Aerial Delivery System (LCADS). Completed Design Validation (DV) of High Velocity parachute. Conducted Developmental Testing (DT) of High Velocity parachute. FY 05: Conduct DV of Low Velocity parachute. Obtain Milestone C for Low Cost Container. Complete OT for High Velocity parachute. Obtain Milestone C for High Velocity parachute. Start and complete Developmental Testing (DT) for Low Velocity parachute. Initiate OT for Low Velocity parachute. FY 06: Complete OT for Low Velocity parachute. Obtain Milestone C for Low Velocity parachute.	1890	911	350	0
FY 04: Procured, designed and fabricated 60k British Thermal Unit (BTU) Space Heater Convective (SHC) test prototypes to support development and reliability testing. Transitioned 60k SHC into System Development and Demonstration (SDD).	854	0	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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4 - Advanced Component Development and Prototypes

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PROJECT
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Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007
FY 04: Conducted market survey, prepared SDD contract solicitation and developed Milestone B documentation for the 60k British Thermal Unit (BTU) Improved Environmental Control Unit (IECU). Completed development of integrated environmental control solution to fill critical capability gap within Stryker Brigade Combat Team (SBCT) Tactical Operations Centers. FY 05: Obtain 60k BTU IECU Milestone B decision, award System Design and Development (SDD) contract, fabricate test prototypes. FY 06: Conduct Production Qualification Testing (PQT) for the 60k IECU. FY 07: Obtain Milestone C production decision for 60k IECU. Obtain Milestone B decision, award SDD contract and fabricate test systems for 9, 18, 36k BTU IECUs.	1570	474	339	1217
FY 04: Conducted technical feasibility testing of two candidate Joint Precision Aerial Delivery System 2k (JPADS-2k) technologies. Supported Multi National Forces - Iraq (MNF-I) Urgent Operational Need Statement (UONS) to provide JPADS 2k. FY 05: Conclude technical feasibility testing of JPADS 2k. PM will leverage real operational data obtained from deployment of JPADS 2k in Operation Iraqi Freedom (OIF). Obtain Milestone B for JPADS 2k. Prepare Request for Procurement (RFP) and execute Source Selection process for JPADS 2k. Support JPADS 10k Advanced Concept Technology Demonstration (ACTD) program. FY 06: Obtain Milestone B for JPADS 10k. Conduct technical feasibility testing of candidate JPADS 10k technologies. Procure test prototypes and start and complete DV of JPADS 2k. Transition 2k to System Development and Demonstration. FY 07: Prepare RFP and execute Source Selection process for JPADS 10k. Start and complete DV of JPADS 10k.	1387	1550	4337	2000
FY 05: Award contract for design and development of Mobile Integrated Remains Collection System (MIRCS).	0	1300	0	0
FY 05: Funds currently on withhold. DA plan is to reprogram to L39 (Field Sustainment Support ED).	0	1700	0	0
FY 05: Funds currently on withhold. DA plan is to reprogram to L46 (Maintenance Support Equipment)	0	4500	0	0
Totals	5701	10435	5026	3217

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA3, MF9000 Control Unit, Environmental	20717	17486	3420	5766	6090	4867	4174	4178	Continuing	Continuing

C. Acquisition Strategy: Accelerate Joint Precision Aerial Delivery System (JPADS) product development and testing to transition to System Development & Demonstration and/or Production.

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BUDGET ACTIVITY
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Soldier Support Equipment	In-House	PM Force Sustainment Sys (FSS), Natick	1020	535	1-4Q	776	1-4Q	495	1-4Q	Continue	2826	0
b . Soldier Support Equipment	In-house	CECOM, Ft Belvoir	420	259	1-4Q	278	1-4Q	175	1-4Q	Continue	1132	0
c . Soldier Support Equipment	Contracts	Various	3260	1299	1-2Q	1666	1-4Q	1097	1-4Q	Continue	7322	0
Subtotal:			4700	2093		2720		1767		Continue	11280	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Soldier Support Equipment	MIPR	DTC, MD and ATC, MD	200	172	1-4Q	185	1-4Q	116	1-4Q	Continue	673	0
b . Soldier Support Equipment	MIPR	Yuma Proving Ground, AZ	1500	1830	1-4Q	1966	1-4Q	1234	1-4Q	Continue	6530	0
Subtotal:			1700	2002		2151		1350		Continue	7203	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management Support	In-House	PM Force Sustainment Sys (FSS), Natick	180	140	1-4Q	155	1-4Q	100	1-4Q	Continue	575	0
b . Reprogram Actions			0	6200		0		0		0	6200	0
Subtotal:			180	6340		155		100		Continue	6775	0

Project Total Cost:			6580	10435		5026		3217		Continue	25258	0
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Schedule Profile (R4 Exhibit)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603804A - Logistics and Engineer Equipment - Adv Dev

PROJECT
K39

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
(1) MS B for IECU 60K, (2) MS B for JPADS 2K, (3) MS B for JPADS 10K, (4) MS B for IECU 9, 18, 36K, (5) MS B for JPADS 30 K					▲1				▲2				▲3				▲4				▲5															
(6) MS C on LCADS Low Cost Container, (7) MS C on LCADS HV parachute, (8) MS C on LCADS LV parachute, (9) MS C for IECU 60K, (10) MS C for IECU 9, 18, 36K					▲6				▲7				▲8				▲9								▲10											
Conduct DV on LCADS LV parachute																																				
OT for LCADS Container																																				
DT/OT on LCADS HV Parachute																																				
DT/OT on LCADS LV parachute																																				
(11) Conduct Initial Evaluation of Operational Suitability for IECU 60K																																				
Conduct PQT for IECU 60K																																				
DT/OT on IECU 9, 18, 36K																																				
DT on JPADS 30K																																				
OT on JPADS 30K																																				

Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Conducted Operational Testing on LCADS low cost container.	1-3Q							
Conduct Milestone C decision on LCADS low cost container.		1Q						
Conducted DT on LCADS High Velocity (HV) parachute.	2-4Q							
Conduct OT on LCADS HV parachute.		1-2Q						
Conducted Design Validation (DV) on LCADS Low Velocity (LV) parachute.		1-2Q						
Receive Milestone C decision on LCADS HV parachute.		3Q						
Conduct DT on LCADS LV parachute.		3-4Q						
Conduct OT on LCADS LV parachute.		4Q	1Q					
Receive Milestone C decision on LCADS LV parachute.			2Q					
Obtain Milestone B decision for Joint Precision Aerial Delivery System 2k (JPADS) .		4Q						
Obtain Milestone B decision for JPADS 10k.			1Q					
Conduct DV on JPADS 10k.				3-4Q				
Obtain Milestone B for JPADS for 30k.					3Q			
Conduct DT on JPADS 30k.							1-2Q	
Conduct OT on JPADS 30k.								1-2Q
Conduct Initial Evaluation of Operational Suitability for IECU 60k.	2Q							
Obtain Milestone B for IECU 60k.		2Q						
Conduct Production Qualification Testing for IECU 60k.			3-4Q					
Obtain Milestone C for IECU 60k.				2Q				
Obtain Milestone B for IECU 9, 18, 36k.				2Q				
Conduct DT/OT on IECU 9, 18, 36k.					1-3Q			
Obtain Milestone C for IECU 9, 18, 36k.						3Q		

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PROJECT
K41

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
K41 WATER AND PETROLEUM DISTRIBUTION - AD	448	3825	3312	4427	3614	3526	3390	3416	0	29906

A. Mission Description and Budget Item Justification: This project develops and demonstrates the potential of prototype equipment and technologies to satisfy petroleum storage, distribution, and quality surveillance system requirements. The Concept and Technology Development program supports the development and enhancement of rapidly deployable Petroleum and Water equipment. The mission includes developing onboard fuels and lubrication quality analysis systems; achieving greater capabilities in the removal of Nuclear, Biological, Chemical (NBC) and other contaminants from water sources; reducing the logistics foot print; developing water reutilization systems to reduce the requirement for transport of water into the theatre (this includes the water from exhaust); and material and systems to decrease the logistics foot print and employment time for the transfer of liquid logistics in the theatre. The Army fights with clean fuel and drinking water. This vital equipment enables the Army to achieve its transformation vision by providing the Army with the means to be highly mobile and self-sustaining in very hostile theaters of operations.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY04-FY07: Completed Pre-Planned Product Improvements (P3I) to evaluate water purification components as improvements to the Lightweight Water Purifier (LWP), Tactical Water Purification System (TWPS).	177	293	1051	816
FY05-FY07: Initiate Develop improved water quality analysis equipment for LWP and TWPS.	0	964	261	250
FY04-FY07: Continued development of Advanced Petroleum Test Kit (PTK) and initiate performance testing.	194	1368	800	237
FY05: Conduct Production Qualification Testing (PQT) for the Camel	0	1200	0	0
FY06-FY07: Design, Development, Prototypes, and Testing of Versatile Tank And Pump Unit (VTPU)	0	0	400	2024
FY06-07 Initiate Water Packaging System Contract Award for prototype fabrication	0	0	800	1100
FY04: Rapidly Installed Fluid Transfer System (RIFTS), Continue development	77	0	0	0
Totals	448	3825	3312	4427

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0604804.L41, Logistics and Engineer Equipment - Engineering Development	1613	8021	2187	7078	3578	3646	3607	3635	Continuing	Continuing
OPA 3, R05600, Water Purification Systems	0	12532	8888	7570	7584	7592	7599	2601	Continuing	Continuing
OPA 3, R02106, Mission Modules - Water Distribution System Module	3688	262	600	7819	3116	38254	40498	35033	Continuing	Continuing
OPA 3, MA6000, Distribution Systems, Petroleum & Water	36542	37944	66055	66320	93964	136339	137832	132762	Continuing	Continuing
OPA 3, MA4501, Modification Kits	40494	7410	9280	25241	19212	13091	26237	23442	Continuing	Continuing

C. Acquisition Strategy: Develop engineering prototypes or select Non-Developmental Item based on market surveys and proposals from industry.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Water Purification Components (P3I)	MIPR	NFESC, Port Hueneme, CA	0	0		350	1Q	333	1Q	Continue	683	Continue
b . Water Purification Components (P3I)	Purchase Orders	TBD	182	0		250	1Q	233	1-4Q	Continue	665	Continue
c . Water Purification Components (P3I)	In-House	TARDEC, Warren, MI	408	0		100	1Q	50	1Q	Continue	558	0
d . Water Purification Components (P3I)	Task Order Contract	ICI, Dayton, OH	0	0		100	2Q	50	2Q	Continue	150	0
e . Advanced Petroleum Test Kit	In-House	TARDEC, Warren, MI	458	379	1Q	100	1Q	100	1Q	Continue	1037	Continue
f . Advanced Petroleum Test Kit	CPFF	TBD	0	100	2Q	260	1Q	0		Continue	360	Continue
g . Water Analysis for TWPS/LWP	In-House	TARDEC, Warren, MI	0	250	1Q	100	1Q	100	1Q	Continue	450	0
h . Water Analysis for TWPS/LWP	Purchase Order	TBD	0	350	2Q	100	2Q	100	2-4Q	Continue	550	0
i . Water from Engine Exhaust	CPFF	Lexcarb, Lexington KY	250	0		0		0		0	250	0

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BUDGET ACTIVITY
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K41

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . FSSP (P3I)			151	0		0		0		0	151	0
k . Versatile Tank and Pump Unit (VPTU)	Contract - Task Order	ICI, Dayton, Ohio	0	0		250	1Q	0		Continue	250	0
l . Versatile Tank and Pump Unit (VPTU)	In House	TARDEC, Warren, MI	0	0		50	1Q	100	1Q	Continue	150	0
m . Versatile Tank and Pump Unit (VPTU)	TBD		0	0		0		1424	1Q	Continue	1424	0
n . Packaged Water System	Contact - CPFF	TBS	0	0		600	3Q	900	3Q	Continue	1500	0
o . Rapidly Installed Fluid Transfer System (RIFTS)			77	0		0		0		0	77	0
Subtotal:			1526	1079		2260		3390		Continue	8255	Continue

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603804A - Logistics and Engineer Equipment - Adv Dev

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K41

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Water Purification Components (P3I)	In-House	TARDEC, Warren, MI	100	200	1Q	100	1Q	0		Continue	400	Continue
b . Advanced petroleum test kit	In-House	TACOM, Warren, MI	65	25	1Q	50	1Q	25	1Q	Continue	165	Continue
c . Water Analysis for TWPS/LWP	In-House	TARDEC, Warren, MI	0	200	1Q	0		0		0	200	0
d . Versatile Tank and Pump Unit (VPTU)	In-House	TARDEC, Warren, MI	0	0		25	1Q	50	1Q	Continue	75	0
e . Packaged Water System	In-House	TARDEC, Warren, MI	0	0		200	1Q	200	1Q	Continue	400	0
Subtotal:			165	425		375		275		Continue	1240	Continue

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603804A - Logistics and Engineer Equipment - Adv Dev

PROJECT
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Water Purification Components (P3I)	In House	TARDEC, Warren, MI	379	93	1Q	151	1Q	150	1-3Q	Continue	773	Continue
b . Advanced Petroleum Test Kit	MIPR	ATEC, Aberdeen Proving Ground	0	0		350	1Q	52	1Q	0	402	0
c . Advanced Petroleum Test Kit	In-house	TARDEC, Warren, MI	65	839	1Q	15	1Q	10	1Q	Continue	929	Continue
d . Water Analysis for TWPS/LWP	In House	TARDEC, Warren, MI	0	85	1Q	0		0		0	85	0
e . Water Analysis for TWPS/LWP	MIPR	CHPPM	0	79	1Q	61	1Q	50	1Q	Continue	190	0
f . Versatile Tank and Pump Unit (VPTU)	MIPR	ATEC, Aberdeen Proving Ground, MD	0	0		0		400	3Q	Continue	400	0
g . Camel	MIPR	ATC, Aberdeen Proving, Ground, MD	0	1200	1-2Q	0		0		0	1200	0
Subtotal:			444	2296		577		662		Continue	3979	Continue

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603804A - Logistics and Engineer Equipment - Adv Dev

PROJECT
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Advanced Petroleum Test Kit	In-House	TACOM, Warren, MI	70	25	1Q	25	1Q	50	1Q	Continue	170	0
b . Versatile Tank and Pump Unit (VPTU)	Contract - Task Order	ICI, Dayton, OH	0	0		75	3Q	0		Continue	75	0
c . Versatile Tank and Pump Unit (VPTU)	In-House	TACOM, Warren, MI	0	0		0		50	1Q	Continue	50	0
Subtotal:			70	25		100		100		Continue	295	0
Project Total Cost:			2205	3825		3312		4427		Continue	13769	Continue

Schedule Profile (R4 Exhibit)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603804A - Logistics and Engineer Equipment - Adv Dev

PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
P3I - for Hardware for the LWP/TWPS	Evaluate commercially available water purification to LWP/TWPS																															
Develop Improved Water Quality Analysis Equip for Water Systems	Water Quality Analysis Equipment																															
Develop Petroleum Test Kit (PTK) Technical Requirements, Design, and Test	Petroleum Test Kits																															
PQT&E - Camel	Camel PQT																															
Design and Develop Versatile Tank and Pump Unit (VPTU)	Design and Develop VPTU																															
Develop Water Packaging System	Develop Water Packaging System																															

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603804A - Logistics and Engineer Equipment - Adv Dev

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
(P3I) Evaluate commercially available water purification components as improvements to LWP & TWPS.	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	2-3Q
Develop improved Water Quality Analysis Equipment for LWP and TWPS		1-4Q	1-4Q	1-4Q				
Develop technical requirements, design, and test of Advanced Petroleum Test Kits.	1-4Q	1-4Q	1-4Q	1-4Q				
Camel Testing	4Q	1-4Q						
Design and Development of Versatile Tank and Pump Unit (VPTU)			1-4Q	1-4Q	1-4Q			
Develop Water Packaging System		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes				PE NUMBER AND TITLE 0603805A - Combat Service Support Control System Evaluation a					PROJECT 091	
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
091 CBT SVC SPT CONTRL SYS	8151	6138	10659	8481	8574	8446	2956	2431	Continuing	0

A. Mission Description and Budget Item Justification: The Battle Command Sustainment Support System (BCS3) is the logistical command and control (C2) system that reflects the Armys emphasis on Future Force warfighting capabilities giving commanders, for the first time, actionable logistics information in the form of an automated view of the battlefield coupled with the logistics positioning of supplies. BCS3 has immediate, high pay-off benefit to warfighters and additional future growth in its capabilities. BCS3 represents a major step forward in acquisition innovation coupling spiral development and the end-user in its design. It is the Armys maneuver sustainment C2 system the fusion center -- at all echelons brigade and above, fusing, for the first time, sustainment, in-transit, and force data to aid field commanders in making critical decisions. BCS3 is part of the bridge to Future Combat System and applies lessons learned from previous programs. BCS3 provides assured soldier support and is modular, tailorable, and scaleable to meet the full spectrum of operations (to include garrison, training, contingency and combat) and interoperates with Army Battle Command Systems (ABCS). BCS3 is a force multiplier - a precision tool for logistics planning and execution that provides the soldiers and commanders with the necessary tools to succeed.

BCS3 development is based upon a best of breed concept that leverages recent demonstrated successes of the Logistics Common Operational Picture (LCOP) process in Operation Iraqi Freedom (OIF) as well as the core capabilities of its predecessor integrated into a single lightweight platform. BCS3 provides the latest available map based graphical representation of the current situation within the Area of Operation (AO) to include all friendly and enemy, locations, and unit status, and displays this operating picture with enhanced briefings and data management capabilities. BCS3 supports Joint requirements by providing the Armys portion of the Joint Logistics Common Relevant Operational Picture (LOG CROP).

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Add Version 4.6.3 (Initial Combat Power)	0	0	0	0
Add Version 4.6.3.1 (ABCS 6.3D) Development	5661	0	0	0
Support to Stryker Brigade Combat Team ((SBCT)/Warfighting Experiments/Counter Attack Corps)	1658	0	0	0
Support to Training Development (Performance Support System/Distributed Training (SS/DTV))	832	0	0	0
Continued Development of Joint, Logistics Info Systems (LIS) Interfaces and maintain interoperability requirements as well as COE upgrades and Security	0	2359	4392	3615
LCOP Integration	0	858	1678	1078
LCOP/JDLM Simulation	0	521	1123	836

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes	PE NUMBER AND TITLE 0603805A - Combat Service Support Control System Evaluation a	PROJECT 091
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Accomplishments/Planned Program B(continued)	FY 2004	FY 2005	FY 2006	FY 2007
CAPEX Integration	0	515	775	600
Operational Testing	0	0	323	126
Training Development	0	128	568	381
PM Office	0	1757	1800	1845
Totals	8151	6138	10659	8481

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	6366	8456	5765
Current Budget (FY 2006/2007 PB)	6138	10659	8481
Total Adjustments	-228	2203	2716
Net of Program/Database Changes			
Congressional Program Deductions			
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-135		
Adjustments to Budget Years	-93	2203	2716

FY 06/07 Adjustments to budget year based on "Good Enough" requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603805A - Combat Service Support Control System Evaluation a

PROJECT
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C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Procurement, OPA 2 (W34600)	21249	11671	10139	9958	12824	12866	5227	5233	Continue	Continue

D. Acquisition Strategy: The BCS3 acquisition strategy uses a spiral development process that is structured for capabilities to mature and evolve over successive software versions. Versions 1 and 2 served as proof of principle. They provided initial division-level CSS functional capability on common hardware. Version 3 was built on the capabilities of the two previous versions and provided an Initial Operational Capability at Division and Corps level to include initial horizontal interoperability with other Battlefield Functional Area (BFA) systems. Version 4 development included expansion to echelons above Corps (EAC) but has recently undergone additional modification to include BCS3 functionality. BCS3 leverages key identified CSS functionality from the original capability and integrates it with ABCS systems and with numerous national level databases to provide multi-echelon CSS planning and enhanced combat power analysis capabilities. The objective software will provide functionality from tactical (down to maneuver brigade) to strategic level and extend capabilities to Joint, allied and coalition forces. Northrop Grumman is the lead software development contractor, with Tapestry Software Solutions as a Sub contractor. Lockheed Martin Corporation (LMC) provides training development. iGov provides commercial off the shelf (COTS) hardware.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603805A - Combat Service Support Control System
Evaluation a

PROJECT
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Software Development	SS/TM	Northrop Grumman, Carson, CA	124416	4253	1-2Q	7968		6129		Continue	142766	Continue
b . Training Development	C/TM	Lockheed Martin, Tinton Falls, NJ	11928	128	1-2Q	568	1-2Q	381	1-2Q	Continue	13005	Continue
c . ABCS SE&I Effort	MIPR	PEO C3T, Ft Monmouth, NJ	7686	0		0		0		0	7686	7485
d . GFE	MIPR	Various	3601	0		0		0		0	3601	3601
Subtotal:			147631	4381		8536		6510		Continue	167058	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CECOM, Matrix	MIPR	FT. Monmouth , NJ & Ft. Belvoir, VA	5154	0		0		0		0	5154	5154
b . Technical Support	MIPR	EER, Fort Lee, VA	8321	0		0		0		0	8321	8321
c . Acquisition Support	MIPR	LMI, McLean, VA	1075	0		0		0		0	1075	1075

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603805A - Combat Service Support Control System Evaluation a

PROJECT
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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			14550	0		0		0		0	14550	14550

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . GOVT	MIPR	VARIOUS	5575	0		0		0		0	5575	5575
b . Dev. Testing & Eval.	MIPR	EPG, VARIOUS	1028	0		0		0		0	1028	1028
c . Oper. Testing	MIPR	ATEC, VARIOUS	1868	0		323	1-4Q	126	1-4Q	0	2317	2468
Subtotal:			8471	0		323		126		0	8920	9071

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603805A - Combat Service Support Control System Evaluation a

PROJECT
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Office Management	In House	FT. BELVOIR, VA	21044	1757	1-4Q	1800	1-4Q	1845	1-4Q	Continue	Continue	Continue
Subtotal:			21044	1757		1800		1845		Continue	Continue	Continue
Project Total Cost:			191696	6138		10659		8481		Continue	Continue	Continue

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603805A - Combat Service Support Control System Evaluation a

PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
BCS3 (ABCS 6.4)	BCS3																															
Design & Development																																
System Testing																																
Final SW Drop																																
Design & Development																																
System Testing																																
Integration (CTSF) Testing																																
Joint & Interop Develop	Joint Interoperability																															
Training Development	Training Development																															
Fielding	FIELDING																															
Fielding Group 1 - FY04																																
Fielding Group 2 - FY05																																
Fielding Group 3 - FY06																																
Fielding Group 4 - FY07																																
Fielding Group 5 - FY08																																
Fielding Group 6 - FY09																																
Fielding Group 7 - FY10																																
Fielding Group 8 - FY11																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603805A - Combat Service Support Control System Evaluation a

PROJECT
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Support to Stryker Brigade Combat Team (SBCT)	1-4Q	1-4Q	1-4Q					
Support to Training Dev PSS/DTV								
BCS3 Development	1-4Q							
LCOP Integration	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
CAPES Integration		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
LCOP/JDLM Simulation	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
Continued Development of Joint, Logistic Info System (LIS) Interfaces and Maintain Interoperability	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Training Development	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
Operational Testing	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
Program Management	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

COST (In Thousands)		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to	Total Cost
		Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
Total Program Element (PE) Cost		12715	20286	10134	11842	13277	22639	22306	11421	Continuing	Continuing
808	DOD DRUG & VACC AD	5207	5253	5343	5405	6365	6063	5991	5913	0	50424
811	MIL HIV VAC&DRUG DEV	128	0	146	150	153	154	149	148	Continuing	Continuing
836	COMBAT MEDICAL MATL AD	3969	7325	3694	3753	4825	14556	14386	3582	0	59910
837	SOLDIER SYS PROT-AD	1063	712	951	2534	1934	1866	1780	1778	0	13467
MD4	FUTURE MEDICAL SHELTER	0	5080	0	0	0	0	0	0	0	1338
MD7	AUTOMATED LABORATORIES FOR BIODEFENSE (CA)	2348	0	0	0	0	0	0	0	0	2473
MD8	ELECTROSOMOTIC PAIN THERAPY SYSTEM (CA)	0	958	0	0	0	0	0	0	0	958
MD9	PORTABLE OXYGEN GENERATOR (CA)	0	958	0	0	0	0	0	0	0	958

A. Mission Description and Budget Item Justification: This program element (PE) funds advanced development of medical materiel within the early-on system integration in the System Development and Demonstration portion of the acquisition life cycle. The PE supports transition of Science and Technology initiatives, prototypes, or candidate technologies into the first scale-up, integrated models for initial technical and operational test and evaluation, when applicable. These programs are aligned to meet Future Force (F2) requirements stressed within the concept documents and organizational structures. The PE provides funding for early Phase 1 and 2, U.S. Food and Drug Administration (FDA) regulated, human clinical trials. The major enablers supported by this PE are:

Infectious disease vaccines and preventive drugs that will reduce the risk of service members contracting debilitating or fatal diseases, especially with the growing potential which urban warfare delivers. Disease and non-battle injuries (DNBI) are the largest contributors to the level 3 medical footprint, and significant reductions of the medical footprint in theater is achieved by reducing the number of DNBI affected soldiers. More importantly, reduced patient evacuations within F2 units is a force multiplier, because timely replacement of these uniquely skilled and combat tested soldiers will be nearly impossible.

Combat Casualty Care devices and biologics, with two major focuses: enhance forward care at the first responder level and reduce the footprint of medical organizations for greater mobility and easier sustainment. The F2 concept places soldiers into a more austere environment with lengthened evacuation times (both arrival and transit). Supporting medics and first responders require greater lifesaving and extended stabilization capability to save lives. Reduction in weight, cube, and sustainment requirements, allows medical units to increase mobility and maintain contact with their

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603807A - Medical Systems - Adv Dev

supported Units of Action.

Soldier Performance Enhancers in the form of drugs or diagnostics that allow commanders to increase soldiers' cognitive awareness and stamina. Enhancers have a direct relationship to increased soldier capabilities and a potential to reduce casualties.

Military HIV Vaccine and Drug Development – funds militarily relevant HIV medical countermeasures. These include advanced component development of sufficient candidate vaccines and drugs to permit large-scale field testing and education/training materials.

This program is managed by the U.S. Army Medical Research and Materiel Command.

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	10258	10458	11929
Current Budget (FY 2006/2007 PB)	20286	10134	11842
Total Adjustments	10028	-324	-87
Net of Program/Database Changes			
Congressional Program Reductions	-299		
Congressional Rescissions			
Congressional Increases	10800		
Reprogrammings			
SBIR/STTR Transfer	-473		
Adjustments to Budget Years		-324	-87

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
808

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
808 DOD DRUG & VACC AD	5207	5253	5343	5405	6365	6063	5991	5913	0	50424

A. Mission Description and Budget Item Justification: This project funds technical development of candidate medical countermeasures for infectious diseases that occur within militarily relevant areas of the world. Current products fall within three major areas: vaccines, drugs, and diagnostic kits. The funds support Phase 1 and 2 human clinical trials for safety, determining the genetics of the immune system, and small-scale efficacy testing. This work, which is performed in military laboratories or civilian pharmaceutical firms, is directed toward the prevention of disease, early diagnosis if contracted, and speeding recovery once diagnosed. These trials are required to meet U.S. Food and Drug Administration (FDA) regulatory approval guidance, a mandatory obligation for all military products placed into the hands of medical providers or service members. Priority is based upon four major factors: (1) the extent of the disease within the Combatant Commands' theater of operations, (2) the clinical severity of the disease, (3) the technical maturity of the proposed solution, and (4) the affordability of the solution (development and production).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603807A - Medical Systems - Adv Dev

PROJECT

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Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Reviews, evaluations, and trials of malarial/anti-malarial vaccines, drugs, and diagnostics: In FY04, initiated true negative (CONUS) and completed finger stick (OCONUS) trials with the Malaria Rapid Diagnostic Device (MRDD); initiated a Phase 1/2 safety and efficacy trial of the Recombinant P falciparum malaria vaccine in U.S. volunteers. In FY05, conduct a Milestone C IPR to transition MRDD to Full-Rate Production and Deployment, resulting in fielding of state-of-the-art malaria diagnostic capability for military physicians; conduct a Critical Design Review to determine if the Recombinant P falciparum malaria vaccine should continue to advanced Phase 2/3 testing OCONUS. In FY06, initiate Phase 2/3 testing of Recombinant P falciparum malaria vaccine OCONUS in Kenya. In FY07, continue Recombinant P falciparum malaria vaccine trials OCONUS; transition the anti-malarial drug, Artesunate (for treatment of severe and complicated malaria) to System Development and Demonstration (Milestone B) and initiate Phase 2b efficacy studies.	1613	2596	3243	5405
Trials, evaluations, and reviews for grouped infectious disease vaccines and drugs (Hepatitis E and Leishmania). In FY04, completed evaluation of the results of the multiyear Phase 2 trial of the Hepatitis E Vaccine conducted in Nepal; completed the Phase 2 field trial of the current formulation of the Paramomycin/Gentamicin Topical Antileishmanial Cream and initiated a solicitation for a contract for production and continued testing of the product.	400	0	0	0
In FY04, initiated a phase 1/2 study of the Dengue Tetravalent Vaccine (DTVV) in Thailand; completed production and testing of the master seeds for the DTVV. In FY05, complete Phase 2 testing of the DTVV in Thailand and analyze results. In FY06, conduct a Critical Design Review and transition the DTVV to full scale field-testing.	3097	2657	2100	0
Small Business Innovative Research/Small Business Technology Transfer Programs	97	0	0	0
Totals	5207	5253	5343	5405

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Test and evaluate in-house and commercially developed products in extensive government-managed clinical trials to gather data required for FDA licensure and Environmental Protection Agency registration.

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
808

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			3850	473		480		486		Continue	5289	Continue
Subtotal:			3850	473		480		486		Continue	5289	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			698	158		160		162		Continue	1178	Continue
Subtotal:			698	158		160		162		Continue	1178	Continue

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
808

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			17120	3782		3849		3892		Continue	28643	Continue
Subtotal:			17120	3782		3849		3892		Continue	28643	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			3710	840		854		865		Continue	6269	0
Subtotal:			3710	840		854		865		Continue	6269	0

Project Total Cost:			25378	5253		5343		5405		Continue	41379	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
808

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) PBD, (2) DDR Leishmania Skin Test				▲1	▲2																											
(3) MS C Leishmania Skin Test																																
(4) SDD Paromomycin/Gentamicin				▲4																												
(5) CDR, (6) DRR RTS, S improved malaria vaccine				▲5	▲6																											
(7) MS C RTS, S improved malaria vaccine																																
(8) MS C Malaria Rapid Diag Device																																
(9) CDR, (10) MS C Dengue Tetra Vaccine																																
(11) CDR, (12) DRR Hepatitis E Vaccine				▲11	▲12																											
(13) MS C Hepatitis A Vaccine																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
808

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Leishmania Skin Test		1Q						
Paromomycin/Gentamicin	3-4Q							
RTS,S/improved adjuvant (P. falciparum) malaria vaccine		1Q						
Malaria Rapid Diagnostic Device (Milestone C)		3Q						
Dengue Tetravalent Vaccine (Critical Design Review)		3Q						
Hepatitis E Vaccine	3-4Q							
Dengue tetravalent vaccine (Critical Design Review)		3Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
836

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
836 COMBAT MEDICAL MATL AD	3969	7325	3694	3753	4825	14556	14386	3582	0	59910

A. Mission Description and Budget Item Justification: This project funds technical development of candidate medical products for the advancement of combat casualty care; especially far forward on the battlefield with first responders, combat life savers, and field medics. This funds Phase 1 and 2 human clinical trials for safety and efficacy of devices unique to military operational requirements. These products will decrease mortality rates increase soldiers' morale and willingness to place themselves in danger. Additionally, several products will reduce the medical organizational sustainment footprint through smaller the weight and cube and equipment independence from supporting materials. Priority is given to those products that provide the greatest clinical benefit balanced with the technical and financial risks.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Hemostatic Dressing (HD): In FY04, closed out contract with American Red Cross (ARC) due to ARC financial problems and subsequent program unaffordability. In FY05, develop cooperative agreement with new development partner.	285	3490	0	0
Demonstrate, evaluate, and continue to develop medical evacuation systems: Special Medical Emergency Evacuation Device (SMEED): In FY04, attained a restricted Army Air Worthiness Release (AWR) for combat. Began computer-simulated structural analysis to attain unlimited AWR. Initiated development of power control and battery module. In FY05, complete design of power control and battery module. Attain Milestone C.	237	209	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
836

Accomplishments/Planned Program (continued)

Conduct/Perform development, testing and Milestone reviews for field medical treatment and treatment aid devices:
 (1) Ceramic Oxygen Generator (COG): In FY04, developed efficient and stable oxygen generator cells, and designed portable oxygen generator. In FY05, fabricate first portable oxygen generator prototype. In FY06, conduct user and technical testing. Conduct Milestone B. In FY07, develop engineering pre-production prototype and obtain FDA clearance.
 (2) Ventilatory Assist Device (VAD): In FY04, integrated ventilator drive unit with the anesthesia vaporizer. Produced user-training materials. In FY05, conduct technical and user testing, and make any required modifications. Hold Milestone C review. Support the fielding process.
 (3) One-Handed Tourniquet (OHT): In FY04, released request for information and solicited potential commercial off-the-shelf improved tourniquet candidates. Continued human factors evaluation and technical testing. In FY05, recommend commercial off the shelf procurement and fielding.
 (4) Non-Contact Respiration Monitor (NCRM): In FY04, refined respiration sensor, miniaturized electronics, and developed advanced prototype with reduced weight and volume. In FY05, conduct user evaluation and establish requirement. In FY06, conduct Milestone B. Develop engineering pre-production prototype. In FY07, conduct technical and user testing and evaluations.
 (5) Rotary Valve Pressure Swing Adsorption Oxygen Generator (RVPSAOG): In FY04, designed feed air compressor, and developed prototype lightweight portable oxygen generator. In FY05, reduce oxygen generator weight and size. Conduct Milestone B review. In FY06, develop engineering pre-production prototype. Conduct technical and user testing and evaluation. Conduct Milestone C review. In FY07, initiate low rate production.
 (6) Battery Powered IV Fluid Warmer: In FY06, begin concept development. In FY07, conduct user and technical testing.

FY 2004	FY 2005	FY 2006	FY 2007
3376	3626	3694	3753
71	0	0	0
3969	7325	3694	3753

Small Business Innovative Research/Small Business Technology Transfer Programs

Totals

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Evaluate commercially developed materiel in government-managed tests for hardening or other modification.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
836

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No other contract exceeds \$1M			11824	0		0		0		0	11824	0
Subtotal:			11824	0		0		0		0	11824	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

Remarks: No product/contract costs greater than \$1M individually.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
836

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: No product/contract costs greater than \$1M individually.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$M individually.			10660	7325		3694		3753		0	25432	0
Subtotal:			10660	7325		3694		3753		0	25432	0

Project Total Cost:			22484	7325		3694		3753		0	37256	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
836

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11						
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
(1) SMEED								MS C 																											
(2) Ceramic Oxygen Generator, (3) Ceramic Oxygen Generator, (4) Ceramic Oxygen Generator								MS A 				MS B 				MS C 																			
(5) Ventalitory Assist Device								MS C 																											
(6) One-handed Tourniquet								MS C 																											
(7) Non-contact Respiration Monitor, (8) Non-contact Respiration Monitor												MS B 							MS C 																
(9) Rotary Valve Pressure Oxygen Generator, (10) Rotary Valve Pressure Oxygen Generator									MS B 			MS C 																							
(11) Battery-powered IV Fluid Warmer, (12) Battery-powered IV Fluid Warmer												MS A 							MS B 																
(13) Battery-powered IV Fluid Warmer																																			MS C 

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
836

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
SMEED (MS C)		4Q						
Ceramic Oxygen Generator Systems (MS A, MS B, MS C)		3Q	4Q		1Q			
Ventilatory Assist Device (MS C)		2Q						
One-Handed Tourniquet (MS, C)		3Q						
Non-contact Respiration Monitor (MS B, MS C)			4Q		4Q			
Rotary Valve Pressure Swing Oxygen Generator (MSB, MS C)		3Q	3Q					
Battery-powered IV Fluid Warmer (MS A, MS B, MS C)			2Q		1Q		1Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
837

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
837 SOLDIER SYS PROT-AD	1063	712	951	2534	1934	1866	1780	1778	0	13467

A. Mission Description and Budget Item Justification: This project supports the conceptual and technical development of preventive medicine materiel including devices and medicines in order to provide protection, sustainment, and enhancement of the physical and psychological capabilities of soldiers across all conditions of combat. Focus is on the reduction of personnel losses due to preventable disease and non-battle injuries through the development of environmental and physiological performance monitors and other preventive medicine countermeasures.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
In FY04, a field trial of the Hepatitis E Vaccine was completed in Nepal. In FY05, conduct stability studies with commercial partner on the three lots of Leishmania tropica skin tests, and manufacture skin tests for the Phase 2 safety and immunological genetics studies to be conducted in Turkey. In FY06, continue stability testing of original three lots, start stability testing on the skin tests made for the Phase 3 study, and begin a Phase 2 field trial with the Leishmania tropica skin test. In FY07, review and evaluate Phase 2 field trial results, and continue stability testing on skin tests being prepared for Phase 3 trials. Prepare to conduct Phase 3 field trials.	1032	712	951	2534
Small Business Innovative Research/Small Business Technology Transfer Programs	31	0	0	0
Totals	1063	712	951	2534

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Test and evaluate materiel in government-managed trials to meet fielding requirements.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
837

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			1447	342		456		1217		Continue	3462	0
Subtotal:			1447	342		456		1217		Continue	3462	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			79	23		29		75		Continue	206	0
Subtotal:			79	23		29		75		Continue	206	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
837

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually		Research and development; stability and potency testing	356	127		172		456		Continue	1111	0
Subtotal:			356	127		172		456		Continue	1111	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			885	220		294		786		Continue	2185	0
Subtotal:			885	220		294		786		Continue	2185	0

Project Total Cost:			2767	712		951		2534		Continue	6964	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
837

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) MS B					Leishmania Skin Test ▲																											

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603807A - Medical Systems - Adv Dev

PROJECT
837

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Leishmania Skin Test			4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603827A - Soldier Systems - Advanced Development

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	0	10595	10443	18160	14329	15947	16139	0	85613
S51 AIRCREW INTEGRATED SYS AD	0	0	3374	3443	3525	3619	4044	4040	0	22045
S52 SOLDIER SUPPORT EQUIPMENT - AD	0	0	197	202	202	201	407	407	0	1616
S53 CLOTHING AND EQUIPMENT	0	0	7024	6798	9522	9039	6406	6605	0	45394
S54 SMALL ARMS IMPROVEMENT	0	0	0	0	4911	1470	5090	5087	0	16558

A. Mission Description and Budget Item Justification: This is a new Program Element (PE) which manages the soldier as a system in order to increase combat effectiveness, test and deliver tangible products that save soldiers' lives, and improve soldiers' quality of life. Starting in FY06, the following program elements and associated projects will be consolidated in this program element: PE 0603801 (Project DB45 ACIS Advanced Development); PE 0603474 (Project DC09 Soldier Support Equipment and Project D669 Clothing and Equipment); and PE 0603802 (Project AS2 Small Arms Improvements and Project AS3 Objective Individual Combat Weapons). The consolidation complies with the FY05 Appropriation Act provided by Congress. Combining these program elements into one common program element streamlines the management and efficiency of developing and testing soldier systems.

Project S51 (Aircrew Integrated Systems) was created upon transition from PE 0603801 (Project DB45 Aircrew Integrated System) in FY06. This project supports component development and prototyping of critical soldier support systems and other combat service support equipment that will improve unit sustainability and combat effectiveness. This project transitions from PE 0603801A.

Project S52 (Soldier Support Equipment) supports component development and prototyping of critical soldier support systems and other combat service support equipment that will improve unit sustainability and combat effectiveness. This project was created upon transition from PE 0603474 (Project DC09 Soldier Support Equipment) in FY06.

Project S53 (Clothing and Equipment) develops state-of-the-art technology to improve tactical and non-tactical clothing and individual equipment to enhance the lethality, survivability and mobility of the individual Soldier. This project was created upon transition from PE 0603747 (Project 669 Clothing and Equipment) in FY06.

Project S54 (Small Arms Improvement) - Funding profile starts in FY08. This project was created upon transition from PE 0603802 (Project AS2 Small Arms Improvements and Project AS3 Objective Individual Combat Weapon) in FY06.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603827A - Soldier Systems - Advanced Development

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	0	0	0
Current Budget (FY 2006/2007 PB)	0	10595	10443
Total Adjustments	0	10595	10443
Net of Program/Database Changes			
Congressional Program Reductions			
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years		10595	10443

Adjustments to Budget Years - starting in FY06, several program elements were re-aligned and combined into this program element (PE 0603827 Soldier Systems) to streamline the management and efficiency of developing and testing soldier systems:

PE 0603801 (Project DB45 Aircrew Integrated Systems)

PE 0603474 (Project DC09 Soldier Support Equipment and Project D669 Clothing and Equipment)

PE 0603802 (Project AS2 Small Arms Improvements and Project AS3 Objective Individual Combat Weapon)

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603827A - Soldier Systems - Advanced Development

PROJECT
S51

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S51 AIRCREW INTEGRATED SYS AD	0	0	3374	3443	3525	3619	4044	4040	0	22045

A. Mission Description and Budget Item Justification: This project supports component development and prototyping of critical soldier support systems and other combat service support equipment that will improve unit sustainability and combat effectiveness. This project transitions from 0603801A.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Concept exploration of pilot situational awareness and cognitive decision aiding tools.	0	0	1274	1050
Explore technology to upgrade environmental control and waste management systems.	0	0	500	500
Concept exploration of helmet technologies and helmet mounted devises.	0	0	1350	1475
Continue advanced component development of Air Warrior preplanned technology improvements.	0	0	250	418
Totals	0	0	3374	3443

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603827A - Soldier Systems - Advanced Development

PROJECT
S51

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, A PE 0603801A PROJ DB45 Adv Dev	7101	6176	0	0	0	0	0	0	0	13277
RDTE, A PE 0604801A PROJ DC45-EMD	3256	3239	0	0	0	0	0	0	0	6495
RDTE, A PE 0604601A PROJ S61-EMD	0	0	2248	2291	2523	2620	2706	2805	Continuing	Continuing
Aircraft Procurement, Army SSN AZ3110 - ACIS	32848	29694	29352	34821	42127	38873	56594	42268	Continuing	Continuing

C. Acquisition Strategy: Technologies developed under the System Integrator contract will integrate the Air Warrior (AW) Block 1 and 2 features with additional Block 3 capabilities. Specifically these Block 3 capabilities will include a fully compliant Modular Integrated Helmet and Display System (MIHDS), Chemical, Biological, Radiological, and Nuclear (CBRN) waste disposal system and upgrades to AW block 1 and 2 components as emerging technologies become available. The MIHDS helmet will provide a day heads up display, nuclear flash protection, external audio, don in flight CBRN protection and Agile laser eye protection. The System Integrator contract is a 5 year delivery order cost plus fixed fee and was awarded in August 2004. The Virtual Cockpit Optimization project is Congressionally funded for development of technologies to increase pilots' situational awareness and provide cognitive decision aiding tools.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603827A - Soldier Systems - Advanced Development

PROJECT
S51

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Air Warrior Block Improvements Concept Development	C - CPFF	TBD	0	0		2436	1Q	2469	1Q	0	4905	0
Subtotal:			0	0		2436		2469		0	4905	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	Various Government	0	0		444	1-4Q	465	1-4Q	0	909	0
Subtotal:			0	0		444		465		0	909	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603827A - Soldier Systems - Advanced Development

PROJECT
S51

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Administration	Allotment	Various Government	0	0		494	1-4Q	509	1-4Q	0	1003	0
Subtotal:			0	0		494		509		0	1003	0

Project Total Cost:			0	0		3374		3443		0	6817	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603827A - Soldier Systems - Advanced Development

PROJECT
S51

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) Block 1 First Unit Equipped	▲ 1 3-4 CAV (25 ID)																															
Block 1 Fielding					Block 1 Fielding																											
Block 2 RDT&E					Block 2 RDT&E																											
Block 2 Test and Evaluation					Block 2 DT/OT																											
(2) EDM Prod Award Blk 2									▲ 2 Block 2 Contract Award																							
(3) AWIS Prod Award Blk 2													▲ 3 Block 2 Contract Award																			
Block 2 Fielding													Block 2 Fielding																			
(4) High Level Ballistic Protection Prototype Dev & Test Contract Awd, (5) High Level Ballistic Protection Prototype Dev & Test Contract Awd	▲ 4				▲ 5																											
(6) Block 3 SI Award					▲ 6 Block 3 System Integrator (SI)Contract																											
Block 3 Component Dev and Dem					Block 3 RDT&E																											
Block 3 Test and Evaluation													Block 3 DT/OT																			
Block 3 Production																					Block 3 Production											
Block 3 Fielding																					Block 3											
(7) VCOP Components Demo in Adv Prototyping Engr Experimentation Sim, (8) VCOP Components Demo in Adv Prototyping Engr Experimentation Sim	▲ 7				▲ 8																											

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603827A - Soldier Systems - Advanced Development

PROJECT
S51

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Advanced Component Development of Air Warrior Block 2 and 3 improvements.	1-4Q	1-4Q	1-3Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
System Development and Demonstration of Air Warrior Block 2 and 3 improvements.	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-3Q	1-4Q
VCOP components demonstration in Adv. Prototyping Engr. Experimentation (APEX) simulator.	3Q	2Q						
Block 1 Air Warrior First Unit Equipped.	3Q							
Block 3 Prime Integrator Award.	4Q							
Block 2 Production Contract Award - EDM.			1Q					
Block 2 Production Contract Award - AWIS.				2Q				
Block 2 Fielding.			3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	
Block 3 Production Contract Award.							1Q	
Block 3 Fielding								1-4Q

Note: Virtual Cockpit Optimization Project (VCOP) is not a funded project. Funds have been appropriated by Congress and are available only in the year of execution.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603827A - Soldier Systems - Advanced Development

PROJECT
S53

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S53 CLOTHING AND EQUIPMENT	0	0	7024	6798	9522	9039	6406	6605	0	45394

A. Mission Description and Budget Item Justification: The project develops state-of-the-art technology to improve tactical and non-tactical clothing and individual equipment to enhance the lethality, survivability and mobility of the individual Soldier. This project transitioned from PE 0603747 (Project 669 Clothing and Equipment) in FY06.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Army Combat Uniform (ACU) II: Conduct technical research and perform laboratory evaluation of enhancements to the ACU that may incorporate permetherin, fire retardant, water repellent and antimicrobial protection.	0	0	1146	900
Fully Integrated Combat Helmet (FICH): Continue Product Improvement of helmet components in support of fielding and developmental efforts. Research technologies to mitigate the effects of high-speed ballistic blunt trama and low-rate impact (crash) protection. Integrate communications headset technologies into the helmet, incorporating both hearing protection and radio/intercom and face-to-face communication.	0	0	777	700
Modular Lightweight Load Carrying Equipment (MOLLE): Continue design improvements to existing fielded systems as a result of constantly evolving tactics, techniques and procedures for the loadbearing system.	0	0	548	0
Modular Boot System: Complete Technical testing initiated in FY05 (under 603747.669) to downselect to one boot that will replace multiple Organizational Clothing and Individual Equipment (OCIE) boots. Complete User test.	0	0	1191	700
Soldier Body Armor (SBA) Enhancements: Initiate efforts to investigate technologies that will verify structural integrity of existing ballistic plates and collaborate with industry to mature non-ceramic ballistic materials.	0	0	747	1800
Oganizational Clothing and Individual Equipment (OCIE)Modernization/Moisture Management: Initiate efforts to explore fabric blends, weaves and treatments to assess water repellency, breathability, wearable sensors, mechanical stretch, comfort and durability impact. Conduct market surveys.	0	0	373	0
Combat Eye Protection (CEP): Initiate efforts to leverage and incorporate laser eye protection technology advancements (i.e., scratch and fog resistance) into ballistic goggles and spectacles and assess capability improvements.	0	0	547	1000

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT			
4 - Advanced Component Development and Prototypes	0603827A - Soldier Systems - Advanced Development	S53			
Accomplishments/Planned Program (continued)		FY 2004	FY 2005	FY 2006	FY 2007
Chemical Protective Ensemble: Initiate development to reduce bulk/weight of current level A/B suit (STEPO/ITAP), increase cooling and improve movement capabilities. Build test samples and perform physical testing and chemical agent testing.		0	0	483	0
Self Regulating Thermal Systems(Cold Weather Clothing System/Sleeping System/Medical Blanket): Initiate effort for a Non-layered ensemble that is capable of providing comfort in a wide temperate range. Develop an adaptive material and system design feature combined with the capability of thermostatic control of the heat/insulation properties of the item by the wearer.		0	0	667	0
Army Combat Environmental Clothing System (ACECS): Continue to identify new fabrics, treatments and constuction methods to increase the performance of the Cold Wet Weather Clothing System. Construct garments for initial technical testing.		0	0	299	0
Nuclear, Biological, and Chemical (NBC) Hydration System: Complete User test evaluation on Hydration on the Move initiated in FY05 (under 0603747.669). Initiate NBC Hydration Block II to provide the capability to hydrate hands free while in an NBC environment using Commerical off the shelf (COTS) on the move hydration concept of operation. Complete user test evaluation on hydration on the move. Build samples and perform physical properties and chemical agent testing.		0	0	246	0
Simultaneous Delivery of Jumpers/Door Bundles/Packages: Initiate advance development for simultaneous door bundle delivery system/method/device to develop an easily movable container that 1 jumpmaster can deploy.		0	0	0	400
Moisture Management Shelter System: Initiate development of moisture management materials with capability to minimize/eliminate humidity within shelters and the buildup of water condensation on the inner surface while providing environmental protection.		0	0	0	700
Quick Strike Individual Shelter: Initiate evaluation of new concepts of individual, environmental protective shelters possessing the capabilities of easy set-up and striking, low profile and rapid egress.		0	0	0	598
Totals		0	0	7024	6798

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603827A - Soldier Systems - Advanced Development

PROJECT
S53

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0604713.DL40, Clothing and Equipment	2960	5116	0	0	0	0	0	0	0	8076
RDTE, 0603747.669, Clothing and Equipment	8323	9196	0	0	0	0	0	0	0	17519
RDTE, 06004601A.S60, Clothing and Eq	0	0	7918	9082	9323	9239	5901	5999	Continuing	Continuing
OMA, 121017, Central Funding and Fielding	93707	159554	145411	152787	116876	100600	102701	52960	Continuing	Continuing

C. Acquisition Strategy: Programs will pursue normal transition to System Development and Demonstration (SDD) and production. This Project will continue to exercise competitively awarded contracts using best value source selection procedures.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603827A - Soldier Systems - Advanced Development

PROJECT
S53

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	MIPRS	Natick Soldier Center, Natick, MA	0	0		2000	1-2Q	1808	1-2Q	0	3808	0
b . Various	Contracts	Various	0	0		2168	1-2Q	1900	1-2Q	0	4068	0
Subtotal:			0	0		4168		3708		0	7876	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Misc Support Costs	MIPR	Various	0	0		1000	1-2Q	1000	1-2Q	0	2000	0
Subtotal:			0	0		1000		1000		0	2000	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603827A - Soldier Systems - Advanced Development

PROJECT
S53

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	MIPRS	Various	0	0		500	1-4Q	550	1-4Q	0	1050	0
Subtotal:			0	0		500		550		0	1050	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support		PM CIE Ft Belvoir, VA	0	0		1356	1-4Q	1540	1-4Q	0	2896	0
Subtotal:			0	0		1356		1540		0	2896	0

Project Total Cost:			0	0		7024		6798		0	13822	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603827A - Soldier Systems - Advanced Development

PROJECT
S53

Event Name	FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11				FY 12			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Army Combat Uniform User Evaluation Test																																
NBC Hydration System User Evaluation Test																																
Modular Boot System Technical Test																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603827A - Soldier Systems - Advanced Development

PROJECT
S53

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Army Combat Uniform User Evaluation Test			1-4Q	1-2Q				
NBC Hydration System User Evaluation Test			1Q					
Modular Boot System Technical Test			1-2Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes				PE NUMBER AND TITLE 0603850A - Integrated Broadcast Service (JMIP/DISTP)				PROJECT 472		
COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
472 INTEGRATED BROADCAST SERVICE (JMIP/DISTP)	1968	4294	2762	0	0	0	0	0	0	10952

A. Mission Description and Budget Item Justification: The Integrated Broadcast Service (IBS) is the worldwide DoD standard network for transmitting tactical and strategic intelligence and targeting data within a common format and migrating to a single family of Joint Tactical Terminals (JTT) for improved operational jointness. The JTT is a totally integrated Joint Program (all services and Special Operations Command (SOCOM)) which was created to consolidate and replace existing IBS terminal functionality/capability, with a "common family" of common Integrated Broadcast Service-Modules (CIBS-M) (both hardware and software). This is required to implement the IBS Plan and consolidate/eliminate duplicative efforts. The JTT program leverages, early tech-based efforts initiated by organizations such as the National Reconnaissance Office (NRO). For efforts that contribute to increased value in performance or sustainment, management control will transition to the JTT Joint Program Office (JPO) and capabilities will be integrated into the CIBS-M family of hardware and software modules. The CIBS-M family of modules will be the "sole" provider, ensuring continued IBS interoperability to a variety of tactical receivers across DoD and the services. This program funds the design, development, test and evaluation of initial CIBS-M hardware and software modules, as well as implementing performance enhancements to the family of JTT equipment, and to training, equipping and supporting the warfighter with improved Joint Readiness and Interoperability. This family of modules disseminates encrypted intelligence broadcasts to commanders in a network centric environment. As recommended by the Analysis of Alternatives study concerning the JTT capabilities migration to JTRS, JTT will convert legacy IBS waveforms (IBS-I, IBS-S, TRIXs and TADIX-B) to a Software Communication Architecture (SCA) compliant equivalent and deliver those waveforms to the JTRS Joint Program Office (JPO) for inclusion in the JTRS waveform library. JTT will integrate the SCA compliant objective IBS waveform into the JTT system as it becomes available from the JTRS JPO.

FY 06 Funds support the development of the Integrated Broadcast Service (IBS) Common Message Format (CMF) to support migration to the IBS Worldwide standard DoD Network.
FY 2006 completes the development.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Develop and test modules for Software Communications Architecture (SCA) compliant legacy waveforms for JTRS.	1968	2000	0	0
Develop Integrated Broadcast Service (IBS) Common Message Format (CMF) to support migration to the IBS Worldwide standard DOD Network	0	2294	2762	0
Totals	1968	4294	2762	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603850A - Integrated Broadcast Service (JMIP/DISTP)

PROJECT
472

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	4356	2769	0
Current Budget (FY 2006/2007 PB)	4294	2762	0
Total Adjustments	-62	-7	0
Net of Program/Database Changes			
Congressional Program Reductions	-62		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years		-7	

<u>C. Other Program Funding Summary</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
V29600 Other Procurement, Army - JTT/CIBS-M (Tiara),	41380	13993	9862	949	950	702	0	0	0	67836

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603850A - Integrated Broadcast Service (JMIP/DISTP)

PROJECT

472

D. Acquisition Strategy: Modifications for the design, development and delivery to JTRS JPO of JTRS SCA compliant legacy IBS waveforms will be awarded to Boeing under an existing Air Force contract, to complete ongoing work funded by USAF Airborne Intelligence System Program Office. The CMF development will be awarded to the JTT Original Equipment Manufacturer (OEM). As the broadcast networks continue to evolve and modify their formats and protocols, the JTT program will support IBS and various existing and future radios and host systems.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603850A - Integrated Broadcast Service
(JMIP/DISTP)

PROJECT
472

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . JTRS SCA/IBS Modules	MIPR	Air Force/Boeing	2552	1429	1-4Q	0		0		0	3981	3712
b . Common Message Format	CPFF	Raytheon, St. Petersburg, FL	0	2225	1-4Q	2193	1-4Q	0		0	4418	2320
Subtotal:			2552	3654		2193		0		0	8399	6032

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	CECOM/RDCOM, Ft. Monmouth, NJ	720	240	1Q	200	1Q	0		0	1160	0
Subtotal:			720	240		200		0		0	1160	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603850A - Integrated Broadcast Service
(JMIP/DISTP)

PROJECT
472

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IOT&E support	MIPR	Various	1402	0		0		0		0	1402	0
b . JITC DAMA Certification of JTT	MIPR	JITC	400	0		0		0		0	400	0
c . JTIC Certification of CMF	MIPR	Various	0	0		200	4Q	0		0	200	0
d . JTEL Certification of SCA	MIPR	SPAWAR, CA	0	200	4Q	0		0		0	200	0
Subtotal:			1802	200		200		0		0	2202	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	In House	PM JTT, Ft. Monmouth, NJ	782	200	1Q	169	1Q	0		0	1151	0
Subtotal:			782	200		169		0		0	1151	0

Project Total Cost:			5856	4294		2762		0		0	12912	6032
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
**0603850A - Integrated Broadcast Service
 (JMIP/DISTP)**

PROJECT
472

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JTRS SCA Compliant Legacy Waveforms																																
(1) Delivery for JTEL Certification of SCA Modules													▲ 1																			
CMF Development																																
(2) JITC Certification of CMF																	▲ 2															

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603850A - Integrated Broadcast Service
(JMIP/DISTP)

PROJECT
472

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Dev of SCA Compliant Legacy Waveforms for JTRS	2-4Q	1-4Q						
JTEL Certification of SCA Modules			2Q					
Common Message Format (CMF) Development		3-4Q	1-4Q					
JITC Certification of CMF			4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603856A - SCAMP Block II

PROJECT
389

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
389 SCAMP SEP	27716	9798	0	0	0	0	0	0	0	51616

A. Mission Description and Budget Item Justification: The SCAMP Block II program, consisting of two terminals, the SCAMP Manportable System Enhancement Program (SEP) terminal and the SCAMP Manpackable Terminal in support of the Advanced Extremely High Frequency (AEHF) Satellite Program, was realigned. The Army redirected the AEHF SCAMP Manpackable requirements to realign to the emerging WIN-T Operational Requirements Document (ORD)/Multi-band Integrated Satellite Terminal (MIST) program. The Army renamed Project Element 0603856A/D389 as SCAMP SEP to reflect the realigned mission. The SCAMP SEP terminal supports the requirements in the Joint AEHF ORD and provides protected worldwide anti-jam, low probability of intercept and detection and assured voice and data communications for the joint global warfighter. SCAMP SEP will transmit the Extremely High Frequency (EHF) band and receive in the Super High Frequency(SHF) band and will operate over Milstar, other MIL-STD-1582 compatible payloads, and the future AEHF payload, providing secure voice and data services. SCAMP SEP will transmit and receive intelligence, situational awareness, as well as command and control traffic.

The SCAMP Manportable SEP terminal upgrades existing SCAMP terminals to support the AEHF Satellite Program. In support of the Joint AEHF ORD dated 2 Oct 00, the Manportable SEP will provide up to 115 Kbps Uplink(narrowband) and up to 1024 Kbps Downlink AEHF capability to units, Division Headquarters and Above, and Special Operations Forces that require increased data rates for range extended command and control communications.

No funding in FY06/07. The Army terminated the SCAMP SEP program on 7 Oct 04.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
AEHF SCAMP SEP modification kit development - terminated 7 Oct 04	21287	9065	0	0
Develop and integrate SCAMP SEP additional test resources and conduct Development Tests - terminated 7 Oct 04	4878	506	0	0
Support to AEHF Satellite Program, Baseband Working Groups and Technical Interchange Meetings - terminated 7 Oct 04	1551	227	0	0
Totals	27716	9798	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603856A - SCAMP Block II

PROJECT
389

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	10221	9253	0
Current Budget (FY 2006/2007 PB)	9798	0	0
Total Adjustments	-423	-9253	0
Net of Program/Database Changes			
Congressional Program Reductions			
Congressional Rescissions	-147		
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-276		
Adjustments to Budget Years		-9253	

FY06 funds realigned \$9.253M to higher priority Army requirements.
 Army terminated program 7 Oct 04.

C. Other Program Funding Summary: Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603856A - SCAMP Block II

PROJECT

389

D. Acquisition Strategy: The SCAMP Manportable SEP acquisition strategy upgrades the Current SCAMP to meet the Manportable AEHF requirement in the Joint AEHF ORD. A development modification to the existing Rockwell Collins contract was awarded on 28 Feb 01 to implement AEHF capability. The Army terminated the SCAMP SEP program on 7 Oct 04.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes			PE NUMBER AND TITLE 0603869A - Meads Concepts - Dem/Val					PROJECT 01B		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
01B MEDIUM EXTENDED AIR DEFENSE SYSTEM (MEADS)	249444	251414	0	0	0	0	0	0	0	488237

A. Mission Description and Budget Item Justification: MEADS is an international co-development program essential to fulfill the requirements of the U.S. Army and the U.S. Marine Corps for a low-medium Air Missile Defense (AMD) system in the 21st century. MEADS will offer a significant improvement in surveillance, target tracking, integrated fire control and target engagement, tactical mobility and strategic deployability over comparable missile systems. It will defend the maneuver force and other critical forward-deployed assets against short and medium range Theater Ballistic Missiles (TBMs), cruise missiles (CMs) and other air-breathing threats such as unmanned combat aerial vehicles (UCAVs) throughout all phases of technical operations. MEADS will operate with upper-tier systems in areas of debarkation and assembly and provide continuous coverage alone or with Short Range Air Defense Systems (SHORAD) which has evolved to Cruise Missile Defense Systems (CMDS), such as SLAMRAAM, in the maneuver areas of the battlefield during movement to contact and decisive operations. MEADS will be interoperable with other airborne and ground-based sensors and utilize a netted and distributed architecture with modularly-configurable battle elements. The objective system fire unit will have a BMC4I suite in an integrated single shelter TOC, a surveillance radar, two multifunction fire control radars, six launchers and associated logistic support vehicles all mounted on common FMTV prime movers. The MEADS program has completed execution of the thirty-two and half month Risk Reduction Effort (RRE) phase which ended in March 2004. The primary objectives of RRE were to mature critical technologies, develop program cost and schedule consensus, and prepare program planning for entry into the Design and Development (D&D) Phase at Milestone B in 2004. A Risk Reduction Effort Modification (RREM) phase was executed in February 2004 to act as a bridging effort between the RRE and D&D phases. On July 1, 2004, the Defense Acquisition Board (DAB) approved Milestone B for all three increments of the Patriot/MEADS Combined Aggregate program (CAP) with a MEADS First Unit Equipped date by FY2015. The Acquisition Program Baseline (APB) and Acquisition Strategy were also approved for System Development and Demonstration (SDD). The U.S. and Italy signed the D&D Memorandum of Understanding (MOU) on September 24, 2004 and September 27, 2004, respectively. Germany is expected to sign the MOU by 2QFY05 after the German Parliament approves the program. NAMEADSMA, the NATO contracting authority, awarded a not-to-exceed \$3.4B D&D letter contract to MEADS International on September 28, 2004.

A critical void remains in maneuver force protection against the current and future AMD threat of short and medium range TBMs, CMs, and low-to-medium altitude advanced air-breathing threats. This program will meet this challenge in successive increments of capability by integrating the PAC-3 missile and developing the critical technologies required for maneuver force protection, including development and testing of a netted and distributed Battle Management/Command, Control, Communications, Computers, and Intelligence (BM/C4I) Tactical Operations Center (TOC), 360-degree Multifunction Fire Control and Surveillance Radars, Light Weight Launcher and Launcher Reloader. The PAC-3 missile is the baseline interceptor for MEADS. Sensor and battle management software technology from both U.S. and international programs will be examined to enhance and augment firing battery functions, reducing development cost, manpower requirements and program risk to develop a U.S. and Allied capability to counter the current and future AMD threats. The approach emphasizes prototyping of system-specific and surrogate hardware in key areas of BM/C4I, fire control radar, and light

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603869A - Meads Concepts - Dem/Val

PROJECT

01B

weight launcher to satisfy mobility, strategic deployability and interoperability requirements in the objective netted and distributed architecture. The CAP first increment will rehost current BMC4I capability on new computers to be tested in FY08 and begin initial production in FY09 while also serving as the basis for further increment development. The Patriot/MEADS CAP will be an integral part of the AMD System of Systems concept. The FY06 RDTE budget postures the Army to move forward with a Patriot/MEADS Combines Aggregate Program (CAP) under PE0604869A for FY06 and beyond. The CAP will provide for the evolution of the Patriot/PAC-3 system to the MEADS objective system through the early introduction of the MEADS Major End Items. This approach provides for earlier fielding of enhanced air and missile defense capabilities across the currently fielded force to counter the evolving threat and allow for knowledge gained during the development and fielding of the Patriot System to be fused into the MEADS program. The PAC-3 Missile Segment Enhancement (MSE) missile, which provides for greater ranges, will be the objective missile for MEADS and

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue the U.S. contribution to the North Atlantic Treaty Organization (NATO) MEADS Management Agency (NAMEADSMA) International Program Office operational and management budgets to manage the Risk Reduction Effort (RRE), Risk Reduction Effort Modification (RREM) contract and to begin the Design and Development (D&D) Phase contract to design, develop, build, test and evaluate the production representative MEADS hardware.	157863	129637	0	0
Implement program integration efforts that will examine Department of Defense (DOD) Joint Vision and Army Transformation Future Force mix and integration issues; support Patriot / MEADS CAP in the test and evaluation of Air and Missile Defense (AMD) task force interoperability and Army System-of-Systems (in a netted and distributed architecture); support development and maintenance of Joint Data Network interface requirements; and appropriate planning of MEADS manpower, training, human factors, safety issues, cost reduction initiatives, and protection of U.S. background technology.	73781	56477	0	0
Continue management, support and salaries for the national and international program offices.	3000	4000	0	0
Continued single canister and engage on remote development. Includes efforts to support Missile Segment Enhancement.	14800	61300	0	0
Totals	249444	251414	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603869A - Meads Concepts - Dem/Val

PROJECT
01B

B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	264527	268721	275545
Current Budget (FY 2006/2007 PB)	251414	0	0
Total Adjustments	-13113	-268721	-275545
Net of Program/Database Changes			
Congressional Program Reductions			
Congressional Rescissions	-3743		
Congressional Increases			
Reprogrammings	-2087		
SBIR/STTR Transfer	-7283		
Adjustments to Budget Years		-268721	-275545

The Patriot/MEADS CAP RDTE funding are combined and under PE 0604869A beginning in FY06.

C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PE 0604865A, PAC-3	151318	61482	0	0	0	0	0	0	0	212800
PE 0203801, Patriot Product Improvement	45587	32082	16188	10607	10884	11119	12029	12520	Continue	Continue
SSN C49100, PAC-3 Missile	616942	487364	489700	494754	466004	471770	0	0	0	3026534
SSN C50001, Patriot/MEADS CAP	0	0	0	0	88425	64338	423209	663557	22957360	24196889
PE 0102419, JLENS	57803	79316	106420	256893	471997	332428	0	0	0	1304857
SSN BZ0525, OPA, JLENS	0	0	0	0	0	29153	549707	397776	0	976636
PE 654802, Project S23 SLAMRAAM	36103	63111	36102	29200	0	0	0	0	0	164516
SSN C81001, SLAMRAAM	7397	2440	19315	21970	59273	13124	0	0	0	123519

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603869A - Meads Concepts - Dem/Val

PROJECT
01B

C. Other Program Funding Summary (continued)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	ToCompl	TotalCost
PE 0604820, SENTINEL	0	5851	5080	2547	2647	0	0	0	0	16125
SSN WK5057, OPA, SENTINEL	20646	7337	8393	15373	25074	31572	34473	32552	0	175420
PE 0603327, Project E88, Integrated Fire Control AMD	40275	0	24961	42736	48894	50930	0	0	0	207796

C. Other Program Funding Summary: PAC-3 / MEADS CAP RDTE funding are combined and under PE0604869A in FY06 and beyond. This PE is an integral part of the Air, Space and Missile Defense System of Systems (SoS) including Integrated Fire Control (IFC), JLENS, Patriot/MEADS Combined Aggregate Program (CAP), SLAMRAAM, JTAGS, SENTINEL and on-going initiatives to achieve Single Integrated Air Picture (SIAP).

D. Acquisition Strategy: The MEADS program was approved by the Defense Acquisition Executive (DAE) in an August 2000 ADM to begin a Risk Reduction Effort (RRE) phase. This extended the Project Definition/Validation (PD/V) phase by three years to focus on integrating the PAC-3 missile into the MEADS system concept, identifying and reducing technical risk, developing a cost and schedule consensus among the partner nations (Germany, Italy, and United States), and to refine the MEADS concept. In July 2001, MEADS International (MI) was awarded a thirty-two and half month RRE contract. Additional key elements of the RRE scope include full harmonization of the threat and requirements, a detailed plan and cost consensus for Design and Development (D&D), and developing a negotiated Memorandum of Understanding (MOU) for the D&D phase. A 29 July 03 DAB IPR endorsed pursuit of Joint Requirements Oversight Council (JROC) approval of the MEADS requirements and directed further refinement of cost and acquisition strategy development. The Army Requirements Oversight Council (AROC) met on 06 August 2003 and approved the MEADS International Common Operating Requirements (ICOR). A Risk Reduction Effort Modification (RREM) phase was executed in February 2004 as a bridging effort between the RRE and D&D Phases. On 1 July 2004, the DAB approved Milestone B for all three increments of the Patriot/MEADS CAP with a First Unit Equipped date by FY2015. The United States and Italy signed the D&D MOU on September 24, 2004 and September 27, 2004, respectively. Germany is expected to sign by 2QFY05 after the German Parliament approves the program. NAMEADSM, the NATO contracting authority, awarded a not-to-exceed \$3.4B D&D letter contract to MEADS International on September 28, 2004.

Under the CAP acquisition strategy, as MEADS MEIs demonstrate maturity, a Milestone C decision review will be conducted for entry into production. The MEADS MEIs will be developed and fielded in three acquisition increments that integrate with and are in support of PEO Missiles and Space and Joint System of Systems (SoS) capabilities. Acquisition Increment 1 integrates the emerging MEADS BMC4I capability with Patriot battalions. Acquisition Increment 2 fields the lightweight launcher and MSE. Acquisition Increment 3 fields the Surveillance Radars and Multi-Function Fire Control Radars, and delivers the MEADS objective capability. For the System of Systems (SoS), the MEADS objective capability fully synergizes the interoperability and joint functionality between sensors, shooters, and BMC4I components, which addresses current Service-centric system shortfalls and provides enhanced capability through expanded engagement battlespaces and increased force protection.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

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01B

This incremental approach will maintain the current Patriot capability to protect the forces during the transformation to MEADS. Entrance criteria have been established for the MEIs to enter Low Rate Initial Production (LRIP) and Full Rate Production (FRP). MEADS performance objectives established in the International Common Operational Requirements (ICOR) document and Capability Development Document (CDD) will be assessed during MEADS system testing, which includes developmental flight testing and Initial Operational Test and Evaluation (IOT&E).

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603869A - Meads Concepts - Dem/Val

PROJECT
01B

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Risk Reduction	CPFF	NAMEADSMA, Huntsville, AL	71000	0		0		0		0	71000	0
b . Design and Development	CPIF	NAMEADSMA, Huntsville, AL	85443	126200	2-3Q	0		0		Continue	211643	0
c . Missile Segment Enhancement - LMMFC	SS-CPIF	LMMFC, Dallas, TX	14800	61300	2-3Q	0		0		Continue	76100	0
d . Missile Segment Enhancement - Raytheon	SS-FP	Raytheon, Boston, MA	0	0		0		0		Continue	0	0
e . Program Integration	Various	Various, Huntsville, AL	40443	41030	2-3Q	0		0		Continue	81473	0
f . U.S. Only Security	CPFF	Lockheed Martin, Syracuse, NY, Dallas, TX, & Orlando, FL	13581	0		0		0		Continue	13581	0
g . U.S. OGA's	MIPR	Various, Huntsville, AL	10672	3151	2-3Q	0		0		Continue	13823	0
h . In-House	Program Office	PO, Huntsville, AL	2033	3100	2-3Q	0		0		Continue	5133	0
i . U.S. Only Combined Aggregate Program	Various	Various, Huntsville, AL & Dallas, TX	0	1937	3Q	0		0		Continue	1937	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
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01B

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			237972	236718		0		0		Continue	474690	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Int'l Program Office	Program Office	NAMEADSMA, Huntsville, AL.	1420	1500	2Q	0		0		Continue	2920	0
b . U.S. Contracts	Various	CAS, Huntsville, AL & LMMFC, Dallas, TX	3015	3959	2Q	0		0		Continue	6974	0
c . Systems Engineering	MIPR	MRDEC, Huntsville, AL.	4037	5237	2Q	0		0		Continue	9274	0
Subtotal:			8472	10696		0		0		Continue	19168	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Internal Operating	LOE	NAMEADSMA, Huntsville, AL.	3000	4000	2-3Q	0		0		Continue	7000	0
Subtotal:			3000	4000		0		0		Continue	7000	0

Project Total Cost:			249444	251414		0		0		Continue	500858	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603869A - Meads Concepts - Dem/Val

PROJECT
01B

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
RISK REDUCTION EFFORT	RRE																															
Missile Segment Enhancement (MSE) Development (CAP Funded)	MSE DEVELOPMENT																															
RRE MODIFICATION	RREM																															
(1) MS B			▲1																													
(2) ADM			▲2																													
DESIGN AND DEVELOPMENT	DESIGN AND DEVELOPMENT																															
(3) Program Decision (GE Signature)							▲3																									
(4) SRR							▲4																									
(5) MEADS System PDR: Preliminary Design Review												▲5																				
MSE LRIP - Long Lead																																
(6) MEADS System CDR: Critical Design Review																												▲6				
(7) MSE LRIP Contract Award																												▲7				
MSE LRIP																													MSE LRIP			

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603869A - Meads Concepts - Dem/Val

PROJECT
01B

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone B	4Q							
Acquisition Decision Memorandum (ADM)	4Q							
U.S. & Italy Program Decision (MOU Signatures)	4Q							
Design and Development Phase Contract Award	4Q							
Program Decision (Germany Signature)		2Q						
System Requirements Review		3Q						
System PDR				3Q				
MSE LRIP - Long Lead Items						1Q		
System CDR							1Q	
MSE Contract Award							1Q	
MSE LRIP							1Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604201A - AIRCRAFT AVIONICS

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	45499	79356	23451	34714	53400	54325	62809	39356	0	428881
C94 JT AVIONICS STNDRDZN	0	13393	0	0	0	0	0	0	0	13393
C97 ACFT AVIONICS	45499	65963	23451	34714	53400	54325	62809	39356	0	415488

A. Mission Description and Budget Item Justification: This Program Element (PE) funds the development of avionics systems required to horizontally and vertically integrate the battlefield. Tasks in this PE support research efforts in the engineering and manufacturing development phases of these systems.

The Joint Avionics Standardization program supports the Fly by Wire Flight Control System (FBWFCS) which is a triple redundant flight control system. The system provides advanced aircraft flight handling qualities for degraded visual environments (DVE), agility and maneuverability. This system improves safety (pilot workload reduction), provides enhanced mission performance and enhanced survivability.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604201A - AIRCRAFT AVIONICS

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	68857	59571	38651
Current Budget (FY 2006/2007 PB)	79356	23451	34714
Total Adjustments	10499	-36120	-3937
Net of Program/Database Changes			
Congressional Program Reductions	-1191		
Congressional Rescissions			
Congressional Increases	13970		
Reprogrammings			
SBIR/STTR Transfer	-2280		
Adjustments to Budget Years		-36120	-3937

Change Summary Explanation:

FY 05 Congressional plus up of \$2.0M for IDM on project C97 and \$11,970 for Fly by Wire on project C94
 FY 06/07 funds realigned to higher priority requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604201A - AIRCRAFT AVIONICS				PROJECT C97		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
C97 ACFT AVIONICS	45499	65963	23451	34714	53400	54325	62809	39356	0	415488

A. Mission Description and Budget Item Justification: This Program Element (PE) funds the development of avionics systems required to horizontally and vertically integrate the battlefield. Tasks in this PE support research efforts in the engineering and manufacturing development phases of these systems.

The Joint Tactical Radio System (JTRS) aircraft installation is the transformational system that will provide Army Aviation the required interoperability capability for Future Force and Joint Force operations. The JTRS is a DoD directed replacement for all legacy radio systems. The JTRS provides the foundation for achieving network centric warfare operations across the radio frequency spectrum providing digital information exchange for situational awareness, both vertically and horizontally, between Joint Warfighting elements, while enabling connectivity to civil and national authorities in support of Homeland Defense. The JTRS will provide an internal capability through an open systems architecture approach in compliance with the Joint Technical Architecture which improves system performance and provides a growth capability for technology insertion at a minimal cost and effort. These RDT&E funds are required to design, develop, integrate, and qualify the aircraft installation kits (A Kits), to obtain an Airworthiness Release, to use the JTRS in Army rotary wing aircraft. The installed JTRS will provide the AH-64D, CH-47F, UH/HH-60M, and Special Operations Aircraft (SOA) with the critically needed interoperability capability to support the War fighter.

The Improved Data Modem (IDM) is the key link to joining Army Aviation with the digital battlefield and provides digital communication interoperability and flexibility on a fluid battlefield. Developed as an open system architecture, the IDM takes advantage of commercially available software and hardware solutions to enforce common communications protocols and the Joint Variable Message Format (JVMF). The IDM provides a flexible, software-driven digital messaging system interoperable with existing Battlefield Operating Systems and the Joint Forces. IDM improves Army Aviation's lethality and operational tempo through the exchange of fast and accurate data-burst communications through the Army's Fire Support and Tactical Internet (TI), providing seamless communications across the digital battlefield. These RDT&E funds are required to initiate development and integration of an Open Systems Architecture IDM solution for AH-64D Block III Manned/Unmanned Common Architecture Program (MCAP) and CH-47F/UH-60M/SOA Common Avionics Architecture System (CAAS). Funds also begin development and integration of the Future Combat System (FCS) database-to-database exchange interoperability standard.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604201A - AIRCRAFT AVIONICS

PROJECT
C97

The Joint Precision Approach and Landing System (JPALS) is a precision approach and landing system providing joint operational capability for U.S. forces assigned to conventional and special operations missions including those operating from fixed base, ship, tactical, and austere environments. This effort evaluates technical approaches for incorporating JPALS into Army aircraft while considering aircraft environment, electrical power, system space, weight, antenna placement, and electromagnetic compatibility without nullifying low observable capability requirements; also procures fixed base and tactical ground stations. JPALS supports research efforts in the Technology Development (TD) phase of the modified acquisition life cycle approved by the Defense Acquisition Executive in September of 1998.

Beginning in FY05 funds from PE 0305114A (711) - JPALS have been combined with this PE.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue development of JTRS A-Kit and begin system testing for AH-64D, CH-47F, and UH-60M/Q (JTRS)	33291	49147	8732	11232
Continue Systems Engineering and Logistics efforts (JTRS)	5207	3203	3363	3531
Continue Program Management support for the JTRS A-Kit development (JTRS)	2292	2166	877	1000
Complete Integrated Communication, Navigation, and Identification Avionics (ICNIA) compliance to JTRS requirements (JTRS)	1100	4000	0	0
Continue antenna effort (JTRS).	3200	1806	1896	1991
Continue Test and Evaluation Support(JTRS)	409	1912	2095	2200
Continue to provide system engineering, logistics, programmatic, and technical documentation for JPALS land and sea based development efforts and execute joint Army/Navy/Air Force effort to develop a JPALS capable Embedded GPS Inertial (EGI) receiver. (JPALS)	0	1774	1780	1817
Continue Program Management Support (JPALS)	0	39	97	96
Begin development and integration of an open systems architecture IDM solution and FCS database-to-database exchange (IDM)	0	1729	4372	12073
Complete Program Management Support (IDM)	0	0	143	517
Complete Systems Engineering and Logistics efforts (IDM)	0	187	96	257
Totals	45499	65963	23451	34714

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604201A - AIRCRAFT AVIONICS

PROJECT
C97

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Airborne Avionics SSN AA0700	33246	23173	73854	87922	115452	115858	169323	224946	Continuing	Continuing
Joint Tactical Radio System SSN AA0702 (JTRS)	1535	0	0	0	0	0	0	0	0	1535
JTRS Ground Domain Integration PE 654805/615 (JTRS)	195047	97570	230330	197878	14465	2590	0	0	0	737880
Army Data Distribution System (Data Radio) SSN BU1400 (JTRS)	70983	40606	34837	2225	1494	3252	0	0	0	153397
JPALS RDTE (FY 04 & Prior) PE 030511A	935	0	0	0	0	0	0	0	0	935

C. Acquisition Strategy: This project is comprised of multiple systems:

1) JTRS - Initial JTRS A-Kit hardware/software development, installation and integration will be procured via host platform vendor.

House Report 108-553 stated "Of the funds requested in the amended budget request for fiscal year 2005, the Committee directs that funds originally requested for ICNIA shall be used only to continue this program, and for no other purpose." Based on this report, ICNIA funding for FY05 has been reflected in this submission.

2) IDM - The nonrecurring engineering and software development to integrate the open systems architecture IDM solution with database-to-database exchange into the MCAP and CAAS processors will be performed via sole source contractor. The software will be ported into the MCAP and CAAS processors, eliminating the requirement for a B-Kit.

3) JPALS- The JPALS acquisition strategy is to complete the current risk reduction effort and Technology Development (TD) phase which will lead to the development of a JPALS combined land, sea, and avionics specification. Using this specification, a JPALS prototype ground station will be tested in both benign and jamming environments prior to MS B in Apr 06. JPALS functionality will be integrated on a GPS card which will be inserted into the Army's existing avionics. JPALS integration will be synchronized with the integration of M Code into Army platforms in the FY 2012 timeframe.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604201A - AIRCRAFT AVIONICS

PROJECT
C97

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . A-Kit AH-64D , CH-47F, and UH/HH-60M/Q R&D Contracts (JTRS) (Design Analysis & SDD)	Various	Boeing, AZ, PA, & CA;Rockwell/Collins, IA;Sikorsky, CT;ARINC, MD;ICI, VA	54108	49147	1-3Q	8732	1-3Q	11232	1-3Q	Continue	Continue	Continue
b . Systems Engineering, Logistics Efforts (JTRS)	MIPR	Various	12965	3203	1-3Q	3363	1-3Q	3531	1-3Q	Continue	Continue	Continue
c . Dev/Integration of an open system architecture IDM solution and FCS database-to-database exchange	SS/CPFF	ICI, McLean, VA	0	1729	3-4Q	4372	1-3Q	12073	1-3Q	Continue	Continue	Continue
Subtotal:			67073	54079		16467		26836		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604201A - AIRCRAFT AVIONICS

PROJECT
C97

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ICNIA compliance to JTRS Requirements (JTRS)	C/CPFF	Northrup Grumman	14466	4000	1-3Q	0		0		0	18466	18466
b . Antenna Effort (JTRS)	C/CPFF	JVYS, Alabama; Lear Siegler Services, Inc., Maryland	3425	1806	1-3Q	1896	1-3Q	1991	1-3Q	Continue	Continue	Continue
c . System engineering, logistics, and technical support(JPALS)	MIPR	Various	0	1774	1-3Q	1780	1-3Q	1817	1-3Q	Continue	Continue	Continue
d . Complete Systems Engineering and Logistics Efforts (IDM)	MIPR	Various	0	187	2-4Q	96	1-3Q	257	1-3Q	Continue	Continue	Continue
Subtotal:			17891	7767		3772		4065		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604201A - AIRCRAFT AVIONICS

PROJECT
C97

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test and Evaluation (JTRS)	MIPR	Various	542	1912	1-3Q	2095	1-3Q	2200	1-3Q	Continue	Continue	Continue
Subtotal:			542	1912		2095		2200		Continue	Continue	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Spt (IDM)	MIPR	AMCOM, AL/PM AME, AL	1245	0		143	1-4Q	517	1-4Q	Continue	Continue	Continue
b . PM Spt (JTRS)	MIPR	AMCOM, AL/PM AME, AL	4475	2166	1-4Q	877	1-4Q	1000	1-4Q	Continue	Continue	Continue
c . PM Spt (JPALS)	MIPR	AMCOM, AL/PM AME, AL	0	39	1-4Q	97	1-4Q	96	1-4Q	Continue	Continue	Continue
Subtotal:			5720	2205		1117		1613		Continue	Continue	Continue

Project Total Cost:			91226	65963		23451		34714		Continue	Continue	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604201A - AIRCRAFT AVIONICS

PROJECT
C97

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Continue A kit dev, begin sys testing for AH-64D, CH-47F, and UH-60M (JTRS)	JTRS A kit Dev & Sys Test																															
Continue Sys Engr, Log, and PM admin spt (JTRS)	JTRS Sys Engr, Log, and PM admin																															
Continue ICNIA compliance w/JTRS SCA (JTRS)	ICNIA Compliance w/JTRS																															
Antenna Effort (JTRS)	Antenna Effort																															
Continue Test & Evaluation Support (JTRS)	JTRS T&E Support																															
(1) JPALS MS B System Design and Development (JPALS)	<div style="text-align: center;">  JPALS MS B </div>																															
Provide PM, sys engr, log, & tech spt (JPALS)	JPALS PM, Sys Engr, Log, Tech Spt																															
Begin Dev/Integration of Open Sys Architecture solution (IDM)	SW Dev/Integration																															
Provide PM Admin, System Eng, and Logistics Support (IDM)	IDM Support																															

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604201A - AIRCRAFT AVIONICS

PROJECT
C97

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Develop JTRS A-Kit and begin system testing for AH-64D, CH-47F, and UH-60M/Q (JTRS)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Continue System Engineering and Logistics Efforts (JTRS)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Complete ICNIA Compliance to JTRS Requirements	1-4Q	1-4Q						
Continue Antenna Effort (JTRS)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
Continue Test and Evaluation Support (JTRS)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Continue Program Management support for the JTRS A-Kit development (JTRS)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Continue system engineering, logistics and technical support (JPALS)		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
PM Support (JPALS)		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Begin Dev/Integration of open sys architecture IDM solution FCS database-to-database exchange (IDM)		3-4Q	1-4Q	1-4Q	1-4Q			
Complete System Engineering and Logistics Spt (IDM)		2-4Q	1-4Q	1-4Q	1-4Q			
Program Management Support (IDM)			1-4Q	1-4Q	1-4Q			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604220A - Armed, Deployable OH-58D

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	43366	13964	0	0	0	0	0	0	59089
538 KIOWA WARRIOR LFTE	0	14366	0	0	0	0	0	0	0	16125
53H ARMED RECONNAISSANCE HELICOPTER (ARH)	0	29000	13964	0	0	0	0	0	0	42964

A. Mission Description and Budget Item Justification: The mission of the ARH is to provide a robust reconnaissance and security capability for the Joint Combined arms air-ground maneuver team. The ARH is a combination of a modified off-the-shelf (OTS) airframe integrated with a non-development item (NDI) mission equipment package (MEP). The ARH will be fielded to support current forces in the Global War on Terror (GWOT) and will possess the growth potential to bridge the capability gaps to Future Combat Force. The ARH will be a direct replacement for the aging OH58D Kiowa Warrior fleet.

The rapidly reconfigurable ARH provides the space, weight, and power to incorporate the MEP, as Mission, Enemy, Terrain, Troops available, Time and Civilian considerations (METT_TC) dictates, for use in High/hot (4K/95°F with growth potential to 6K/95°F) conditions, complex terrain, and urban environments. The MEP provides a robust communications and navigation suite, advanced state-of-the-art sensor assembly, and self-defense armament capability to fight for, collect, and distribute critical information to all members of the Joint air-ground maneuver team. Specifically, the ARH's robust communication suite when combined with the sensors assembly provides real time delivery of actionable combat information to the joint force while enabling precision employment of Joint sensors and fires.

The ARH will provide a highly deployable, reconnaissance and security capability that will employ immediately upon arrival into theater. The platform will address the capability gaps of interoperability, survivability, versatility, agility, lethality, and sustainability to ensure interoperability over extended ranges, enhance mission effectiveness throughout the operational environment, and focus on system survivability against threats operating in the contemporary operational environment, while reducing the logistical burden on the tactical unit. The fundamental purpose of ARH is to perform reconnaissance and to provide security in combat operations. In doing so, it improves the commander's ability to maneuver and concentrate superior combat power against the enemy at the decisive time and place.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604220A - Armed, Deployable OH-58D

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	20000	0	0
Current Budget (FY 2006/2007 PB)	43366	13964	0
Total Adjustments	23366	13964	0
Net of Program/Database Changes			
Congressional Program Reductions	-5221		
Congressional Rescissions			
Congressional Increases			
Reprogrammings	29000		
SBIR/STTR Transfer	-413		
Adjustments to Budget Years		13964	

Change Summary Explanation: Funding - FY 05 & 06: Increases made in support of the Armed Reconnaissance Helicopter (FY 05 +29000; FY 06 +13964).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604220A - Armed, Deployable OH-58D

PROJECT
538

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
538 KIOWA WARRIOR LFTE	0	14366	0	0	0	0	0	0	0	16125

A. Mission Description and Budget Item Justification: The mission of the ARH is to provide a robust reconnaissance and security capability for the Joint Combined arms air-ground maneuver team. The ARH is a combination of a modified off-the-shelf (OTS) airframe integrated with a non-development item (NDI) mission equipment package (MEP). The ARH will be fielded to support current forces in the Global War on Terror (GWOT) and will possess the growth potential to bridge the capability gaps to Future Combat Force. The ARH will be a direct replacement for the aging OH58D Kiowa Warrior fleet.

The rapidly reconfigurable ARH provides the space, weight, and power to incorporate the MEP, as Mission, Enemy, Terrain, Troops available, Time and Civilian considerations (METT_TC) dictates, for use in High/hot (4K/95°F with growth potential to 6K/95°F) conditions, complex terrain, and urban environments. The MEP provides a robust communications and navigation suite, advanced state-of-the-art sensor assembly, and self-defense armament capability to fight for, collect, and distribute critical information to all members of the Joint air-ground maneuver team. Specifically, the ARH's robust communication suite when combined with the sensors assembly provides real time delivery of actionable combat information to the joint force while enabling precision employment of Joint sensors and fires.

The ARH will provide a highly deployable, reconnaissance and security capability that will employ immediately upon arrival into theater. The platform will address the capability gaps of interoperability, survivability, versatility, agility, lethality, and sustainability to ensure interoperability over extended ranges, enhance mission effectiveness throughout the operational environment, and focus on system survivability against threats operating in the contemporary operational environment, while reducing the logistical burden on the tactical unit. The fundamental purpose of ARH is to perform reconnaissance and to provide security in combat operations. In doing so, it improves the commander's ability to maneuver and concentrate superior combat power against the enemy at the decisive time and place.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Program support for Milestone review preparation & source selection.	0	3202	0	0
Aircraft subsystem integration and testing efforts.	0	10667	0	0
Operational Testing and Support	0	497	0	0
Totals	0	14366	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604220A - Armed, Deployable OH-58D

PROJECT
538

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
A04203 -KW Replacement	0	0	70000	198845	399164	579039	555045	555597	0	2357690

C. Acquisition Strategy: Armed Reconnaissance Helicopter (ARH) is a new start program with milestone preparation, source selection, contract award, and SDD activities planned in FY 05.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604220A - Armed, Deployable OH-58D

PROJECT
538

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Aircraft Subsystem Integration and Testing Efforts	Cost Plus Incentive Fee	Pending Source Selection	0	10667	3Q	0		0		0	10667	0
Subtotal:			0	10667		0		0		0	10667	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604220A - Armed, Deployable OH-58D

PROJECT
538

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Operational Testing and Support	MIPR	Various Activities	0	497	1-3Q	0		0		0	497	0
Subtotal:			0	497		0		0		0	497	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Support for Milestone Review Preparation & Source Selection	Various	PMO ARH, Matrix, Other Government Agencies.	0	3202	1-4Q	0		0		0	3202	0
Subtotal:			0	3202		0		0		0	3202	0

Project Total Cost:			0	14366		0		0		0	14366	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604220A - Armed, Deployable OH-58D

PROJECT
53H

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
53H ARMED RECONNAISSANCE HELICOPTER (ARH)	0	29000	13964	0	0	0	0	0	0	42964

A. Mission Description and Budget Item Justification: The mission of the ARH is to provide a robust reconnaissance and security capability for the Joint Combined arms air-ground maneuver team. The ARH is a combination of a modified off-the-shelf (OTS) airframe integrated with a non-development item (NDI) mission equipment package (MEP). The ARH will be fielded to support current forces in the Global War on Terror (GWOT) and will possess the growth potential to bridge the capability gaps to Future Combat Force. The ARH will be a direct replacement for the aging OH58D Kiowa Warrior fleet.

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The ARH will provide a highly deployable, reconnaissance and security capability that will employ immediately upon arrival into theater. The platform will address the capability gaps of interoperability, survivability, versatility, agility, lethality, and sustainability to ensure interoperability over extended ranges, enhance mission effectiveness throughout the operational environment, and focus on system survivability against threats operating in the contemporary operational environment, while reducing the logistical burden on the tactical unit. The fundamental purpose of ARH is to perform reconnaissance and to provide security in combat operations. In doing so, it improves the commander's ability to maneuver and concentrate superior combat power against the enemy at the decisive time and place.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Program Support for Milestone Review Preparation & Source Selection	0	6464	5271	0
Aircraft Subsystem Integration and Testing Efforts	0	21533	6443	0
Operational Testing and Support	0	1003	2250	0
Totals	0	29000	13964	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604220A - Armed, Deployable OH-58D

PROJECT
53H

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
A04203 HELICOPTER, OBSERVATION, Kiowa Warrior Replacement	0	0	70000	198845	399164	579039	555045	555597	0	2357690

C. Acquisition Strategy: The Armed Reconnaissance Helicopter (ARH) program is a new start program. A MS B review is scheduled for June 2005. A MS C review for an LRIP decision is scheduled in FY06.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604220A - Armed, Deployable OH-58D

PROJECT
53H

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Aircraft Subsystem Integration and Testing Efforts	Cost Plus Incentive Fee	Pending Source Selection	0	21533	3Q	6443	1-3Q	0		0	27976	0
Subtotal:			0	21533		6443		0		0	27976	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604220A - Armed, Deployable OH-58D

PROJECT
53H

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Operational Testing and Support	MIPR	Various Activities	0	1003	1-3Q	2250	1-3Q	0		0	3253	0
Subtotal:			0	1003		2250		0		0	3253	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Support for Milestone Review Preparation & Source Selection	Various	PMO ARH, Matrix, Other Government Agencies	0	6464	1-4Q	5271	1-4Q	0		0	11735	0
Subtotal:			0	6464		5271		0		0	11735	0

Project Total Cost:			0	29000		13964		0		0	42964	0
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Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604220A - Armed, Deployable OH-58D

PROJECT
53H

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone B		3Q						
Milestone C			4Q					
Full Rate Production (FRP)					3Q			
First Unit Equipped (FUE)					4Q			
System Development and Demonstration (SDD)/Testing		3-4Q	1-4Q	1-4Q	1-2Q			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	31715	16515	32179	36032	32642	29525	26068	27612	0	270579
665 A/C SURV EQUIP DEV	0	4207	7341	4032	4035	4033	5090	5595	0	43634
L12 SIGNALS WARFARE DEVELOPMENT (TIARA)	21261	2490	11365	14462	10522	10924	5090	5087	0	106751
L15 ARAT-TSS	2157	1341	1255	1277	1834	1897	2036	2034	0	15936
L16 TROJAN DEVELOPMENT	1409	1443	1552	1583	1605	1638	1677	1718	0	13960
L20 ATIRCM/CMWS	6888	7034	10666	14678	14646	11033	12175	13178	0	90298

A. Mission Description and Budget Item Justification: This program element encompasses engineering and manufacturing development for tactical electronic warfare (EW), signals warfare (SW), aircraft survivability equipment (ASE), battlefield deception, rapid software reprogramming and protection of personnel and equipment from hostile artillery. EW encompasses the development of tactical EW equipment and systems mounted in both ground and air vehicles. The systems under this program provide the Army with the capability to degrade or deny hostile forces the effective use of their communications, countermortar/counterbattery radars, surveillance radars, infrared/optical battlefield surveillance systems and electronically fused munitions. Existing Army EW systems must be replaced or upgraded to maintain their capability in the face of threats. This program element satisfies requirements for brigade, division, corps and higher commanders to conduct electronic warfare to meet tactical and Special Electronic Mission Aircraft (SEMA), attack/scout, and assault/cargo mission requirements. The Prophet program provides for the development of multifunction ground based and airborne intelligence and electronic warfare systems. Trojan will complete Proof-of-Principle R&D for specific applications in advanced threat signals processing, prototype software upgrades, high frequency (HF) algorithms for compact antenna array technology (CAAT), search and acquisition capabilities for unattended signal collectors, and new digital intelligence collection, processing and dissemination technology. The ARAT Project will develop, test and equip an Army-wide infrastructure capable of rapidly reprogramming electronic combat software embedded in offensive and defensive weapon systems.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	16879	32315	35477
Current Budget (FY 2006/2007 PB)	16515	32179	36032
Total Adjustments	-364	-136	555
Net of Program/Database Changes			
Congressional Program Reductions	-243		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-121		
Adjustments to Budget Years		-136	555

FY2006 funds realigned to higher priority requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
665

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
665 A/C SURV EQUIP DEV	0	4207	7341	4032	4035	4033	5090	5595	0	43634

A. Mission Description and Budget Item Justification: The objective of the Aircraft Survivability Equipment Development project is to develop the Suite of Radio Frequency Countermeasures (SIRFC) system. The SIRFC Radar Warning Receiver (RWR) increases aircrew situational awareness by detecting and identifying radio frequency (RF) signals associated with enemy threat radar systems. The SIRFC Jammer provides electronic countermeasures (ECM) to reduce the ability of threat air defense systems to track the host platform. The A-Kit is the mounting brackets, installation hardware, wiring, and cabling necessary to interface the SIRFC B-Kit with the host platform. The B-Kit for RWR includes receive antennas, amplifier/convertor circuitry, and the digital receiver/processor. The jammer B-Kit includes all the RWR Line Replaceable Units and a transmitter, switching circuitry, and transmit antennas.

The Army SIRFC program integrates and installs the SIRFC variant onto Army Aviation platforms. This funding line develops an upgrade to the SIRFC variant managed by Technology Applications Program Office (TAPO) for Special Operations Aircraft (SOA). The MH-47 and MH-60 SIRFC variants will be upgraded to implement a digital receiver into the Radar Warning Receiver (RWR). This developmental upgrade improves performance, reduces weight while lowering the recurring cost. The capability for incorporating jamming functionality will be retained. SOA will upgrade to the digital receiver as part of TAPO's Pre-Planned Product Improvement (P3I) program.

FY2006/2007 funding continues the development and testing of the digital receiver.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
In-house and program management administration	0	846	860	876
Product Development (digital receiver)	0	3361	2581	556
Testing (Qualification, Chamber, etc.)	0	0	3900	2600
Totals	0	4207	7341	4032

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
665

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
AZ3511 SIRFC	0	0	3651	21261	36501	24114	48908	49020	Continuing	Continuing

C. Acquisition Strategy: The Army SIRFC Program is managed by Project Manager, Aviation Electronic Systems (PM AES) for integration and installation on Army Aviation platforms. The Army is developing an upgrade to the SIRFC variant managed by Technology Applications Program Office (TAPO) for Special Operations Aircraft (SOA) MH-47 and MH-60, by implementing a digital receiver into the Radar Warning Receiver (RWR). Development of the digital receiver RWR will leverage off existing technologies. SOA will upgrade to the digital receiver as part of TAPO's Pre-Planned Product Improvement (P3I) program.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
665

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Digital Receiver		Multiple	0	3361	1Q	2581	1Q	556	1Q	0	6498	Continue
Subtotal:			0	3361		2581		556		0	6498	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	Huntsville, AL	0	762	1Q	775	1Q	789	1Q	0	2326	0
b . Contractor Support	C/FFP	Huntsville, AL	0	77	1Q	78	1Q	80	1Q	0	235	0
Subtotal:			0	839		853		869		0	2561	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
665

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test and Evaluation	MIPR	ATEC, Alexandria, VA	0	0	1-4Q	1500	1-4Q	1000	1-4Q	0	2500	0
b . Flight Test/Range Support	MIPR	ECR, Naval Air Warfare Center-WPNS, China Lake, CA	0	0	1-4Q	1900	1-4Q	1000	1-4Q	0	2900	0
c . Chamber/E3 Test and Support	MIPR	ACETEF, Naval Air Warfare Center-AC, Patuxent River, MD	0	0	1-4Q	500	1-4Q	600	1-4Q	0	1100	0
Subtotal:			0	0		3900		2600		0	6500	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management	In-House	PM AES	0	7	1-4Q	7	1-4Q	7	1-4Q	0	21	1193
Subtotal:			0	7		7		7		0	21	1193

Project Total Cost:			0	4207		7341		4032		0	15580	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
665

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Hardware Development																																
Design/Integration of aircraft interfaces																																
(1) Preliminary Design Review (PDR) B-Kit (prime equipment)																																
(2) PDR for A-Kit (aircraft interfaces)													▲ 2																			
(3) Critical Design Review (CDR) for B-Kit (prime equipment)													▲ 3																			
(4) CDR for A- Kit (aircraft interfaces)																	▲ 4															
(5) Airworthiness Review (AWR)													▲ 5																			
Flight Test / Operational Testing (IOT&E)																	■															
(6) Army Test and Evaluation Command; System Evaluation Report (ATEC SER)																					▲ 6											
(7) Milestone C (MS C) : Production and Deployment																									▲ 7							

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
665

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Conduct RWR Development/Qualification/Testing		1-4Q	1-4Q					
Incremental Product Improvements				1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
DT/OT				1-2Q				
IOT&E				3-4Q				
Milestone C (MS C)				4Q				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L12

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L12 SIGNALS WARFARE DEVELOPMENT (TIARA)	21261	2490	11365	14462	10522	10924	5090	5087	0	106751

A. Mission Description and Budget Item Justification: Prophet's primary mission is providing 24-hour Situation Development and Information Superiority to the supported maneuver brigade to enable the most effective engagement of enemy forces. Prophet is an integral part of the Army Transformation, providing near real time (NRT) information to the Brigade Commander within his combat decision cycle. It is the tactical commander's sole organic ground-based COMINT/EW system for the Division, Stryker Brigade Combat Team (SBCT) and Armored Cavalry Regiments (ACR). Prophet provides the tactical commander with next generation Signals Intelligence/Electronic Warfare (SIGINT/EW) - radio detection finding capability. Prophet replaced the division level Trailblazer and Teammate legacy SIGINT systems in Block I and will replace the TrafficJam in Block II. Prophet stationary and on-the-move direction finding information develops battlespace visualization, intelligence preparation of the battlefield (IPB) and target development for enemy and gray emitters within radio line-of-sight across the brigade area of responsibility. Block II/III will add Electronic Attack (EA) and an improved signal type detection capability during the System Development and Demonstration (SDD). Additionally, Prophet provides the ability to intercept voice communications data when on board linguists are available. This NRT information, when processed, provides a key component of the fused intelligence common operating picture (COP). Initially Prophet will interface with the maneuver brigade Analysis and Control Team's (ACT) All Source Analysis System (ASAS)-Remote Work Stations (ASAS-RWS) via Prophet Control. Prophet Control's functionality is planned to be integrated onto the Distributed Common Ground Station-Army (DCGS-A) platform. The ACT will forward the gathered information to the division and armored cavalry Analysis and Control Element's (ACE) ASAS. Prophet enables the Brigade Commander to detect signals while the vehicle is moving, a first for a Tactical SIGINT system. Prophet is being developed in a user prioritized block approach: Block I - Electronic Support (ES) (COMINT), Block II - Electronic Attack (EA), Block III - Modern Signals. Planned enhancements to Block III will be advanced receivers. Prophet Block II/III functionality will be resident within FCS. That technology and Tactics, Techniques and Procedures (TTPs) will be leveraged.

FY2006/2007 Funds initiate and support Prophet P3I enhancements as well as Block II/III IOT&E.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Prophet Block II/III System Development and Demonstration (SDD)	15910	973	0	0
Prepare for and conduct Prophet Block II/III LUT/DT/IOT&E	5126	1117	2512	2398
Prophet P3I Enhancements	0	0	8853	12064
Prepare for Prophet Block II/III LRIP MS C	225	400	0	0

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Accomplishments/Planned Program (continued)

								FY 2004	FY 2005	FY 2006	FY 2007
Totals								21261	2490	11365	14462
<u>B. Other Program Funding Summary</u>		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
BZ7326 Prophet Ground (TIARA)		10794	25129	13006	25532	30511	27107	22070	9822	Continuing	Continuing
PE 030885G Defense Cryptological Program for PROPHET		3774	4015	4253	3039	6910	6905	7000	7000	Continuing	Continuing
BZ9751 Special Purpose Systems (TIARA) (Prophet Only)		482	476	488	3765	2316	2402	2570	3087	Continuing	Continuing

C. Acquisition Strategy: The Prophet Acquisition Strategy is structured to optimize system capability while reducing risk and streamlining business and engineering processes. Block I ES (COMINT) Engineering and Manufacturing Development (EMD) was a sole source effort which leveraged off existing COTS equipment. Follow-on Block II (EA) and Block III (Modern Signals) efforts were combined into a single SDD phase following an evolutionary acquisition process. Block II/III SDD was competitively awarded in 2QFY03. Prophet Block II/III P3I efforts will utilize competitive contracting to the maximum extent possible.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prophet Block II/III SDD Contract	C-CPIF	General Dynamics Decision Systems, Scottsdale, AZ	30380	973	1Q	0		0		0	31353	0
b . Prophet Block II/III GFE	FFP	Titan Systems	1768	0		0		0		0	1768	0
c . Prophet Modeling and Simulation	C/T&M	TBD	1000	0		250	1Q	350	1Q	350	1950	0
d . Leviathon Development and Prototyping	CPFF	Sensytech, Newington, VA	963	0		0		0		0	963	0
e . Prophet P3I Contract		TBD	0	0		6971	1Q	10000		21000	37971	0
Subtotal:			34111	973		7221		10350		21350	74005	0

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	CECOM, Fort Monmouth NJ	6907	441	1Q	463	1Q	486	1Q	0	8297	0
b . Contractor Eng & Spt	C/T&M	Sytex Group, Eatontown, NJ	708	29	1Q	0		0		0	737	0
c . Contractor Eng & Spt	C/T&M	CACI, Eatontown, NJ	2425	417	1Q	0		0		0	2842	0
d . TSM/NSTO	MIPR	TSM, Ft Huachuaca, AZ	603	0	1Q	0		0		0	603	250
e . Contractor Eng & Spt	C/T&M	Dynetics, Huntsville, AL	60	0		0		0		0	60	0
f . Contractor Eng & Spt	C/T&M	DSCI, Eatontown, NJ	0	109	1Q	114	1Q	120	1Q	0	343	0
g . Contractor Eng & Spt	C/T&M	TBD	0	0		468	1Q	492	1Q	0	960	0
Subtotal:			10703	996		1045		1098		0	13842	250

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prepare for and Conduct Prophet Block II/III DT/IOTE	MIPR	EPG/AEC	5654	0		2512	1Q	2398	1Q	0	10564	0
Subtotal:			5654	0		2512		2398		0	10564	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	In-House	PM, Signals Warfare, Fort Monmouth NJ	5504	521	1-4Q	587	1-4Q	616	1-4Q	0	7228	0
b . Program Support	MIPR	ASPO, Alexandria, VA	204	0		0		0		0	204	0
Subtotal:			5708	521		587		616		0	7432	0

Project Total Cost:			56176	2490		11365		14462		21350	105843	250
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Schedule Profile (R4 Exhibit)

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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
Prophet Block II/III																																								
Block II/III SDD																																	Prophet BI II/III SDD							
Block II/III Test Events																																								
Devel Test and Eval I, LUT																																	DT I				LUT			
(1) MS C/LRIP Decision																																	▲ 1							
Low-Rate Initial Production																																	LRIP							
(2) FUE																																	▲ 2							
Devel Test and Eval II																																	DT II							
(3) IOT&E, (4) FRP Decision																																	▲ 3				▲ 4			
Production and Deployment																																	Production & Deployment							
(5) Prophet P3I	Prophet P3I																																							
Prophet P3I Program																																								

Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Conduct Block II/III DT/LUT		1-2Q						
Milestone C/LRIP Decision for Prophet Block II/III		3Q						
Block II/III LRIP		3-4Q	1-4Q	1-4Q				
First Unit Equipped, Prophet Block II/III		4Q						
Conduct DT Phase II			4Q	1Q				
Conduct IOT&E				2Q				
Block II/III Full Rate Production Decision				4Q				
Block II/III Production and Deployment					1-4Q	1-4Q	1-4Q	1-4Q
Prophet P3I Program			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L15 ARAT-TSS	2157	1341	1255	1277	1834	1897	2036	2034	0	15936

A. Mission Description and Budget Item Justification: The Army Reprogramming Analysis Team (ARAT) Target Sensing System (TSS) supports the tactical Commander by providing timely/rapid reprogramming of any Army supported, joint, allied service, Army Electronic Warfare (EW) Integrated Reprogramming (EWIR) or Measurement Intelligence (MASINT) based target acquisition, target engagement, or vehicle/aircraft survivability equipment (ASE). ARAT provides software changes not readily possible by operator input, to respond to rapid deployments or changes in the threat environment. The ARAT Software Engineering (SE) Project Office coordinates the development of ARAT infrastructure to support the needs of all TSS developers and users; develops the capability to conduct real-time hardware and software technical enhancements of validated threat changes; examines and identifies the best technical approaches for development of field reprogramming capabilities of ATSS with commonality at a desired end-state; supports the developments of flagging models; participates in the operational and developmental test design of ATSS; and supports Service and JCS Reprogramming Exercises.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Engineering Development (TSS Survey): Complete the Survey initiated in FY02 to identify TSS requiring support in Army Battlefield Functional Area (BFAs) with a focus on operational, technical, and intelligence aspects. This would include technical information about the actual TSS and their near and far term support requirements for intelligence collection, flagging, and threat analysis, Mission Data Set (MDS), communications, and filed support.	250	150	150	172
Engineering Development (TSS Survey): Initiate a Target Sensing System (TSS) Survey requiring support in Army Battlefield Functional Area (BFAs) with a focus on operational, technical, and intelligence aspects. This would include technical information about the actual TSS and their near and far term support requirements for intelligence collection, flagging, and threat analysis, Mission Data Set (MDS), communications, and filed support.	0	0	0	0
Intelligence Support (Platform Intelligence Integration): Analyze capability of using data from US Army Aviation Platform systems to increase tactical situational awareness as well as providing additional intelligence collection data. This would include evaluation of system modifications.	350	288	250	250

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Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
Intelligence Support (Platform Intelligence Integration): Building on the work completed in FY02 determine individual platform benefits vs. potential costs to upgrade systems on each Aviation platform. Initiate lab testing of potential system updates to verify the additional benefit and identify intelligence collection methodology to integrate the collected intelligence data onto an intelligence network.	624	246	252	255
Database Support (Flagging Model): Work jointly with the USAF at Kelly AFB, TX to complete the conversion of the current flagging database structure shared by the US Army and USAF flagging models to a more modern database structure. In addition, initiate converting the US Army flagging models over to the new database structure.	0	181	150	130
Database Support (Flagging Model): Work jointly with the USAF at Kelly AFB, TX to initiate the conversion of the current flagging database structure shared by the US Army and USAF flagging models to a more modern database structure.	100	0	0	0
Dissemination (EWOSS/MLV): Complete an upgrade of EWOSS 2000 communications tool for the field user by improving the classified connection capability and integrating all aspects of current MLV software as modules within the basic structure. In addition, develop training aids to facilitate the field user being able to successfully use this software without attending a formal training course.	200	0	0	0
Dissemination (EWOSS/MLV): Using the upgraded EWOSS 2000 software, define and internally alpha test a common MLV system with flexible data protocols to support the associated cables and protocols required for each US Army TSS being reprogrammed. After completing alpha testing, initiate beta testing with field users including the use of the training aids developed in FY02.	100	0	0	0
Engineering Development, Intelligence Support, Database Support, & Dissemination (Common Intel Database): Define requirements for a common intelligence database analysis and MDS tool for use by ARAT-TA (Kelly and Eglin AFBs) and ARAT-SE. The functionality must include common user interface, intelligence inputs, modular threat analysis and MDS generator tools, and output formats to support intelligence reporting, RF scenarios inputs and MDS inputs for EWOSS/MLV to leverage the use of existing tools such as the Major Radar Database (MRDB) as much as practical.	200	200	200	200
Engineering Development, Intelligence Support, Database Support, & Dissemination (Common Intel Database): Using the requirements definition completed in FY02, initiate the development of the common intelligence database analysis and MDS tool. Complete the user interface, database structure, output formats, and placeholders for the internal threat analysis and MDS generator tools.	333	276	253	270
Totals	2157	1341	1255	1277

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B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: The efforts to be funded in this project will require a combination of systems specific and high-tech knowledge. The contractual services portion for the project will be obtained from both the CECOM SEC competitive omnibus and the RDEC High Tech contracts.

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BUDGET ACTIVITY
5 - System Development and Demonstration

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PROJECT
L15

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labor (internal Gov't)	Labor (internal Gov't)	CECOM, Fort Monmouth, NJ	1647	519	1-4Q	480	1-4Q	502	1-4Q	Continue	3148	Continue
b . Travel	Travel	TBD/Various sites	154	60		60	1-4Q	60	1-4Q	Continue	334	Continue
Subtotal:			1801	579		540		562		Continue	3482	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Support (INSCOM Full Spectrum)	Development Support (INSCOM)	TBD/Various sites	1100	265	1-4Q	303	1-4Q	325	1-4Q	Continue	1993	Continue
b . Development Support (CECOM RDEC T&E CECOM SEC Omnibus)	Development Support (CECOM)	TBD/Various sites	1512	186	1-4Q	412	1-4Q	390	1-4Q	Continue	2500	Continue
Subtotal:			2612	451		715		715		Continue	4493	Continue

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labor and ranges	TBD	TBD	500	0		0		0		0	500	0
Subtotal:			500	0		0		0		0	500	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labor (Int and Contact)	TBD	CECOM and INSCOM	1233	311	1-4Q	0		0		Continue	Continue	Continue
Subtotal:			1233	311		0		0		Continue	Continue	Continue

Project Total Cost:			6146	1341		1255		1277		Continue	Continue	Continue
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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L16 TROJAN DEVELOPMENT	1409	1443	1552	1583	1605	1638	1677	1718	0	13960

A. Mission Description and Budget Item Justification: This project is a Tactical Intelligence and Related Activities (TIARA) program. TROJAN RDT&E supports TROJAN Classic XXI (TCXXI) future capabilities to fulfill the Army's need for a worldwide, deployable, remotable, intelligence, surveillance and reconnaissance (ISR) support that can dynamically execute operations from sanctuary-based to deployed assets in theater. In support of the Objective Force and Future Combat System (FCS), TCXXI will provide soldiers with a real-world, hands-on, live and near-real time SIGINT training environment sustaining, maintaining and enhancing their military occupational specialty (MOS) proficiencies and specific target expertise. This operational readiness training will fulfill the Army's larger intelligence training requirement via a secure collaborative architecture.

A key factor for success the Objective Force and FCS will be the ability to collect, process and use information about an adversary while preventing similar information from being disclosed. TROJAN is a combined operational and readiness mission system which uses advanced networking technology to provide seamless rapid radio relay, secure communications to include voice, data, facsimile, and electronic reconnaissance support to U.S. forces throughout the world. TROJAN operations may be easily tailored to fit military intelligence unit training schedules and surged during specific events to involve every aspect of the tactical intelligence collection, processing, analysis and reporting systems. This project engineers, tests and evaluates new digital intelligence collection, processing and dissemination technology using the fielded TROJAN systems, prior to the acquisition of those technologies. As part of the Objective C4ISR Architecture, these capabilities will enable processing and dissemination of real-time intelligence data from various sources to form the intelligence needed to issue orders inside the threat decision cycle. To that end, it is imperative that TROJAN keeps pace with digitization initiatives in order to respond aggressively to the emerging intelligence communication threats

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Integrate and test specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms.	500	500	150	300
Acquire and apply multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput.	0	0	150	100
Develop prototype QRC Receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP and FPGA technologies.	560	693	302	527
Integrate Direction Finding (DF) and geolocation technologies into TROJAN Remote Receiving Groups (RRGs).	349	250	0	400
Develop hardware/software interface for TCXXI system to ONEROOF storage system	0	0	350	0

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Accomplishments/Planned Program (continued)

Develop specialized software enhancements to the TROJAN audio streaming subsystems to improve system redundancy & throughput capacity and system management capabilities; Investigate compression/processing technologies to reduce communications bandwidth requirements for remoted TROJAN systems, including streaming audio technologies.

FY 2004	FY 2005	FY 2006	FY 2007
0	0	600	256
1409	1443	1552	1583

Totals

B. Other Program Funding Summary

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA BA0331 Trojan	6487	5723	6067	7557	7627	7757	7878	8000	0	57096

C. Acquisition Strategy: This Acquisition Strategy for the TROJAN Classic XXI System supported by TROJAN RDT&E is to adapt and leverage from Commercial Off the Shelf (COTS) and Government Off the Shelf (GOTS) products. Additionally leverage off of development by DoD and other Government agencies to the greatest extent possible. TROJAN RDT&E is used to fund the development of enhancing these technologies to meet specific user requirements. The funding for production and fielding of these capabilities are funded under TROJAN BA0331.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Develop Prototype QRC Receiver packages	MIPR	CERDEC I2WD Ft Monmouth	1021	843	2-3Q	302		500		Continue	2666	Continue
b . Develop DF Capabilities for TROJAN RRG	MIPR	CERDEC I2WD Ft Monmouth	250	0	1-2Q	0		400		Continue	650	Continue
c . Investigate Compression /processing technologies	MIPR	CERDEC I2WD Ft Monmouth	938	100		0		0		Continue	1038	Continue
d . Develop specialized software enhancements to TROJAN audio streaming	MIPR	CERDEC I2WD Ft Monmouth	0	0	2-3Q	600		283		0	883	0
e . Develop hardware/software interface to ONEROOF	MIPR	CERDEC I2WD Ft Monmouth	0	0	2-3Q	350		0		0	350	0
Subtotal:			2209	943		1252		1183		Continue	5587	Continue

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Aquire & Apply muliti bandwidth compr Algorithm	MIPR	CECOM I2WD FT Monmouth	500	0		150		100		Continue	750	Continue
Subtotal:			500	0		150		100		Continue	750	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Integrate/test hardware/software	MIPR	CECOM I2WD FT Monmouth	1000	500	2-3Q	150		300		Continue	1950	Continue
b . Operational test/eval of enhanced SIG Processing	MIPR	CECOM I2WD Ft Monmouth	429	0		0		0		Continue	Continue	Continue
Subtotal:			1429	500		150		300		Continue	Continue	Continue

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:												
Project Total Cost:			4138	1443		1552		1583		Continue	Continue	Continue

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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PROJECT
L20

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L20 ATIRCM/CMWS	6888	7034	10666	14678	14646	11033	12175	13178	0	90298

A. Mission Description and Budget Item Justification: The Advanced Threat Infrared Countermeasure (ATIRCM) is a US Army program to develop, test, and integrate defensive infrared (IR) countermeasures capabilities into existing, current generation host platforms for more effective protection against a greater number of IR- guided missile threats than afforded by currently fielded IR countermeasures. The US Army operational requirements concept for IR countermeasure systems is known as the Suite of Integrated Infrared Countermeasures (SIIRCM). It is an integrated warning and countermeasure system to enhance aircraft survivability against IR guided threat missile systems. The core element of the SIIRCM concept is the Advanced Threat Infrared Countermeasure (ATIRCM), Common Missile Warning System (CMWS) Program. The ATIRCM/CMWS, a subsystem to a host aircraft, is an integrated ultraviolet (UV) missile warning system and an IR Lamp/Laser Jamming and Improved Countermeasure Dispenser (ICMD).

The CMWS also functions as a stand-alone system with the capability to detect missiles and provide audible and visual warnings to the pilot(s); and, when installed with the ICMD, activates expendables to provide a degree of protection. ATIRCM/CMWS is the key IR survivability system for Future Force Army aircraft.

The A-Kit is the modification hardware, wiring harness, cable, etc., necessary to install and interface the ATIRCM/CMWS Mission Kit to each platform. The A-Kit ensures the Mission Kit is functionally and physically operational with the host platform.

The Mission Kit consists of the ATIRCM/CMWS which performs the missile detection, false alarm rejection, and missile declaration functions of the system. The Electronic Control Unit (ECU) of the CMWS sends a missile alert signal to on-board avionics and other Aircraft Survivability Equipment (ASE) such as expendable flare dispensers. Threat missiles detected by the CMWS are handed over to the ATIRCM.

FY06-FY07 funding supports continued incremental improvements for jamhead miniaturization and countermeasures against Tier 2 and Tier 3 threats.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Product Development	6888	0	7073	11252
Support Cost	0	0	0	0
Test and Evaluation	0	6807	3293	3126
Management Services	0	227	300	300
Totals	6888	7034	10666	14678

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L20

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
APA, BA 4 AZ3507 ASE Infrared CM	112785	271115	211151	266190	343226	420714	317780	243498	2551068	4737527

C. Acquisition Strategy: The Engineering Manufacturing Development (EMD) contract competitively awarded in FY 1995. The Army Acquisition Executive (AAE) approved the Limited Procurement Urgent (LPU) for acquisition of the CMWS capability for Special Operations Force (SOF) aircraft in March 2002. An Army Systems Acquisition Review Council (ASARC) resulted in a Milestone C Low Rate Initial Production (LRIP) decision in November 2003, approving the program's entry into LRIP. The LRIP procurement acquisition strategy is sole source, fixed price procurement. Funding supports an acquisition strategy of buying CMWS separately from ATIRCM, while installing A-kits on all modernized aircraft. The ATIRCM Full Rate Production (FRP) decision is scheduled to follow the Initial Operational Test and Evaluation (IOTE) with production continuing through FY17. The current production contract is a sole source, fixed-priced, five year, Indefinite Delivery, Indefinite Quantity (IDIQ) contract to BAE Systems.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . AIRCMM	C/CPIF	Thiokol, Brigham City, UT	8451	0		0		0		0	8451	1563
b . ATIRCM EMD Basic Contract	C/CPAF	BAE Systems, Nashua, NH	23574	0		0		0		0	23574	171784
c . ATIRCM T&M Efforts-Reliability Demonstration Testing	C/CPFF	BAE Systems, Nashua, NH	40412	0		0		0		0	40412	40412
d . ATIRCM 6 Lot Test Assets	SS/CPFF	BAE Systems, Nashua, NH	14640	0		0		0		0	14640	14640
e . ATIRCM	C/CPFF	Cowley, Chantilly, VA	100	0		0		0		0	100	100
f . Test Facility	C/CPFF	Amherst, Huntsville, AL	1300	0		0		0		0	1300	1300
g . Other P3I Efforts (Jamhead Miniaturization)	Various	Various	1062	0		3000	2Q	8252	2Q	15392	27706	27706
h . Tier 2/3 Threat Upgrades			0	0		4073	2Q	3000	2Q	20515	27588	27588
Subtotal:			89539	0		7073		11252		35907	143771	285093

Remarks: FY99 & Prior funding in Project 665

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Modeling & Simulation Contractor Support	C/FFP	Huntsville, AL	600	0		0		0		0	600	600
b . Contractor Support	C/FFP	Huntsville, AL	9554	0		0		0		0	9554	9554
c . Matrix Support	MIPR	CECOM, Ft Monmouth NJ; AMCOM, Huntsville AL	3055	0		0		0		0	3055	0
Subtotal:			13209	0		0		0		0	13209	10154

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Technical Support for User Tests	MIPR	Electronic Proving Ground, Ft. Huachuca, AZ	7548	0		1000	2Q	1000	2Q	4000	13548	0
b . Operational Test Command User Test	MIPR	ATEC and Others	9616	6807	3-4Q	0		0		0	16423	0
c . Test Support	MIPR	ATTC, Fort Rucker, AL	2504	0		0		0		0	2504	0
d . O2K Contractor Test Support	C/FFP	Neer/Thomsen, Huntsville, AL	2663	0		0		0		0	2663	2663

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
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III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
e . Test Support	C/FFP	Westar, Huntsville, AL	559	0		0		0		0	559	559
f . Test Support With Live Missile Firing. Data Gathering and System Evaluation	MIPR	PM, Instrumentation Targets and Threat Simulators (ITTS) and 46th Test Wing, Eglin AFB, FL	2800	0		1293	2Q	2126	2Q	2925	9144	0
g . Test Support	MIPR	RTTC, Redstone Arsenal, AL	1120	0		0		0		0	1120	0
h . Other	MIPR		105	0		0		0		3000	3105	0
i . Simulation And Evaluation	MIPR	TSMO, Redstone Arsenal, AL	0	0		1000	1-4Q	0		4000	5000	0
Subtotal:			26915	6807		3293		3126		13925	54066	3222

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management	In house support	PM AES, Huntsville, AL	5336	227	1-4Q	300	1-4Q	300	1-4Q	1200	7363	0
b . Congressional Adjustments			0	0		0		0		0	0	0
Subtotal:			5336	227		300		300		1200	7363	0

Project Total Cost:			134999	7034		10666		14678		51032	218409	298469
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L20

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) LRIP contract award	▲ 1				▲ 2																											
(2) First Unit Equipped - CMWS									▲ 2				FUE-CMWS																			
Incremental Improvements (includes Jamhead Miniaturization)									■																							
Integration Testing Aerial Cable Range-2					■				IT (ACR-2)																							
IOT&E: Initial Operational Test and Evaluation ATIRCM/CMWS									■																							
(3) First Unit Equipped - ATIRCM													▲ 3																			
(4) ATIRCM - Full Rate Production Decision																	▲ 4															

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
LRIP Contract Award	2Q							
Incremental Improvements (includes Jamhead Miniaturization)			2-4Q	2-4Q	2-4Q	2-4Q		
Integration Testing Aerial Cable Range-2		1Q						
IOT&E: Initial Operational Test and Evaluation ATIRCM/CMWS			2-3Q					
First Unit Equipped - ATIRCM			3Q					
ATIRCM - Full Rate Production Decision			4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604280A - Joint Tactical Radio System						PROJECT 162		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
162 JOINT TACTICAL RADIO SYSTEM	128611	117259	156665	110951	80991	35304	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification: -The mission of the Joint Tactical Radio System (JTRS) program is to provide to the Department of Defense software programmable, reconfigurable digital radio systems to meet Joint Vision 2010/2020 requirements for interoperability, flexibility, adaptability, and information exchange. The program will acquire a family of affordable, scaleable, high-capacity, interoperable Line of Sight (LOS) and Beyond Line of Sight (BLOS) radios to support simultaneous networked voice, data, and video transmissions with low probability of intercept. The program will provide operational forces with an upgraded interoperable communications capability for improved battlespace management and increased warfighter effectiveness. Also, JTRS will contribute to Homeland Security and Defense, providing communications interoperability among civil and local agencies, particularly First Response units. Additionally, interoperability with allied and coalition partners is pursued through international cooperative efforts, including a signed US-Japan Memorandum Of Understanding (MOU) and the signed US-UK Project Arrangement. A Project Agreement with Sweden was signed December 20, 2004. Discussions with Canada, Australia, France, Turkey and within other NATO countries are ongoing.

The JTRS program is a distributed acquisition effort, with acquisition responsibilities divided among Service acquisition agencies. The Joint Program Office (JPO) is responsible for (1) the overall management and oversight of the JTRS program, (2) development, validation, and evolution of a common JTRS Software Communications Architecture (SCA), (3) development, evolution and maintenance of waveform software applications, (4) development of software cryptographic algorithms and cryptographic equipment applications, and (5) testing and certification of JTRS hardware and software products and (6) JTRS networking and network management software components. Service acquisition agencies are responsible for acquiring and fielding host radio hardware, integrating waveform software applications to their respective hosts, and integrating JTRS into platforms to meet specific warfighter needs. This approach promotes commonality, jointness and interoperability, providing cost savings through maximization of software code porting and reuse, technology insertion, and common solutions, while allowing flexibility to meet unique requirements. The Army is the Executive Service for the joint program.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Maintain, evolve and provide configuration management of the SCA.	1035	1035	1035	1035
Continue acquisition of required waveforms including development of complex waveforms, Cluster support and other waveform related activities. Continue development of crypto algorithm software and other security related activities.	78909	77630	128124	82594
Hardware and software waveform certification process (SCA compliance testing) to meet program requirements.	9414	11636	10477	10080

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604280A - Joint Tactical Radio System	PROJECT 162
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Accomplishments/Planned Program B(continued)	FY 2004	FY 2005	FY 2006	FY 2007
Manage and transition Joint Task Force WARNET.	23000	11000	0	0
Joint Program Office (JPO) technical support, including waveform development, system engineering, spectrum allocation and approval for use, systems security engineering and problem resolution and support of Software Communications Architecture (SCA) activities. Provide technical guidance to Service Program Management Offices (PMOs). Provide oversight for all DoD radio acquisitions to ensure JTRS interoperability.	9574	9843	10112	10415
JPO program support, including administration, program management, international cooperative efforts, legal, contracting, budget execution and cost estimating activities.	6679	6115	6917	6827
Totals	128611	117259	156665	110951

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	121400	71221	57233
Current Budget (FY 2006/2007 PB)	117259	156665	110951
Total Adjustments	-4141	85444	53718
Net of Program/Database Changes			
Congressional Program Reductions	-1783		
Congressional Rescissions			
Congressional Increases	1000		
Reprogrammings			
SBIR/STTR Transfer	-3358		
Adjustments to Budget Years		85444	53718

Change Summary Explanation: Funding: FY 06/07 - Funding increases for new waveform requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604280A - Joint Tactical Radio System

PROJECT
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C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0604805A C3 Systems - Eng Dev; project 615, JTRS Ground Domain Integ (CI 1)	170175	97570	230330	197878	14465	2590	0	0	Continue	Continue
OPA, ARMY, JTRS CLUSTER 1, B90100*	0	109137	0	0	104520	178378	236129	275234	Continue	Continue
RDTE, 0604201A Aircraft Avionics (JTRS) (Cluster 1)	47155	66964	57629	26748	35794	23616	11071	13615	Continue	Continue
APA, JTRS A-Kit Procurement AA0702 (CI 1)	0	0	19058	61545	55083	66189	75602	76310	548100	901887
RDTE, 0604805A C3 Systems - Eng Dev; project 61A, JTRS Cluster 5 Dev	0	96378	144654	111533	54293	19293	9761	8193	0	444105

D. Acquisition Strategy: The JTRS Joint Program Office (JPO) is responsible for common core activities including developing, maintaining, and evolving the JTRS open standards architecture, providing current waveforms to operate on JTRS architecture compliant hardware, and providing a certifying test for hardware/software compliance.

The JTRS JPO is developing Waveforms and Cryptographic Equipment applications (CEAs) for use within the JTRS community.

CEAs will be developed and maintained by the module developer under contract to the JTRS Joint Program Office. Three year IDIQ Contracts were awarded to two vendors in 2002. FY-05 budget supports continued development and NSA evaluation of these software crypto libraries. To use CEAs, additional application-specific code must be written for the cryptographic module to meet embedding requirements. Additional software, located on processors external to the programmable cryptographic module, may also be required.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604280A - Joint Tactical Radio System

PROJECT
162

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Architecture Development and Validation; Maintain, Evolve and Provide CM Mgmt of SCA	Various	Various	64839	1035	2Q	1035	2Q	1035	2Q	Continue	67944	Continue
b . Waveform Development; Crypto S/W; Waveform Sustainment Engineering	Various	Various	184056	73791	3-4Q	124169	1-2Q	78521	1-2Q	Continue	460537	Continue
c . Certification (SCA Compliance Testing)	Various	Various	36180	11636	1-4Q	10477	1-2Q	10080	1-2Q	Continue	68373	Continue
d . Technology Advancement/Problem Resolution	Various	Various	8260	0		0		0		0	8260	0
e . JTF WARNET	Various	Various	23000	11000	2-3Q	0		0		0	34000	0
Subtotal:			316335	97462		135681		89636		Continue	639114	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604280A - Joint Tactical Radio System

PROJECT
162

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . FFRDC - MITRE and Other contracted Technical Support	FFP	Various	38266	9843	1-2Q	10112	1-2Q	10415	1-2Q	Continue	68636	Continue
Subtotal:			38266	9843		10112		10415		Continue	68636	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . N/A*	N/A	N/A	0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

Remarks: *System and operational testing performed by the Services; funded in Service appropriations.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604280A - Joint Tactical Radio System	PROJECT 162
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Support	Various	Various	29400	9954	1-2Q	10872	1-2Q	10900	1-2Q	Continue	61126	Continue
Subtotal:			29400	9954		10872		10900		Continue	61126	Continue

Project Total Cost:			384001	117259		156665		110951		Continue	768876	Continue
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Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604280A - Joint Tactical Radio System

PROJECT
162

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Maintain, Evolve and Provide Configuration Management of SCA	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
Address Technology Advancement Issues and Problem Resolution	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
Award JPO Waveform Contracts	3Q	4Q	2Q	2Q				
Obtain Milestone C Approval				1Q				
Acquire ORD Waveforms and Cryptographic Algorithms	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
JTRS Technology Lab (JTeL) Initial Operational Capability (IOC)								
Provide Certification of JTRS SCA Compliance for Acquired Systems and Waveforms.	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
DAB Program Review		2Q						
Manage and transition JTF WARNET	1-4Q	1-4Q						
JTRS Technology Lab (JTeL) Full Operational Capability (FOC)		1Q						

NOTE: All milestones scheduled through 1QFY2004 have been accomplished.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604321A - ALL SOURCE ANALYSIS SYSTEM

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	19258	6605	7973	6897	5341	5382	6290	6452	Continuing	19519
B19 ASAS EVOLUTIONARY ACQ (TIARA)	17229	5371	6720	3340	3380	3357	3322	3283	Continuing	0
B41 CI/HUMINT SOFTWARE PRODUCTS (TIARA)	2029	915	931	3228	1632	1697	2968	3169	0	18891
B44 ASAS TADSS (TIARA)	0	196	197	202	202	202	0	0	Continuing	0
B49 CHIMS TADSS (TIARA)	0	123	125	127	127	126	0	0	0	628

A. Mission Description and Budget Item Justification: The All Source Analysis System (ASAS) is a ground based, mobile, command and control, intelligence processing system that provides tactical commanders a common view of the battlefield and a means for gaining a timely and comprehensive understanding of enemy force deployments, capabilities, and potential courses of action. ASAS provides automated support to the combat commander in the areas of intelligence, surveillance, reconnaissance, collection management, all-source fusion (signals intelligence, imagery intelligence, human intelligence, open source intelligence, and measurements and signatures intelligence), battlefield visualization, target development and situation analysis, and multi-source processing, intelligence reporting/collaboration, electronic warfare/countermeasures, and operational security as well as "digitized Army" automation support. ASAS is providing incremental evolutionary software for military intelligence operations. Variants of ASAS are found at all echelons in the Army, from theater down to battalion, enabling the rapid dissemination of the all-source fusion picture of the current threat to forward combat maneuver battalions. The system is the Army intelligence interface to the warfighter Army Battle Command System (ABCS) and to the Joint Global Command and Control System (GCCS), and provides the automated ground threat picture to the joint Common Operational Picture (COP). The ASAS system is interoperable with national military intelligence database standards and the Defense Information Infrastructure (DII)/Common Operating Environment (COE) aka Network Centric Enterprise Services (NCES). ASAS reliance on commercial-based hardware and a true "open" architecture allows continued interoperability with intelligence legacy systems, while ensuring a smooth evolution to the future.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604321A - ALL SOURCE ANALYSIS SYSTEM

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	5346	8373	8884
Current Budget (FY 2006/2007 PB)	6605	7973	6897
Total Adjustments	1259	-400	-1987
Net of Program/Database Changes			
Congressional Program Reductions	-105		
Congressional Rescissions			
Congressional Increases	1364		
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years		-400	-1987

Change Summary Explanation:

FY 2005: Funds increased, \$1,300K due to Congressional Add.

FY 2006: Funds realigned, (\$400K) to higher priority requirements.

FY 2007: Funds realigned, (\$1,987K) to higher priority requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604321A - ALL SOURCE ANALYSIS SYSTEM

PROJECT
B19

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
B19 ASAS EVOLUTIONARY ACQ (TIARA)	17229	5371	6720	3340	3380	3357	3322	3283	Continuing	0

A. Mission Description and Budget Item Justification: The All Source Analysis System (ASAS) is a ground based, mobile, command and control, intelligence processing system that provides tactical commanders a common view of the battlefield and a means for gaining a timely and comprehensive understanding of enemy force deployments, capabilities, and potential courses of action. ASAS provides automated support to the combat commander in the areas of intelligence, surveillance, reconnaissance, collection management, all-source fusion (signals intelligence, imagery intelligence, human intelligence, open source intelligence, and measurements and signatures intelligence), battlefield visualization, target development and situation analysis, and multi-source processing, intelligence reporting/collaboration, electronic warfare/countermeasures, and operational security as well as "digitized Army" automation support. ASAS is providing incremental evolutionary software for military intelligence operations.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue System Development and Demonstration (SDD) of Analysis and Control Element (ACE), conduct ACE evaluation, and provide program support.	17229	2377	0	0
Conduct SDD of ASAS Light (Software Blocking 1(SWB1))	0	500	0	0
Conduct ASAS Light Continuous Evaluation and Acquisition Decision Memorandum (ADM) In Process Review (IPR)	0	500	0	0
Conduct SDD of ASAS Light (Software Blocking 2(SWB2))	0	949	2971	0
Conduct ASAS Light (SWB2) Continuous Evaluation	0	0	0	508
Resolve high priority Software Anomaly Reports (SARs), Safety, and Interoperability issues, comply with DOD mandates and provide Defense Information Infrastructure (DII) Common Operating Environment(COE)/Network Centric Enterprise Services(NCES) maintenance for ASAS Light, Analysis Control Team-Enclave (ACT-E), and ACE	0	1045	3749	2832
Totals	17229	5371	6720	3340

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604321A - ALL SOURCE ANALYSIS SYSTEM

PROJECT
B19

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA (K28801) ASAS Modules	46901	15659	21204	12646	51293	56825	14106	4544	Continuing	Continuing
Spares (BS9704)	997	3187	2485	1990	2058	758	2160	2207	Continuing	Continuing

C. Acquisition Strategy: The ASAS development program builds upon and expands the capabilities and functionality developed and produced in the ASAS Block I System including conversion to the Common Hardware Systems (CHS) and the Defense Information Infrastructure Common Operating Environment/Network Centric Enterprise Services (DII COE/NCES) and Modernized Integrated Database (MIDB). ASAS is being developed using a block upgrade evolutionary acquisition strategy.

- ASAS Block I: Fielded ruggedized, tactical systems at Active Component (AC) corps, divisions, and the institutional training base.
- ASAS-Extended: Provided the rest of the AC and National Guard enhanced separate brigades with an interim ASAS capability running Block I software on commercial hardware.
- ASAS Block II: Uses common hardware and software, built on the DII COE/NCES standard. Provides open architecture, assured interoperability, and enhanced capability with room for growth. Block II is currently in SDD. ASAS Light is the key intelligence provider for Army Battle Command Systems (ABCS).
- Army Software Blocking: ASAS Light synchronizes with Software Block 1 and 2 execution phases.

The program emphasizes multiple evolutionary deliveries, with incremental enhancements of ASAS products, integrated test, and continuous evaluation opportunities. ASAS builds upon experience and feedback gained from the fielded ASAS products and real-world operational deployments providing the soldier with improved reliability, supportability, and survivability.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604321A - ALL SOURCE ANALYSIS SYSTEM

PROJECT
B19

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Development	CPAF	Lockheed Martin, Denver, CO	272731	0		0		0		0	272731	0
b . Subsystem Development	GSA D.O.	Electronic Warfare Associates, Huntington, WV	10795	1300	3Q	0		0		0	12095	0
c . Subsystem Development	GSA D.O.	Austin Info Systems, Austin, TX	21953	0		1867	1Q	0		0	23820	0
d . SARs, Safety and Interop	GSA D.O.	Austin Info Systems, Austin, TX	0	1045	1-3Q	1623	1-3Q	1647	1-3Q	Continue	Continue	0
Subtotal:			305479	2345		3490		1647		Continue	Continue	0

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0604321A - ALL SOURCE ANALYSIS SYSTEM

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Facility Support	MIPR	Ft. Belvoir, VA	950	184	1-4Q	192	1-4Q	199	1-4Q	Continue	Continue	0
b . License Maintenance			0	500	1-3Q	2076	1-3Q	0		0	2576	0
Subtotal:			950	684		2268		199		Continue	Continue	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ASAS Developmental and Operational Testing	MIPR	EPG, Ft Huachuca, AZ	5731	977	1Q	0		0		0	6708	0
b . Continuous Evaluation	MIPR	EPG, Ft. Huachuca, AZ	263	500		0		508	1Q	Continue	Continue	0
Subtotal:			5994	1477		0		508		Continue	Continue	0

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . FFRDC	MIPR	MITRE/Washington, DC	9922	0		0		0		0	9922	0
b . Contractor Spt	BPA	SYTEX, Inc. Vienna, VA	27942	486	1-4Q	486	1-4Q	486	1-4Q	Continue	Continue	0
c . Govt In House	MIPR	PM IE, Ft. Belvoir, VA	17947	379	1-4Q	476	1-4Q	500	1-4Q	Continue	Continue	0
Subtotal:			55811	865		962		986		Continue	Continue	0
Project Total Cost:			368234	5371		6720		3340		Continue	Continue	0

Schedule Profile (R4 Exhibit)

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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
SDD/Evaluation	ACE																															
SDD	ASAS Light (SWB1)																															
(1) ADM									▲ ADM IPR																							
Software Engineering					SARS, Safety, Interop, DII COE/NCES																											
SDD/Evaluation	ASAS Light Updates (SWB2)																															

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
SDD and evaluation of Analysis Control Element (ACE)	1-4Q	1-3Q						
SDD of ASAS Light (Software Blocking 1 (SWB1))	1-4Q	1-3Q						
ADM IPR		3Q						
SDD and evaluation of ASAS Light (Software Blocking 2 (SWB2))	1-4Q	1-4Q	1-4Q	1Q				
High priority SARs, Safety, Interop issues and DII COE/NCES maint for ASAS Light, ACT-E, and ACE		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
B41 CI/HUMINT SOFTWARE PRODUCTS (TIARA)	2029	915	931	3228	1632	1697	2968	3169	0	18891

A. Mission Description and Budget Item Justification: The Counterintelligence/Human Intelligence (CI/HUMINT) Information Management System (CHIMS) is the Army system responsible for collection, processing, and analysis of CI/HUMINT data to satisfy tactical and strategic human intelligence requirements. CHIMS provides the automation support for Army tactical CI/HUMINT information collection, investigation, interrogation, operations, biometrics, document exploitation, and force protection. The CHIMS architecture extends from the individual agent/collector to National and Theater intelligence organizations. CHIMS is the only HUMINT automation provider for All-Source architectures for Future Force, including: ASAS Block 1 and 2, Distributed Common Ground System – Army (DCGS-A), PORTICO and Future Combat System (FCS). CHIMS systems are used to produce intelligence products to feed and maintain HUMINT databases and the All Source Correlated Data Base (ASCDB). CHIMS provides systems to both vertical and horizontal customer bases. Vertical (Army) clients include: Special Forces, Long Range Surveillance Units, all MACOMS, Reserves, National Guard, Stryker Brigade Combat Teams (SBCT), and the Intelligence School. Horizontal clients (non-Army) include U.S. Navy, U.S. Marine Corps, Joint Task Force (JTF) Guantanamo Bay (GTMO) Cuba, and Defense Intelligence Agency (DIA). Organic automation and analysis capabilities are provided to Military Intelligence (MI) units with hand held reporting devices and to CI Staff Officers (CISO) with high capacity workstations and web servers, providing collection management, asset management, transmission, receipt, storage, and export of electronic data and digital imagery information including exploitation of foreign language materials and biometrics. CHIMS can produce and disseminate messages and reports through an array of communications systems including: combat Net Radio, SINCGARS, PRC-150 STE, STU, satellite, and other organic communications devices. The CHIMS suite of systems incorporates a multi-tiered architecture that reaches from handheld devices to Web servers providing multiple security level access with both brilliant push and smart pull tools to the battlefield commander and National interests. PM CHIMS develops the CI/HUMINT Automated Management Software (CHAMS), a 3rd generation product providing advanced capabilities with a soldier friendly interface. The software provides asynchronous distributed databases that use a client server schema to maintain synchronicity In-Theater.

FY06/07 funding continues the spiral development of CHAMS functionality and support of the fielded SW baseline.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue spiral development of CHAMS functionality and SW Problem Reporting implementation.	1773	625	713	2517
Begin transition of CHAMS SW Baseline V4.2	0	225	190	101
Developed and Delivered CI/HUMINT SS WS and Human Domain Work Station (HDWS)	156	0	0	0

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Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007
Continue Test and Security Accreditation efforts.	100	65	28	610
Totals	2029	915	931	3228

B. Other Program Funding Summary

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE (PE 35208, Proj 956) DCGS-A (JMIP)	13515	9644	9901	10625	11204	11593	2052	2006	Continuing	Continuing
OPA (BK5275) CHIMS (TIARA)	16543	2866	730	6710	5125	5942	10285	12519	Continuing	Continuing
RDTE (PE 64321, Project B49) CHIMS TADSS	0	125	125	125	124	123	0	0	0	622

C. Acquisition Strategy: The CI/HUMINT Automated Management Software (CHAMS), a common software baseline, is being developed under a competitively awarded Indefinite Delivery/Indefinite Quantity (ID/IQ) type contract. CHAMS is the common SW baseline on three of the CI/HUMINT product lines (CI/HUMINT Automated Tool Set (CHATS), Individual Tactical Reporting Tool (ITRT), and Counterintelligence & Interrogation Operations (CI&I OPS) workstation). CHAMS will be continuously improved through spiral development to keep pace with evolving capability requirements. The hardware for all product lines is an integration of commercial off-the-shelf (COTS) hardware. As COTS technology evolves, new hardware will be introduced to keep CHIMS' users at the forefront of intelligence automation. This integration of new development and COTS/GOTS ensures both a cost and time to field advantage for CHIMS clients.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CI/HUMINT Utilities SW Development	IDIQ Competitive	Northrop Grumman, Sierra Vista, AZ	224	0		0		0		0	224	0
b . CHAMS Software Development	IDIQ Competitive	Northrop Grumman, Sierra Vista, AZ	6509	556	2Q	620	2Q	2200	2Q	Continue	9885	0
c . CHATS Development	Competitive T&M	TAMSCO, Eatontown, NJ	1808	0		0		0		0	1808	0
d . CI/HUMINT SS SW Development	IDIQ Competitive	Northrop Grumman, Sierra Vista, AZ	50	0		0		0		0	50	0
e . CI & I OPS WS Integration	Competitive T&M	TAMSCO, Eatontown, NJ	1566	0		0		0		0	1566	0
f . ITRT Development	Competitive T&M	TAMSCO, Eatontown, NJ	444	0		0		0		0	444	0
g . Refugee Management System	CPFF	EWA, Fairmont, WV	3000	0		0		0		0	3000	0
h . CECOM Transition Support	MIPR	CECOM, SW Engineering Center, Ft. Huachuca AZ	0	187	1Q	170	1Q	93	1Q	0	450	0
Subtotal:			13601	743		790		2293		Continue	17427	0

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Remarks: SW Engineering Support for transition of CHIMS SW baseline V4.2 to CECOM SEC.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Contractor Support	BPA	The Sytex Group Inc./Newington, VA	1683	92	1Q	91	1Q	360	1Q	Continue	2226	0
b . Matrix Support	MIPR	I2WD, CECOM Fort Monmouth, NJ	368	0		0		0		0	368	0
Subtotal:			2051	92		91		360		Continue	2594	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Developmental Test	MIPR	PRC, McLean, VA	401	0		0		0		0	401	0
b . Developmental Test	MIPR	JITC, Ft. Huachuca, AZ	304	0		25	1Q	0		0	329	0
c . Test Support and Interoperability	MIPR	CTSF, Ft. Hood Tx.	155	40	2Q	0		0		Continue	195	0
d . Operational Test	MIPR	TBD	79	0		0		485	1Q	0	564	0

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III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
e . Test Articles	MIPR	ESS, Frederick, MD	120	0		0		0		0	120	0
f . Security Accreditation Collateral	MIPR	CECOM, Ft. Monmouth, NJ	305	0		0		50	2Q	Continue	285	0
g . SCI PL2	MIPR	NGMS, Sierra Vista, AZ	80	0		0		0		0	80	0
h . SCI PL2 Certification	MIPR	Air Force Research Lab (AFRL), Rome, NY	160	0		0		0		0	160	0
i . Safety Release	MIPR	CECOM, Ft. Monmouth, NJ	0	15	1Q	0		15	1Q	0	30	0
Subtotal:			1604	55		25		550		Continue	2164	0

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management		PM DCGS-A/CHIMS Fort Monmouth, NJ	803	5	2Q	5	2Q	5	2Q	Continue	818	0
b . Facility Support		PM NV/RSTA, Ft Belvoir, VA	605	20	1Q	20	1Q	20	1Q	Continue	665	0
Subtotal:			1408	25		25		25		Continue	1483	0
Project Total Cost:			18664	915		931		3228		Continue	23668	0

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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) CHAMS 4.2 Beta Delivery	▲ 1 CHAMS 4.2 Beta Delivery				▲ 2 CHAMS Interoperability Test				▲ 3 CHAMS 4.2/DCGS-A Spiral 3 Integration				Next Generation CHAMS SW Dev				▲ 4 Next Generation CHAMS V5 combined															
(2) CHAMS 4.2 Beta Interoperability Test																																
(3) CHAMS 4.2/DCGS-A Spiral 3 Integration																																
Begin Next Generation CHAMS SW Development																																
(4) Next Generation CHAMS V5 combined DT/OT																																

Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
CHAMS V4.2 Beta Delivery	1-2Q							
CHAMS V4.2 Interoperability Test		3Q						
CHAMS V4.2/DCGS-A Spiral 3 Integration		3Q						
Begin Next Generation CHAMS SW Development		3Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Conduct Next Generation CHAMS V5 Combined DT/OT				1Q				

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B44

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
B44 ASAS TADSS (TIARA)	0	196	197	202	202	202	0	0	Continuing	0

A. Mission Description and Budget Item Justification: The All Source Analysis System (ASAS) is a ground based, mobile, command and control, intelligence processing system that provides tactical commanders a common view of the battlefield and a means for gaining a timely and comprehensive understanding of enemy force deployments, capabilities, and potential courses of action. ASAS provides automated support to the combat commander in the areas of intelligence, surveillance, reconnaissance, collection management, all-source fusion (signals intelligence, imagery intelligence, human intelligence, open source intelligence, and measurements and signatures intelligence), battlefield visualization, target development and situation analysis, and multi-source processing, intelligence reporting/collaboration, electronic warfare/countermeasures, and operational security as well as "digitized Army" automation support. ASAS is providing incremental evolutionary software for military intelligence operations.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Training Aids Devices Simulators and Simulations	0	196	197	202
Totals	0	196	197	202

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Training Aids Devices Simulators and Simulations	TBD	TBD	0	196	2Q	197	1Q	202	1Q	396	991	0
Subtotal:			0	196		197		202		396	991	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			0	196		197		202		396	991	0
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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
B49 CHIMS TADSS (TIARA)	0	123	125	127	127	126	0	0	0	628

A. Mission Description and Budget Item Justification: The Counterintelligence/Human Intelligence (CI/HUMINT) Information Management System (CHIMS) is the Army system responsible for collection, processing, and analysis of CI/HUMINT data to satisfy tactical and strategic human intelligence requirements. CHIMS provides the automation support for Army tactical CI/HUMINT information collection, investigation, interrogation, operations, biometrics, document exploitation, and force protection. The CHIMS architecture extends from the individual agent/collector to National and Theater intelligence organizations. CHIMS is the only HUMINT automation provider for All-Source architectures for the Current to Future Force, including: ASAS Block 1 and 2, Distributed Common Ground System – Army (DCGS-A), PORTICO and Future Combat System (FCS). CHIMS systems are used to produce intelligence products to feed and maintain HUMINT databases and the All Source Correlated Data Base (ASCDB). CHIMS provides systems to both vertical and horizontal customer bases. Vertical (Army) clients include: Special Forces, Long Range Surveillance Units, all MACOMS, Reserves, National Guard, Stryker Brigade Combat Teams (SBCT), and the Intelligence School. Horizontal clients (non-Army) include U.S. Navy, U.S. Marine Corps, Joint Task Force (JTF) GTMO Cuba, and Defense Intelligence Agency (DIA). Organic automation and analysis capabilities are provided to Military Intelligence (MI) units with hand held reporting devices and to CI Staff Officers (CISO) with high capacity workstations and web servers, providing collection management, asset management, transmission, receipt, storage, and export of electronic data and digital imagery information including exploitation of foreign language materials and biometrics. CHIMS can produce and disseminate messages and reports through an array of communications systems including: serial, SINCGARS, STE, STU, satellite, and other organic communications devices. The CHIMS suite of systems incorporates a multi-tiered architecture that reaches from hand held devices to Web servers providing multiple security level access with both brilliant push and smart pull tools to the battlefield commander and National interests. PM CHIMS develops the CI/HUMINT Automated Management Software (CHAMS), a 3rd generation product providing advanced capabilities with a soldier friendly interface. The software provides asynchronous distributed databases that use a client server schema to maintain synchronicity In-Theater. This project provides Training Aids, Devices, Simulators and Simulations (TADSS) for CHIMS.

FY06/07 continues development of Computer Based Training (CBT) segments of the TADSS requirement.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Develop Training Aids, Devices, Simulators and Simulations for CHIMS systems.	0	123	125	127
Totals	0	123	125	127

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE (PE 654321, Proj B41) CI/HUMINT Software Products	2029	915	931	3228	1632	1697	2968	3169	Continuing	Continuing
OPA (BK5275) CHIMS (TIARA)	16543	2866	730	6710	5125	5942	10285	12519	Continuing	Continuing

C. Acquisition Strategy: The CI/HUMINT Automated Management Software (CHAMS), is the common software baseline for all CI/HUMINT Info Management System (CHIMS) product lines. CHAMS will be continuously improved through spiral development to keep pace with evolving capability requirements and TADSS requirements. CHIMS Training Aids, Devices, Simulators and Simulations development will be accomplished under the base CHAMS development contract.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Training Aids, Devices, Simulators and Simulations	IDIQ	NGMS Sierra Vista, AZ	0	113	2Q	115	2Q	117	2Q	0	345	0
Subtotal:			0	113		115		117		0	345	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	T&M	Sytex TSGI inc, Newington, VA.	0	10	1Q	10	1Q	10	1Q	0	30	0
Subtotal:			0	10		10		10		0	30	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			0	123		125		127		0	375	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604329A - Common Missile					PROJECT 013	
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
013 JOINT COMMON MISSILE	85564	112185	0	0	0	0	0	0	0	246590

A. Mission Description and Budget Item Justification: The Joint Common Missile (JCM) is a fixed and rotary wing aviation-launched missile system that provides advanced line-of-sight (LOS) and beyond-line-of-sight (BLOS) capabilities, including precision strike, passive, and fire-and-forget seeker technologies; increased range; and increased lethality. Replacing aviation-launched TOW, the HELLFIRE family of missiles, and Maverick, JCM will become the weapon of choice for Army rotary-wing systems including the Longbow Apache (AH-64D). JCM is also a lethality candidate for Future Combat Systems (FCS) ground platforms. The JCM is a Joint program (rotary and fixed wing requirements) with the Navy and USMC for the Super Hornet (F/A-18E/F), the Seahawk (MH-60R), and Super Cobra (AH-1Z). Finally, JCM is a cooperative development program with the United Kingdom for their fixed and rotary wing aircraft. The JCM increases the warfighters' operational flexibility by effectively engaging a variety of stationary and mobile targets on the battlefield, including advanced heavy/light armored vehicles, bunkers, buildings, patrol craft, command and control vehicles, transporter/erector (e.g., SCUD) launchers, artillery systems, and radar/air defense systems. Its multi-mode seeker will provide required capability in adverse weather, day or night, and in an obscured/countermeasure environment against both stationary and moving targets. JCM supports more efficient logistics for expeditionary force tailoring by replacing several missile variants with a single, interoperable weapon. It also allows flexibility in the location of resupply on the battlefield, thereby minimizing the logistic burden of the combat force. JCM's extended shelf life and modular design will reduce life-cycle costs.

FY05 achieves Phase 1 objectives as part of a two-phased Increment 1 System Development and Demonstration (SDD) program. Phase 1 is focusing on risk mitigation (e.g. demonstrating progress toward meeting 16 kilometer range) culminating in a system Preliminary Design Review (PDR). The JCM program was terminated December 23, 2004 with language directing the identification of the capability needs to equip fixed wing tactical aircraft, rotary winged and unmanned air vehicles with precision air-to-ground close air support weapons using the JROC/Joint Capabilities Integration and Development System (JCIDS) process to support the FY 2008-2013 Program/Budget Review. The program will focus on a technology preservation and requirements analysis effort to capture and retain the technology developed during the Concept and Technology Development (C/TD) and Phase 1 SDD program and prepare for transition into future applications. This effort will focus on maturation of the missile and seeker algorithms to support the simulation which is essential in the definition of capabilities and requirements as directed. This effort will include captive flight testing with the already developed tri-mode seeker hardware to validate the simulations and evaluate the projected system performance. Risk reduction hardware procured during Phase 1 will be assembled into flight hardware, and guided missile flight tests will be performed to demonstrate missile system integration performance. Effort to continue risk reduction on any additional challenges identified during the course of Phase 1 will be completed and documentation of the results of this activity will be captured to facilitate transition of this technology into the future applications.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604329A - Common Missile	PROJECT 013
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Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Initiate risk mitigation phase, e.g., demonstrating progress toward 16 kilometer range (Conduct Phase 1 effort)	65680	0	0	0
Initiate Qualified Baseline Design, developmental testing, operational assessment and system integration and demonstration for SDD of Joint Common Missile	0	95274	0	0
Procure component hardware for engineering testing, prepare and update missile design documentation and procure prototype hardware and test	19884	16911	0	0
Totals	85564	112185	0	0

B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	152381	146851	83967
Current Budget (FY 2006/2007 PB)	112185	0	0
Total Adjustments	-40196	-146851	-83967
Net of Program/Database Changes			
Congressional Program Reductions	-36965		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-3231		
Adjustments to Budget Years		-146851	-83967

FY05 decreased \$35.0 million as a result of Congressional reduction.

In December 2004, the Department decided to terminate the Joint Common Missile Program in lieu of evaluation of close air support alternatives.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)**February 2005**

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604329A - Common Missile

PROJECT

013

C. Other Program Funding Summary: Not applicable for this item.

D. Acquisition Strategy: In JCM's previous phase, C/TD, JCM contractors were selected via full and open competition. The JCM program's acquisition strategy consisted of two increments in an evolutionary acquisition: the full Increment 1 capability will be acquired in a 48 month System Development and Demonstration effort through a two-phased approach. Phase 1 focuses on risk mitigation culminating in a system Preliminary Design Review (PDR). Immediately following, Phase 2 was planned to focus on system integration and demonstration leading to a Milestone C decision. The Increment 1 SDD effort was competed among the C/TD contractors for contract award covering Phase 1 and Phase 2 development and was awarded to Lockheed Martin, May 2004.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	27344	33712	34627	31265	47908	32714	40827	32586	0	280983
033 ADV CREW SVC WPN	27344	33712	0	0	0	0	0	0	0	61056
S58 SOLDIER ENHANCEMENT PROGRAM	0	0	12800	15411	19139	15742	16849	12221	0	92162
S59 SOLDIER SUPPORT EQUIPMENT - ED	0	0	296	303	303	302	631	631	0	2466
S60 CLOTHING & EQUIPMENT	0	0	7918	9082	9323	9239	5901	5999	0	47462
S61 ACIS ENGINEERING DEVELOPMENT	0	0	2248	2291	2523	2620	2706	2805	0	15193
S62 OBJECTIVE INDIVIDUAL COMBAT WEAPON	0	0	5126	1786	2716	0	0	0	0	9628
S63 SMALL ARMS IMPROVEMENT	0	0	6239	2392	13904	4811	14740	10930	0	53016

A. Mission Description and Budget Item Justification: This program element for System Development and Demonstration (SDD) manages the Soldier as a system, with the goal of increasing Soldiers' combat effectiveness, increasing survivability, and improving the Soldiers' quality of life. It develops and tests prototypes of weapons, clothing, equipment, and other items useful to support the Soldier. This program element restructures/consolidates the following program elements and associated projects: 0604713 (Project D668 Soldier Enhancement Program, Project DC40 Soldier Support Equipment, and Project DL40 Clothing and Equipment); 0604801 (Project DC45 Aircrew Integrated Systems Engineering Development); and, 0604802 (Project D134 Objective Individual Combat Weapon, Project DAS1 Small Arms Improvement, and Project DAS6 Common Remotely Operated Weapon System (CROWS)). Consolidating common program elements and projects into one program element streamlines the management and efficiency of developing and testing infantry support weapons and associated equipment.

Project 033 (Advanced Crew Served Weapon) develops the 25mm XM-307 Advanced Crew Served Weapon machine gun, which enables the Soldier to effectively suppress and incapacitate exposed and defilade personnel targets out to 2000 meters using airbursting, fragmenting, or thermobaric ammunition. Starting in FY06 and continuing in FY07 and FY08, this program will be funded directly from PE 0604645 to support the Future Combat Systems (FCS) Unit of Action requirement for a mounted version of the XM-307 machine gun.

Project S58 (Soldier Enhancement Program) supports accelerated integration, modernization, and enhancement efforts of lighter, more lethal weapons, and improved soldier items including lighter, more comfortable load-bearing equipment, field gear, survivability items, communications equipment, and navigational aids.

Project S59 (Soldier Support Equipment) supports engineering development and prototyping of critical Soldier support systems and other combat

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604601A - Infantry Support Weapons

service support equipment that will improve unit sustainability and combat effectiveness.

Project S60 (Clothing and Equipment) supports pre-production development of state-of-the-art individual clothing and equipment to improve the survivability, mobility and sustainment affecting the quality of life of the individual Soldier.

Project S61 (Aircrew Integrated Systems) provides Engineering Development programs with improved aviator safety, survivability, and human performance that amplify the warfighting effectiveness and facilitates full-spectrum dominance of the Army aircraft including the AH-64 Apache/Longbow, CH-47 Chinook, UH/HH-60 Blackhawk, Light Utility Helicopter, and Armed Reconnaissance Helicopter.

Project S62 (Objective Individual Combat Weapon) funds System Development and Demonstration (SDD) of the XM-25 Air Burst Assault Weapon. The XM25 Air Burst Assault Weapon is the air burst portion of the XM-29 Integrated Air Burst Weapon. The XM-25 dramatically increases Soldier lethality, survivability, and standoff capability when engaged in combat operations.

Project S63 (Small Arms Improvements) demonstrates engineering development models or integrated commercial items designed to enhance lethality, target acquisition, fire control, training effectiveness, and reliability for small arms weapon systems and ammunition.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	28187	42662	43609
Current Budget (FY 2006/2007 PB)	33712	34627	31265
Total Adjustments	5525	-8035	-12344
Net of Program/Database Changes			
Congressional program reductions	-506		
Congressional rescissions			
Congressional increases	7000		
Reprogrammings			
SBIR/STTR Transfer	-969		
Adjustments to Budget Years		-8035	-12344

Adjustments to Budget years: Funds realigned to higher priority requirements (FY06: \$-8035; FY07: \$-12344)

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

PROJECT
033

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
033 ADV CREW SVC WPN	27344	33712	0	0	0	0	0	0	0	61056

A. Mission Description and Budget Item Justification: Not applicable for this item.

Accomplishments/Planned Program Not applicable for this item.

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

PROJECT
S58

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S58 SOLDIER ENHANCEMENT PROGRAM	0	0	12800	15411	19139	15742	16849	12221	0	92162

A. Mission Description and Budget Item Justification: This program supports accelerated integration, modernization, and enhancement efforts of lighter, more lethal weapons, and improved soldier items including lighter, more comfortable load-bearing equipment, field gear, survivability items, communications equipment, and navigational aids. Soldiers are managed in three categories: dismounted Soldiers, combat crews (air and ground), and other Soldiers. Projects are generally completed in three years or less.

Funds for prior year efforts were funded under PE 0604713A (Project 668 - Soldier Enhancement Program).

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY06-FY07: Continue evaluation/procure prototypes and/or test for several efforts such as Semi-automatic Sniper System, Close Quarters Battle Kit, Fuel Handlers Coveralls.	0	0	872	0
FY06-FY07: Continue evaluation for such items as: Modular Accessory Shotgun System (MASS), Family of Small Arms Suppressors, 12 GA Extended Range Non-Lethal Cartridge, Future Handgun System.	0	0	4491	5898
FY06-FY07: Continue in-house engineering support services, conduct technical evaluation and program reviews.	0	0	3500	3770
FY06-FY07: Initiate market surveys and/or evaluations on new items to commence development and demonstration. New items started will continue evaluation/procurement of new prototypes.	0	0	3937	5743
Totals	0	0	12800	15411

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

PROJECT
S58

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA3, MA68000, Soldier Enhancement	4135	9737	4810	9165	10259	3410	7347	5451	Continuing	Continuing
OPA2, BA5300, Soldier Enhancement	8784	25433	8153	14590	13909	9587	9516	7670	Continuing	Continuing
WTCV, GC0076, Small Arms (SEP)	8080	3479	5181	2782	5459	1269	5229	1269	Continuing	Continuing
WTCV, GZ1290, Squad Automatic Wpn (Mods)	13058	3369	3095	5314	9421	4181	5141	3190	Continuing	Continuing
WTCV, GZ2800, M16 Rifle Mods	18386	2336	1970	1024	3925	1026	3599	3602	Continuing	Continuing
WTCV, GB3007, M4 Carbine Mods	48249	13724	44817	17064	13905	6332	13733	9799	Continuing	Continuing
WTCV, GO1500, Sniper Rifle	9172	8837	9656	8431	195	0	0	0	0	36291
WTCV, GC0925, Mods	0	3232	5146	1720	2809	501	3098	2139	Continuing	Continuing
PAA, F47500, 7.62mm AP	400	400	400	400	0	0	0	0	0	1600
PAA, F47600, 5.65mm AP	1600	1600	600	600	0	0	0	0	0	17379
PAA, F0900, 40mm Canister	0	0	0	0	0	0	0	0	0	0
OMA, 121017, Central Funding & Fielding	88778	141770	136115	161051	159302	115700	0	0	Continuing	Continuing

C. Acquisition Strategy: The Soldier Enhancement Program (SEP) focuses on developmental initiatives and integration efforts that lend themselves to accelerated acquisition and fielding in the near term (within three years). New SEP candidates are reviewed and approved annually. SEP items are procured from multiple appropriations, i.e., OMA, OPA, WTCV, and PAA.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

PROJECT
S58

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	Various	TBD	0	0		4713	1Q	5898	1Q	0	10611	0
Subtotal:			0	0		4713		5898		0	10611	0

Remarks: Candidates for the Soldier Enhancement Program are received, reviewed, and approved annually. Contractual efforts are focused on procuring prototypes for testing. Funding for PE 0604713A, Project 668 transitions to PE 0604601A Project S58 beginning in FY06.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	Various	TBD	0	0		2173	1-4Q	2751	1-4Q	0	4924	0
Subtotal:			0	0		2173		2751		0	4924	0

Remarks: Support costs vary annually depending on the type of items that are being evaluated. Research, Development, and Engineering Centers support to evaluate these items also varies annually depending on the number and types of items. Funding for PE 0604713A, Project 668 transitions to PE 0604601A Project S58 in FY06.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

PROJECT
S58

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	Various		0	0		2414	1-3Q	2992	1-3Q	0	5406	0
Subtotal:			0	0		2414		2992		0	5406	0

Remarks: Testing costs vary annually depending on number and type of items being evaluated.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House	MIPR	PEO Soldier, Ft Belvoir, Va	0	0		3500	1-3Q	3770	1-3Q	0	7270	0
Subtotal:			0	0		3500		3770		0	7270	0

Remarks: Costs vary annually depending on number and type of items being evaluated.

Project Total Cost:			0	0		12800		15411		0	28211	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

PROJECT
S59

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S59 SOLDIER SUPPORT EQUIPMENT - ED	0	0	296	303	303	302	631	631	0	2466

A. Mission Description and Budget Item Justification: Not applicable for this item.

Accomplishments/Planned Program Not applicable for this item.

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

PROJECT
S60

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S60 CLOTHING & EQUIPMENT	0	0	7918	9082	9323	9239	5901	5999	0	47462

A. Mission Description and Budget Item Justification: The funding in this project supports pre-production development of state-of-the-art individual clothing and equipment to improve the survivability, mobility and sustainment affecting the quality of life of the individual Soldier. Funds for prior year efforts were funded in PE 0604713A (Project L40 - Soldier Support Systems).

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Army Combat Uniform (ACU) II: Build refined test items and initiate final evaluations prior to Block upgrades.	0	0	0	283
Fully Integrated Combat Helmet (FICH): Initiate effort to combine the functionality of the dismounted soldier helmet and combat vehicle crewman helmet into one platform incorporating radio/intercom communications, face and eye protection.	0	0	0	382
Modular Lightweight Load Carrying Equipment (MOLLE) Generation IV: Complete prototype development for a hydration system to eliminate freezing, water carrying frame and load carrier/body armor integration. Complete Developmental and Operational Testing.	0	0	0	883
Modular Boot System: Initiate Low Rate Initial Production in FY06, to build test articles, with full rate production decision in 3rd Qtr FY07.	0	0	470	775
Soldier Body Armor (SBA) Enhancements: Continue Product Improvement of Interceptor Body Armor (IBA) in support of fielding and execute incremental capability improvements related to technology maturity and operational feedback.	0	0	475	190
Organizational Clothing and Individual Equipment (OCIE) Modernization: Modernize fabric and design of OCIE items in order to incorporate comfort and durability and improve functionality and fit (Maternity Uniform, Coveralls, Wool Winter Socks, Moisture wicking undergarments). Evaluate samples, conduct technical tests and user evaluations.	0	0	580	782
Combat Eye Protection (CEP): Evaluate and guide industry to Product Improve commercial ballistic eyewear and select the most viable for incorporation of standard prescription carriers and protection against lasers. Apply/test advanced photochromic technology and dielectric stack technology to ballistic protective lenses and examine various lens enhancements.	0	0	573	476

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

PROJECT
S60

Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
Chemical Protective Ensemble: Continue effort to reduce bulk/weight of current level A/B suit and extend cooling period of performance. Complete Operational testing.	0	0	0	484
Self Regulating Thermal Systems: Non-layered ensemble that is capable of providing comfort in a wide temperate range. Initiate effort to develop an adaptive material that would tune itself to the environment for protection.	0	0	0	678
Army Combat Environmental Clothing System(ACECS): Initiate testing of items for field and user evaluation to approve material changes and/or type classification.	0	0	275	0
Simultaneous Delivery of Jumper/Door Bundle/Packages: Acquire test assets and initiate testing.	0	0	0	523
Air Drop Development: Build Operational Test assets for Advanced Tactical Parachute System and conduct operational testing.	0	0	1375	290
Free Fall Ensemble: Transition military free fall S&T endeavors to development. (Navigation Aid/Parachutist Oxygen System)	0	0	0	775
Glove Enhancement Initiative: Continuously upgrade existing multitude of gloves to be more in line with State of the Art materials and technology/design.	0	0	425	532
Service Uniform Modernization: Continue efforts to incorporate new fabrics, fabric finishes and design features. (Class A Uniform, Womens' Mess, Dress Uniform, Blouse, Sweater Cardigan black, Sweater Cardigan White)	0	0	740	537
Clothing Bag Modernization: Continue to modernize fabric and design of items contained in the clothing bag in order to improve functionality, comfort, fit and durability. Conduct Market Surveys, process evaluation samples, conduct technical and user evaluations (IPFU, Duffle Bag, Towel Bath Coat cold weather, Dress & Boot Socks, Undershirt Clothing Bag)	0	0	735	572
Army Combat Uniform Ancillary Items: Continue to update previously identified items/specifications to include new shade requirement, design changes and component changes to conform to the new universal camouflage pattern.	0	0	220	0
Improved Water Purification: Initiate effort to incorporate evolving filtration/purification technologies into on-the-move hydration systems.	0	0	320	0
Advanced Bomb Suit(ABS): Continue efforts to provide capabilities enhancement to the fielded ABS consisting of NBC protection (level C) and communications components.	0	0	370	237
Gross Liquid Chemical Protective Ensemble: Initiate effort to replace Suit Contamination Avoidance Liquid Protective (SCALP) garment with a garment to go over Joint Services Lightweight Integrated Suit Tech (JSLIST) for splash protection. Purchase test items, test physical properties and chemical agent resistance, user preference and conduct operational testing.	0	0	820	683
Extreme Cold Weather Stove: Complete Technical testing to evaluate durability and fuel consumption.	0	0	540	0
Totals	0	0	7918	9082

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

PROJECT
S60

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0604713.L40, Clothing and Equipment	2960	5116	0	0	0	0	0	0	0	8076
RDTE, 0603747.669, Clothing and Equipment	8323	9196	0	0	0	0	0	0	0	17519
RDTE, 0603827.S53, Clothing and Equipment	0	0	7024	6798	9522	9039	6406	6605	Continuing	Continuing
OMA, 121017, Central Funding and Fielding	93707	159554	145411	152787	116876	100600	102701	52960	Continuing	Continuing

C. Acquisition Strategy: Soldier modernization will be accomplished by various methods. Acquisition strategies will vary from: 1) quick fixes in 12-24 months or less from concept to Type Classification (TC), 2) Moderization improvements which require limited RD&E and will be completed in more than 24-48 months from inception to Type Classification, 3) Fully integrated development that will require substantial RDTE&E funding and will be completed in 4 years or more.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

PROJECT
S60

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	MIPRs	Natick Soldier Center, Natick, MA	0	0		2000	1-3Q	2175	1-3Q	0	4175	0
b . Various	Contracts	Various	0	0		2200	1-3Q	2457	1-3Q	0	4657	0
Subtotal:			0	0		4200		4632		0	8832	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Misc Support Costs	MIPR	Various	0	0		1802	1-2Q	2025	1Q	0	3827	0
Subtotal:			0	0		1802		2025		0	3827	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

PROJECT
S60

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	MIPRS	Various	0	0		1200	1-3Q	1500	1-3Q	0	2700	0
Subtotal:			0	0		1200		1500		0	2700	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support		PM CIE Ft Belvoir, VA	0	0		716	1-4Q	925	1-4Q	0	1641	0
Subtotal:			0	0		716		925		0	1641	0

Project Total Cost:			0	0		7918		9082		0	17000	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

PROJECT
S60

Event Name	FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11				FY 12			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MOLLE DT/OT																																
Chemical Protective Ensemble OT																																
Extreme Cold Weather Stove Technical Testing																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Modular Boot System LRIP			3-4Q	1-2Q				
Glove Enhancement Initiative - User Evaluations			1-4Q	1-4Q				
MOLLE - DT/OT				1-3Q				
Chemical Protective Ensemble OT				2-3Q				
Extreme Cold Weather Stove - Technical Testing			1-2Q					

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0604601A - Infantry Support Weapons

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S61 ACIS ENGINEERING DEVELOPMENT	0	0	2248	2291	2523	2620	2706	2805	0	15193

A. Mission Description and Budget Item Justification: This project provides Engineering Development programs with improved aviator safety, survivability, and human performance that amplify the warfighting effectiveness and facilitates full-spectrum dominance of the Army aircraft including the AH-64 Apache/Longbow, CH-47 Chinook, UH/HH-60 Blackhawk, Light Utility Helicopter, and Armed Reconnaissance Helicopter. These programs include soldier systems and equipment which are unique and necessary for the sustainment, survivability, and performance of Army aircrews and troops on the future integrated battlefield. The Air Warrior program will provide the aircrew with a systems approach to noise protection, three-dimensional audio and external audio capability, microclimate conditioning, crash and post-crash survivability, concealment and environmental protection, ballistic protection, night vision capability and heads-up display, directed energy eye protection and flame/heat protection. Air Warrior will enable the Army Aviation Warfighter to meet the approved Operational Requirements Document mission length of 5.3 hours with aviators in full chemical/biological protective gear. Preplanned block improvements integrating new technologies into the Air Warrior ensemble will continue to enhance and maximize aircrew mission performance, comfort, aircrew station interface, safety, and survivability. These funds also resource improved laser protection against emerging new threat systems and product improvement of existing helmets to improve performance and increased commonality. Maximum advantage will be taken of simulation to reduce program technical risk through early user evaluation and to reduce program design and test cost and schedules. This program does not duplicate any aircraft platform program efforts. Both joint and service independent efforts continue to be pursued under the scope of this program.

Funds for prior year efforts were funded in PE 0604801A (Project C45 - Aircrew Integrated Systems).

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue the integration of preplanned Air Warrior Block 3 improvements.	0	0	2248	2291
Totals	0	0	2248	2291

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, A PE 0604801A PROJ DC45 EMD	3256	3239	0	0	0	0	0	0	0	6495
RDTE, A PE 0604801A, PROJ DB45 - Adv Dev	7101	6176	0	0	0	0	0	0	0	13277
RDTE, A PE 0603827A, PROJ S51 - Adv Dev	0	0	3374	3443	3525	3619	4044	4040	Continuing	Continuing
Aircraft Procurement, Army SSN AZ3110 - ACIS	32848	29694	29352	34821	42127	38873	56594	42268	Continuing	Continuing

C. Acquisition Strategy: System Development and Demonstration efforts include the completion of the Air Warrior Electronic Data Manager (EDM) qualification testing to transition into Full Rate Production, the Aircraft Wireless Intercom System (AWIS), and integration of the Microclimate Cooling System onto the Army's HH-60L Medivac Helicopter.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Air Warrior Development	C - CPFF	Various	0	0		1698	1Q	1679	1Q	0	3377	0
Subtotal:			0	0		1698		1679		0	3377	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR and Project Order	Various Government	0	0		144	1-4Q	150	1-4Q	0	294	0
Subtotal:			0	0		144		150		0	294	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Developmental Testing	MIPR	Various	0	0		200	1-2Q	250	1-2Q	0	450	0
Subtotal:			0	0		200		250		0	450	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Administration	Allotment	Various Government	0	0		206	1-4Q	212	1-4Q	0	418	0
Subtotal:			0	0		206		212		0	418	0

Project Total Cost:			0	0		2248		2291		0	4539	0
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) Block 1 First Unit Equipped	▲ 1 3-4 CAV (25 ID)																															
Block 1 Fielding					Block 1 Fielding																											
Block 2 RDT&E					Block 2 RDT&E																											
Block 2 Test and Evaluation					Block 2 DT/OT																											
(2) EDM Prod Award Blk 2									▲ 2 Block 2 Contract Award																							
(3) AWIS Prod Award Blk 2													▲ 3 Block 2 Contract Award																			
Block 2 Fielding													Block 2 Fielding																			
(4) High Level Ballistic Protection Prototype Dev & Test Contract Awd, (5) High Level Ballistic Protection Prototype Dev & Test Contract Awd	▲ 4				▲ 5																											
(6) Block 3 SI Award					▲ 6 Block 3 System Integrator (SI)Contract																											
Block 3 Component Dev and Dem					Block 3 RDT&E																											
Block 3 Test and Evaluation									Block 3 DT/OT																							
Block 3 Production																	Block 3 Production															
Block 3 Fielding																					Block 3											
(7) VCOP Components Demo in Adv Prototyping Engr Experimentation Sim, (8) VCOP Components Demo in Adv Prototyping Engr Experimentation Sim	▲ 7				▲ 8																											

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Advanced Component Development of Air Warrior Block 2 and 3 Improvements.	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
System Development and Demonstration of Air Warrior Block 2 and 3 Improvements.	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
High Level Ballistic Protection Prototype Development and Testing.	3Q	3Q						
Block 1 Air Warrior First Unit Equipped.	3Q							
Block 3 Prime Integrator Award.	4Q							
Block 2 Production Contract Award - EDM.			1Q					
Block 2 Production Contract Award - AWIS.				2Q				
Block 2 Fielding.			3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	
Block 3 Production Contract.							1Q	
Block 3 Fielding.								1-4Q

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S62 OBJECTIVE INDIVIDUAL COMBAT WEAPON	0	0	5126	1786	2716	0	0	0	0	9628

A. Mission Description and Budget Item Justification: The Objective Individual Combat Weapon (OICW) is a program to develop a dual barrel weapon system allowing the Soldier to fire both kinetic energy and air bursting munitions from the same weapon system. The integrated weapon providing both capabilities is the XM29 Integrated Air Burst Weapon.

This project funds System Development and Demonstration (SDD) of the XM-25 Air Burst Assault Weapon, which is the second increment of the OICW program. The XM-25 Air Burst Assault Weapon is the air burst portion of the XM-29 Integrated Air Burst Weapon. The XM-25 dramatically increases Soldier lethality, survivability and standoff. The air burst weapon provides the Soldier with a 300-500% increase in hit probability to defeat point, area and defilade targets out to approximately 500 meters. The XM25 weapon includes revolutionary high explosive air bursting munitions and an integrated, multifunctional, all environment, full-solution target acquisition / fire control system.

This project is a spiral development program which will transition from Technology Development to SDD upon Milestone B approval in FY05.

Funds for prior year SDD efforts were funded under PE 0604802A (Project D134 - Objective Individual Combat Weapon).

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Program Development	0	0	339	0
Design and Development and Engineering	0	0	3187	1155
Fabrication for Testing	0	0	600	231
Pre-Production Test	0	0	1000	400
Totals	0	0	5126	1786

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE: PE 0603802A, Project AS3	29906	6040	0	0	0	0	0	0	0	35946
RDTE: PE 0604802A, Project D134	0	15762	0	0	0	0	0	0	0	15762
WTCV: SSN G16102 XM-8 Carbine (5.56mm)	0	498	32484	32681	122568	138212	143864	146037	0	616344

RDTE Appropriation: PE 0603802A (Projects AS3 and D134) funds increment one (XM-8) and increment two (XM25) of the OICW Program.

C. Acquisition Strategy: The XM-25 Air Burst Assault Weapon will reach Milestone B in FY 2005. The System Development and Demonstration (SDD) phase will complete development of the XM-25 weapon system and verify training solution for the Milestone C approval in FY 2008.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . XM25 - Design and Development	Cost Plus Fixed Fee	ATK Minneapolis, MN	0	0		3087	2Q	1125	2Q	0	4212	0
Subtotal:			0	0		3087		1125		0	4212	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . XM25 - Engineering Support	MIPR	Multiple	0	0		500	1-3Q	146	1-3Q	0	646	0
Subtotal:			0	0		500		146		0	646	0

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BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604601A - Infantry Support Weapons	PROJECT S62
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . XM25 - Pre-Production Test	MIPR	Various	0	0		1000	3Q	400	1-3Q	0	1400	0
Subtotal:			0	0		1000		400		0	1400	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	In-House	PM Soldier Weapons Picatinny Arsenal, NJ	0	0		539	1-3Q	115	1-3Q	0	654	0
Subtotal:			0	0		539		115		0	654	0

Project Total Cost:			0	0		5126		1786		0	6912	0
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
SDD																																								
(1) MS C																																								
LRIP																																								

Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Design and Development and Engineering Tests			1Q					
Fabricate			2-4Q					
Test and Evaluation				1-4Q	1-2Q			
Milestone C					2Q			
LRIP					3-4Q			

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S63 SMALL ARMS IMPROVEMENT	0	0	6239	2392	13904	4811	14740	10930	0	53016

A. Mission Description and Budget Item Justification: This program provides funds for the demonstration of engineering development models or integrated commercial items designed to enhance lethality, target acquisition, fire control, training effectiveness, and reliability for current small arms weapon systems and ammunition. Future programs will provide enhancements to weapons, fire control, ammo and optics through improved technology associated with obscurants, reconnaissance, observation, non-lethal and lethal ammo, and electronics. Current small arms include a variety of personal defense weapons (9mm), individual weapons (5.56mm), crew-served weapons (7.62mm and 40mm), and related items such as fire control equipment, training devices, and ammunition. Current efforts focus on improvements to current weapons such as the M249 Squad Automatic Weapon, the M16 Rifle, the M4 Carbine, the MK19 Grenade Machine Gun, and M240 Medium Machine Guns. Other improvements are included as well, such as enhancements to mounts and ammunition (to include thermobarics). Future programs include Light Weight Ammo, Sniper Weapons Improvements, Air Burst Ammo, Light Weight Medium Machine Gun (FY07 new start effort), M249 Short Range Training Ammo, Anti-Materiel Payload Rifle (FY06 new start effort), and rifle / carbine improvements. Platform Integration efforts include the development of a High Mobility Multi Wheeled Vehicle Auxiliary Weapon Mount (HMMWV / HAWM), an improved pedestal for machine gun mounts allowing 360 degree target engagement, a swing arm, a MK93/MK64 cradle adapter providing the Soldier with the capability of using M249 and M240 machine guns, and Advanced Crew Served Weapon Integration on a CROWS family of systems. Future efforts will also be pursued for alternate integration of M249 mounts, M240 mounts, MK19 mounts and XM307 mounts with numerous alternate platforms.

Funds for prior year efforts in this project were funded in PE 0604802 (Project DAS1 - Small Arms Improvements).

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
M249 Short Range Training Ammunition	0	0	0	0
- DT	0	0	150	0
- Safety Confirmation	0	0	10	0
- Limited User Test	0	0	50	0
- System Evaluation Report	0	0	10	0
- Milestone C	0	0	30	0
Platform Integration of Crew Served Weapons	0	0	0	0
- HMMWV Imp Auxiliary Weapon Mount	0	0	0	0
- Market Research/Survey/Evaluation	0	0	100	0
- In House Design	0	0	250	0

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Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
- Prototypes	0	0	250	0
- Preliminary Testing	0	0	50	0
- Design Improvement	0	0	70	0
- Manufacturing	0	0	100	0
- Tech Testing	0	0	250	0
- Safety Cert	0	0	50	0
- ACSW Integration on CROWS	0	0	0	0
- CROWS/ACSW Interface Requirement Development	0	0	75	0
- Hardware/Software Development	0	0	786	0
- Fabrication	0	0	150	0
- Integration and Test	0	0	250	0
- Demonstration	0	0	75	0
- Swing Arm/MK64 Cradle/Universal Pintle Adapter	0	0	0	0
- Market Research/Survey/Evaluation	0	0	0	50
- In House Design	0	0	0	100
- Prototypes	0	0	0	100
- IPR	0	0	0	50
- Preliminary Testing	0	0	0	50
- Manufacturing	0	0	0	203
- Tech Test	0	0	0	353
- Operational Test	0	0	0	353
- Safety Release	0	0	0	50
Thermobaric Cartridges	0	0	0	0
- Engineering Test Report/Assessment	0	0	250	0
Small Caliber LT WT Ammo	0	0	0	0
- Contract Award, Option I	0	0	100	0
- Sample Fabrication	0	0	280	0
- Lethality Test/Reliability Test	0	0	110	0
- Design Review/Eng	0	0	465	0
- Manufacture DTI Qty	0	0	370	0
- DT I	0	0	0	200
- Design Review	0	0	0	75
- Eng Analysis	0	0	0	304

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Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
LT WT Medium Machine Gun - FY07 New Start	0	0	0	0
- Program Transition	0	0	0	75
- Support Analysis of Alternatives	0	0	0	50
- Support Development of ICD	0	0	0	80
- Prepare Program Documentation/MS B	0	0	0	114
- Prepare Request for Proposal	0	0	0	90
- Proposal Evaluation	0	0	0	95
Anti-Materiel Payload Rifle - FY06 New Start	0	0	0	0
- Engineering Development	0	0	532	0
- Contracts	0	0	226	0
Rifle/Carbine - Optics Enhancements	0	0	0	0
- Evaluate/Downselect	0	0	250	0
- Award Contract/Produce Hardware	0	0	400	0
- DT/OT Independent Evaluation	0	0	350	0
- Prepare Program Documentation/MS C	0	0	200	0
Totals	0	0	6239	2392

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
WTCV, GZ1290, Squad Auto Wpn (MODS)	13058	3369	3095	5314	9421	4181	5141	3190	0	46769
WTCV, GZ2800, M16 Rifle MODS	18386	2336	1970	1024	3925	1026	3599	3602	0	35868
WTCV, GB3000, MK19 MODS	3816	4220	5444	3359	6581	7952	8771	8953	0	49096
WTCV, GZ1300, Med MG (MODS)	3922	3396	7089	5355	14168	0	4319	3602	0	41851
WTCV, GB3007, M4 Carbine MODS	48249	13724	44817	17064	13905	6332	13733	9799	0	167623
RDTE, AS1 - Small Arms Improvements	8089	10895	0	0	0	0	0	0	0	18984

C. Acquisition Strategy: Primary strategy is to mature and finalize design efforts, award RDT&E hardware contracts, and test and evaluate systems that will result in type classification and follow-on production contract awards.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Hardware Development	TBD	Various	0	0		2660	1-3Q	590	1-3Q	Continue	3250	0
Subtotal:			0	0		2660		590		Continue	3250	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development	MIPR	RDECOM - ARDEC, Picatinny Arsenal, NJ	0	0		967	1-3Q	842	1-3Q	0	1809	0
b . Logistics	MIPR	TACOM, Rock Island Arsenal, IL	0	0		325	1-3Q	20	1-3Q	0	345	0
c . Human Research and Eng Directorate	MIPR	Aberdeen Proving Ground (APG), MD	0	0		98	1-3Q	60	1-3Q	0	158	0
Subtotal:			0	0		1390		922		0	2312	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DT	MIPR	Developmental Test Command (DTC), Aberdeen Proving Ground (APG), MD	0	0		542	1-3Q	380	1-3Q	Continue	922	0
b . OT	MIPR	Army Test and Evaluation Command (ATEC), Alexandria, VA	0	0		140	1-3Q	0	1-3Q	0	140	0
c . Validation Testing	MIPR	Developmental Test Command (DTC), Aberdeen Proving Ground (APG), MD	0	0		657	1-3Q	40	1-3Q	0	697	0
Subtotal:			0	0		1339		420		Continue	1759	0

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	In House	PM Soldier Weapons, Picatinny Arsenal, NJ	0	0		775	1-3Q	400	1-3Q	0	1175	0
b . Travel	In House	PM Soldier Weapons, Picatinny Arsenal, NJ	0	0		75	1-3Q	60	1-3Q	0	135	0
Subtotal:			0	0		850		460		0	1310	0
Project Total Cost:			0	0		6239		2392		Continue	8631	0

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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
XM1037 Short Range Training Round for M249																																
SDD																																
(1) MSC																																
Platform Integration of Crew Served Weapons																																
SDD																																
Small Caliber Light Weight Ammo																																
DT																																
(2) LUT, (3) MSC																																
Light Weight Medium Machine Gun																																
SDD																																
Rifle Carbine Improvements, Optics Enhancements																																
SDD																																
(4) MS C																																

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
M249 Short Range Training Ammunition								
- DT			2-3Q					
- Safety Confirmation			2Q					
- Limited User Test			3Q					
- System Evaluation Report			4Q					
- Milestone C			4Q					
Platform Integration of Crew Served Weapons								
- HMMWV Imp Auxiliary Weapon Mount								
- Market Research/Survey Evaluation			1Q					
- In House Design			1-2Q					
- Prototypes			2Q					
- Preliminary Testing			2-3Q					
- Design Improvement			3Q					
- Manufacturing			3-4Q					
- Tech Testing			4Q					
- Safety Cert			4Q					
- ACSW Integration on CROWS								
- CROWS/ACSW Interface Require Developmt			1Q					
- Hardware/Software Development			1-3Q					
- Fabrication			3Q					
- Integration and Test			4Q					
- Demonstration			4Q					
- Swing Arm/MK64 Cradle/Universal Pintle Adapter								
- Market Survey/Research				1Q				
- In House Design				1-2Q				
- Prototypes				2Q				
- IPR				2Q				
- Preliminary Testing				2-3Q				
- Manufacturing				3Q				

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

PROJECT
S63

<u>Schedule Detail (continued)</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
- Tech Test				3-4Q				
- Operational Test				4Q				
- Safety Release				4Q				
- Minigun/Javelin CROWS Mounts								
- Safety Release					1Q			
- IPR					1Q			
- Survey					1Q			
- In-House Design					2Q			
- Prototypes					2Q			
- Val Test					2-3Q			
- Redesign					3Q			
- Manufacturing					3Q			
- Tech Testing					4Q			
- Improved HMMWV Ring Mount								
- Operational Test						1Q		
- Safety Release						2Q		
- IPR						2Q		
Thermobaric Cartridges								
- Engineering Test Report/Assessment			1Q					
Small Caliber LT WT Ammo								
- Contract Award, Option I			1Q					
- Sample Fabrication			2-3Q					
- Lethality Test/Reliability Test			3Q					
- Design Review/Eng			4Q					
- Manufacture DTI Qty			4Q					
- DT I				3Q				
- Design Review				4Q				
- Eng Analysis				4Q				
- Contract Award, Option 2					1Q			
- Manufacture DT II Qty					1-3Q			

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

PROJECT
S63

Schedule Detail (continued)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
- DT II					3-4Q			
- Live Fire Test/Final Hazard Classification					3-4Q			
- Prepare MS C IPR Package					4Q	1-2Q		
- LUT					4Q			
- MS C IPR/TC-STD						2Q		
LT WT Medium Machine Gun								
- Program Transition				1-2Q				
- Support Analysis of Alternatives				1-2Q				
- Support Development of ICD				1-2Q				
- Prepare Program Documentation/MS B				2-4Q				
- Prepare Request for Proposal				2-3Q				
- Proposal Evaluation				4Q	1Q			
- Contract Award (Phase 1)					1Q			
- Fabricate Test Hardware					1-2Q			
- Design Confidence Test					3-4Q			
- Contract Award (Phase II)					4Q			
- Design Refinements					4Q	1Q		
- Critical Design Review/IPR						2Q		
- Fabricate DT/OT Hardware						2-3Q		
- DT/OT						3-4Q	1Q	
- Test Reports/Evaluations							1-2Q	
- Prepare Program Documentation/MS C							1-2Q	
Anti-Materiel Payload Rifle								
- Engineering Development			1-2Q					
- Contracts			4Q					
Rifle/Carbine - Optics Enhancements - Transition From 604802 DAS1								
- Evaluate/Downselect			1Q					
- Award Contract/Produce Hardware			1-2Q					
- DT/OT Independent Evaluation			2-4Q					

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604601A - Infantry Support Weapons

PROJECT
S63

<u>Schedule Detail (continued)</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
- Prepare Program Documentation/MS C			4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604604A - MEDIUM TACTICAL VEHICLES				PROJECT H07		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
H07 FAMILY OF MED TAC VEH	4169	14046	1886	1896	1980	1914	1782	1844	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element supports continued modernization of the Army's medium truck fleet. The Family of Medium Tactical Vehicles (FMTV) replaces aging M44 Series 2 1/2-ton trucks, M39, and M809 Series 5-ton trucks that are beyond their economic useful life of 20-22 years. FMTV also provides follow-on to the M939/A2 Series 5-ton truck. FMTV fills 2 1/2-ton Light Medium Tactical Vehicle (LMTV) and 5-ton truck Medium Tactical Vehicles (MTV) requirements, resolves operational deficiencies and operates throughout the theater as multi-purpose transportation vehicles used by combat, combat support and combat service support units. This system rapidly deploys worldwide and operates on primary and secondary roads, trails, and cross-country terrain in all climatic conditions. The funds support continuous product improvements, technology insertion, and new capabilities for FMTV. FY06/07 funding will be used to work on the FMTV A2 demonstrator projects and Limited User Tests.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Load Handling System (LHS) (Hardware Development / Test)	1004	0	0	0
Survivability Improvements (Engr Studies / Prototype Analysis)	105	0	0	0
Dump 10 Ton (Hardware Development / Test / TDP)	1465	33	0	0
Alternative Propulsion System - Hybrid (Engr Studies/Component Integration)	500	500	0	0
A2 Demonstrator (Prototype Development / Test)	1095	11495	376	1398
FMTV Weight/Cost Reduction	0	2018	0	0
Limited User Test (LUT) (LHS,ExVan,10T Dump)	0	0	1510	498
Totals	4169	14046	1886	1896

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604604A - MEDIUM TACTICAL VEHICLES

PROJECT
H07

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	2854	1924	1917
Current Budget (FY 2006/2007 PB)	14046	1886	1896
Total Adjustments	11192	-38	-21
Net of Program/Database Changes			
Congressional Program Reductions	-205		
Congressional Rescissions			
Congressional Increases	11800		
Reprogrammings			
SBIR/STTR Transfer	-403		
Adjustments to Budget Years		-38	-21

FY 2004 Adjustments:
 FY 2004 Reprogramming \$ + 175

FY 2005 Adjustments:
 Congressional Increases + 11800

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604604A - MEDIUM TACTICAL VEHICLES

PROJECT
H07

C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA1 Family of Medium Tactical Vehicles (D15500)	324680	593613	449601	634140	624937	567453	680227	553247	Continue	Continue

D. Acquisition Strategy: The engineering contractual efforts will be on a Cost Plus Fixed Fee (Level of Effort) basis. The procurement of vehicle platforms will use the current multiyear Firm Fixed Price (FFP) production contract.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604604A - MEDIUM TACTICAL VEHICLES

PROJECT
H07

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Load Handling System (LHS)	SS-CPFF	Stewart & Stevenson, Sealy, TX	3319	0		0		0		0	3319	0
b . Dump - 10T - Prototype Dev	SS-CPFF	Stewart & Stevenson, Sealy, TX	3290	33	1Q	0		0		0	3323	0
c . Alternative Propulsion System	C-CPFF	Sverdrup Tech, Inc Ft. Walton Beach, FL	759	500	1Q	0		0		0	1259	0
d . A2 Demonstrator	SS-FFP	General Purpose Vehicles, LLC New Haven, MI	1095	2079	2Q	376	1Q	1398	1-2Q	0	4948	0
e . A2 Demonstrator	SS-CPFF	Stewart & Stevenson, Sealy, TX	0	9416	2-4Q	0		0		0	9416	0
f . FMTV Weight/Cost Reduction	TBD	T B D	0	2018	2-4Q	0		0		0	2018	0
g . Other			2136	0		0		0		0	2136	0
Subtotal:			10599	14046		376		1398		0	26419	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604604A - MEDIUM TACTICAL VEHICLES

PROJECT
H07

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Load Handling System	MIPR/PO	ATC, Aberdeen Proving Grounds, MD	2235	0		0		0		0	2235	0
b . Dump - 10T - PPQT	MIPR/PO	ATC, Aberdeen Proving Grounds, MD	2144	0		0		0		0	2144	0
c . Limited User Test - LUT	MIPR/PO	ATEC , Various	0	0		1510	1Q	498	1Q	0	2008	0
Subtotal:			4379	0		1510		498		0	6387	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604604A - MEDIUM TACTICAL VEHICLES

PROJECT
H07

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			14978	14046		1886		1896		0	32806	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604604A - MEDIUM TACTICAL VEHICLES

PROJECT
H07

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
RESEARCH, DEVELOPMENT, TEST & EVALUATION																																
Load Handling System (LHS), LHS ExVan LUT	DT&E								LHS & ExVan LUTs																							
Dump 10T, Dump 10T LUT					DT&E				LUT																							
A2 Demonstrator Development																																
Technology Insertion																																
PROCUREMENT																																
A1 Production																																
A1 Rebuy Production																																
(1) Fielding IPR																																
(2) FUE																																
Follow-on Production																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604604A - MEDIUM TACTICAL VEHICLES

PROJECT
H07

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
FMTV - Load Handling System (LHS) - Developmental Testing and Evaluation	1-4Q							
Dump 10T - Developmental Testing and Evaluation	2-4Q	1Q						
Limited User Test (LUT) - LHS and ExVan			1-3Q					
Limited User Test (LUT) - 10T Dump				1Q				
A2 Demonstrator Development	2-4Q	1-4Q	1-4Q	1-4Q	1Q			
Technology Insertion					1-4Q	1-4Q	1-4Q	1-4Q
A1 Full Rate Production (FRP)	1-4Q	1Q						
A1 Rebuy Production	2-4Q	1-4Q	1-4Q	1-4Q	1-4Q			
Fielding IPR		1Q						
First Unit Equipped (FUE)		2Q						
Follow-On Production					2-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604609A - Smoke, Obscurant and Target Defeating Sys-
 Eng Dev**

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	11645	3639	0	5216	6603	5559	474	472	0	41032
198 TARGET DEFEATING SYSTEM	330	0	0	5216	6603	5559	474	472	0	18980
200 SMOKE/OBSCURANT SYSTEM	11315	3639	0	0	0	0	0	0	0	22052

A. Mission Description and Budget Item Justification: This program element supports the conduct of System Development and Demonstration (SDD) of logistically supportable, high performance smoke and obscurant agents, munitions, and devices to improve the survivability of the combined armed force and complement combined weapons systems. The program element supports critical management studies and analyses that are conducted on a continuing basis to ensure that engineering and manufacturing development efforts are targeted against the emerging threat. Program element supports the conduct of SDD in smoke and obscurant agents, munitions, and devices to improve the survivability of the combined armed forces, complement combined weapon systems, and enhance force effectiveness and combat power.

U.S. Forces must be able to effectively neutralize and degrade energy weapon systems and electro-optical systems/smart weapons that operate in the full range of the electromagnetic spectrum. Improvements are sought across the entire multi-spectral range from visual through infrared (IR) and millimeter wavelengths (MMW) radar for incorporation into self-protection large area and projected smoke systems. The smoke obscurant technologies supported by this program element enhance smoke systems as force multipliers.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604609A - Smoke, Obscurant and Target Defeating Sys-Eng Dev

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	3798	0	5156
Current Budget (FY 2006/2007 PB)	3639	0	5216
Total Adjustments	-159	0	60
Net of Program/Database Changes			
Congressional Program Reductions	-55		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-104		
Adjustments to Budget Years			60

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604609A - Smoke, Obscurant and Target Defeating Sys-Eng Dev	PROJECT 198
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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
198 TARGET DEFEATING SYSTEM	330	0	0	5216	6603	5559	474	472	0	18980

A. Mission Description and Budget Item Justification: This project supports the conduct of System Development and Demonstration (SDD) of smoke and obscurant agents to provide current and next generation obscurant systems operating at extended distances (15-30 km) to disrupt, disable and defeat the threat reconnaissance, surveillance, targeting and acquisition capabilities. Funding supports the development of systems to appropriately deliver distant obscurant to the battlefield. This will provide options to commanders that are effective and efficient throughout the battlespace.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY04: Conducted Management Studies to support preparation of requirement documents.	330	0	0	0
FY07: Prepare, conduct and complete Milestone B.	0	0	0	2127
FY07: Award SDD contract.	0	0	0	3089
FY07:	0	0	0	0
Totals	330	0	0	5216

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604609A - Smoke, Obscurant and Target
Defeating Sys-Eng Dev

PROJECT
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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, A, Budget Activity 2, PE 0602622A, Project 552	3424	0	0	3661	3716	3798	0	0	0	14599
Other Procurement Army, OPA 3, MX1000, Family of Tactical Obscuration Devices	0	0	0	10609	29385	42652	33667	28212	Continuing	Continuing

C. Acquisition Strategy: Engineering development will begin in FY07 with a full and open competition contract for engineering design, construction and testing of prototype systems.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604609A - Smoke, Obscurant and Target Defeating
Sys-Eng Dev

PROJECT
198

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Hardware Development	TBD	TBD	0	0		0		3089	3Q	0	3089	0
Subtotal:			0	0		0		3089		0	3089	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering support of hardware development.	Inhouse	RDECOM, ECBC, Edgewood, MD	0	0		0		1127	1Q	0	1127	0
Subtotal:			0	0		0		1127		0	1127	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604609A - Smoke, Obscurant and Target Defeating
Sys-Eng Dev

PROJECT
198

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Conducted Management Studies.	Inhouse	JPMNBCCA, APG,Edgewood, MD	328	0		0		0		0	328	0
b . Prepare and conduct Milestone B.	Inhouse	JPMNBCCA, APG, Edgewood, MD	0	0		0		1000	1Q	0	1000	0
Subtotal:			328	0		0		1000		0	1328	0

Project Total Cost:			328	0		0		5216		0	5544	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604609A - Smoke, Obscurant and Target Defeating Sys-Eng Dev

PROJECT
198

Event Name	FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11				FY 12			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Design and Fabricate Systems for EDT																																
Conduct EDT																																
Redisgn and Fabricate Systems for PQT																																
Conduct LOG Demo																																
Conduct PQT																																
(1) Milestone C																									▲							

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604609A - Smoke, Obscurant and Target Defeating
Sys-Eng Dev

PROJECT
198

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Design & Fabricate Systems for EDT				1-4Q				
Conduct EDT					1-2Q			
Redesign & Fabricate Systems for PQT					2-4Q			
Conduct LOG Demo					4Q			
Conduct PQT					4Q	1-3Q		
Milestone C						4Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604609A - Smoke, Obscurant and Target					PROJECT 200		
			Defeating Sys-Eng Dev							
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
200 SMOKE/OBSCURANT SYSTEM	11315	3639	0	0	0	0	0	0	0	22052

A. Mission Description and Budget Item Justification: This project supports the conduct of System Development and Demonstration (SDD) in smoke and obscurant agents, munitions, and devices to improve survivability of the combined armed forces, complement combined weapon systems, and enhance force effectiveness and combat power. Funding supports the development of millimeter wavelength (MMW) radar obscurant for installation on the M56 and any other required vehicle platforms. The MMW obscurant can obscure a target from emerging threat systems which use x-band, Ku-band, Ka-band, and W-band radar sensors.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY04: MMW - Conducted engineering design tests.	413	0	0	0
FY04: MMW - Completed engineering design program and logistics program evaluation.	2012	0	0	0
FY04: MMW - Fabricated and installed MMW systems on six M56s for production qualification test. (Estimated value \$150K each MMW prototype).	4490	0	0	0
FY04: MMW - Procured necessary MMW material for contractor and Government tests.	1200	0	0	0
FY04-FY05: MMW - Conduct production qualification test.	2000	1341	0	0
FY04-FY05: MMW - Conduct toxicological and environmental studies.	1200	700	0	0
FY05: MMW - Complete test and evaluation, system engineering and conduct Milestone C.	0	1598	0	0
Totals	11315	3639	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604609A - Smoke, Obscurant and Target
Defeating Sys-Eng Dev

PROJECT
200

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, A Budget Activity 2, PE 0602622A, Project 552 Smoke/Novel Munitions	3424	3476	0	0	0	0	0	0	Continuing	Continuing
Modification MMW MA4501	0	0	7797	10072	4946	0	4626	1544	0	28985

C. Acquisition Strategy: Contract initiated in FY 2000 with a full and open competitive contract for engineering design, construction, and testing of prototype systems mounted on the M56 Smoke System.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604609A - Smoke, Obscurant and Target Defeating
Sys-Eng Dev

PROJECT
200

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MMW - Conducts M56 hardware development	C/CPFF	Titan Industries, Deland, FL	17907	1000		0		0		0	18907	0
b . MMW - Evaluates and designs MMW system integration planning	In house	JPMNBCCA, APG, MD	1578	300	1Q	0		0		0	1878	0
Subtotal:			19485	1300		0		0		0	20785	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MMW - Environmental and Toxicological studies	In house effort	SBCCOM, APG, MD	2199	700	1Q	0		0		0	2899	0
b . MMW - Human factors design efforts	In house effort	SBCCOM, APG, MD	260	50	1Q	0		0		0	310	0
Subtotal:			2459	750		0		0		0	3209	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604609A - Smoke, Obscurant and Target Defeating
Sys-Eng Dev

PROJECT
200

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MMW - Prototype evaluation (PQT)	OGA	DTC, APG, MD	2627	1041	1Q	0		0		0	3668	0
b . MMW - Engineering design testing - Contractor	C/CPFF	Titan Industries, Deland, FL	2100	0		0		0		0	2100	0
Subtotal:			4727	1041		0		0		0	5768	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MMW - Project Management Personnel	In house	JPMNBCCA, Edgewood, MD	2826	348	1Q	0		0		0	3174	0
b . MMW - Project Management Personnel	C/CPFF	Titan Industries, Deland, FL	836	200	1Q	0		0		0	1036	0
Subtotal:			3662	548		0		0		0	4210	0

Project Total Cost:			30333	3639		0		0		0	33972	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604609A - Smoke, Obscurant and Target Defeating Sys-Eng Dev

PROJECT
200

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Design and construct engineering design test systems	█																															
Conducted engineering design tests	█																															
Constructed prototype systems for PQT/IOTE	█	█	█																													
Conduct PQT (1) MS C																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604609A - Smoke, Obscurant and Target Defeating
Sys-Eng Dev

PROJECT
200

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Conducted engineering design tests.	1Q							
Constructed prototype systems for PQT.	1-3Q							
Conduct PQT.	4Q	1-4Q						
Conduct Milestone C and system acceptance		4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	16282	19631	3415	7462	1933	1934	2932	2927	Continuing	Continuing
659 FAMILY OF HVY TAC VEH	1402	10546	0	3561	0	0	0	0	Continuing	Continuing
65A MOVEMENT TRACKING SYSTEM (MTS)	0	2375	2427	2892	923	926	896	893	0	11332
E49 HEMTT	13940	6710	0	0	0	0	0	0	0	34472
E50 TRAILER DEVELOPMENT	940	0	988	1009	1010	1008	2036	2034	0	9025

A. Mission Description and Budget Item Justification: This program element aligns system development and demonstration of Heavy Tactical Vehicles with Future Force requirements to support combat and combat support missions. These missions include the following: line haul, local haul, and unit resupply. These trucks transport water, ammunition, and general cargo over all terrain and throughout the battle-space. Funding in Project 65A is for the development of the Movement Tracking System (MTS). Funding in Project 659 supports the Heavy Tactical Vehicle A3 program as well as the 21st Century Truck and Jumpstart FTTS ACTD programs. Funding in Project E50 supports the continued modernization of the Army's trailer fleets and supports the continuous product improvements, technology insertion, and new capabilities for tactical trailers.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	2479	3467	43036
Current Budget (FY 2006/2007 PB)	19631	3415	7462
Total Adjustments	17152	-52	-35574
Net of Program/Database Changes			
Congressional Program Reductions			
Congressional Rescissions	-285		
Congressional Increases	18000		
Reprogrammings			
SBIR/STTR Transfer	-563		
Adjustments to Budget Years		-52	-35574

Funding: FY2005: Increase of \$17152K (Congressional Increase for HEMTT A3, HETS, PLS & FTTS)
 FY2006: Decrease of \$52K of the Movement Tracking System (MTS).
 FY2007: Increase of \$93K for FHTVs.
 FY2007: Increase of 2892K for MTS.
 FY2007: Decrease of \$38577K in the Future Tactical Truck System Program.
 FY2007: Increase of \$18K for trailer development.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
659

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
659 FAMILY OF HVY TAC VEH	1402	10546	0	3561	0	0	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification: The FY2007 funding also supports the Heavy Tactical Vehicle A3 program. The existing Heavy Tactical Vehicle programs require insertion of current, mature technology to increase the capability of the vehicle toward the future force requirements. This technology infusion will be accomplished through the A3 program within the objective level capabilities of the current Operational Requirements Documents. The Army's next generation of tactical truck, as part of the Army's Tactical Wheeled Vehicle Modernization Strategy, leverages the 21st Century Truck and Jumpstart FTTS ACTD programs. These programs have developed new vehicle capabilities by integrating key technologies such as hybrid electric engines, advanced lightweight materials, intelligent control systems, and embedded diagnostics into military vehicles.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Development of the engineering and prototype models of the M915 Crew Protection Kit	102	0	0	0
Acquire prototypes for testing	500	0	0	0
Conduct prototype testing on the M915 Crew Protection Kit	800	0	0	0
Incorporate technology to advance the state of Heavy Tactical Vehicles A3 performance and perform testing	0	0	0	3561
PLS Block I Development	0	1220	0	0
HET Block I Development	0	1830	0	0
Contracts for Development and Demonstration of the FTTS MSV and UV. The contract will be for the fabrication and delivery of 2 MSVs and 2 UVs with companion trailers.	0	7496	0	0
Totals	1402	10546	0	3561

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
659

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA1 D15900, Truck, Tractor, Line Haul	24670	17845	6192	4460	1215	0	0	0	0	54382
OPA1 D16103, Movement Tracking System	19897	43731	27646	76158	29142	26176	28259	30604	0	281613
OPA1 D16500, PLS Truck	30994	12219	26833	26156	75525	55292	13997	12771	0	253787

C. Acquisition Strategy: Limited RDTE effort to support follow-on production. Funds also for developing Army's next generation of tactical truck.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
659

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	IN-HOUSE	TACOM, Warren, MI	0	0		0		0		0	0	0
b . Crew Protection Kit System Development & Demonstration Award	C-CPFF	Simula, Phoenix, AZ	1402	0		0		0		0	1402	0
c . A3 Tech Insertion	C-CPFF	TBD	0	0		0	2Q	3561	2Q	0	3561	0
d . PLS Block I Development	FFP	Oshkosh Truck, Oshkosh, WI	0	1220	3Q	0		0		0	1220	0
e . HET Block I Development	FFP	Oshkosh Truck, Oshkosh, WI	0	1830	3Q	0		0		0	1830	0
f . Contract to Develop and Demonstrate FTTS MSV and UV	FFP	TBD	0	7496		0		0		0	7496	0
Subtotal:			1402	10546		0		3561		0	15509	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
659

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			1402	10546		0		3561		0	15509	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
659

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Award SDD Contract			■																													
Testing				■	■	■	■	■																								
MTS Interface Development				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
A3 Tech Insertion													■	■	■	■																
PLS Block I Development									■	■	■	■																				
HET Block 1 Development									■	■	■	■																				
FTTS ACTD Phase II									■	■	■	■																				
Contract Awards (Hardware Options)									■	■	■	■																				
FTTS MSV-UV Build									■	■	■	■																				
Build									■	■	■	■																				
FTTS MSV/UV Delivery													■	■	■	■																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
659

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Award System Development & Demonstration contract for Crew Protection Kit	3Q							
Conduct testing on Crew Protection Kit	4Q	1-2Q						
A3 Tech Insertion				2-4Q	1Q			
PLS Block I Development		3Q	1-2Q					
HET Block I Development		3Q	1-2Q					
FTTS ACTD Phase II		2-4Q	1-2Q					
Contract Awards (Hardware Options)		2-3Q						
FTTS MSV-UV Build		2-4Q	1-2Q					
Build		2-4Q	1-2Q					
FTTS MSV/UV Delivery			1-2Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
65A

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
65A MOVEMENT TRACKING SYSTEM (MTS)	0	2375	2427	2892	923	926	896	893	0	11332

A. Mission Description and Budget Item Justification: Movement Tracking System (MTS) is a satellite based, asset visibility and situational awareness enabler that assists Combat Support/Combat Service Support (CS/CSS) commanders and their staffs. MTS identifies and tracks the location of vehicles, communicates with vehicle operators, and redirects missions on a worldwide, near real-time basis during peacetime operations and war. MTS provides the capability to link ground level operators conducting missions and commanders/managers that plan, direct, and control operations and allows for continuous CS/CSS asset visibility across the tactical area of operations. FY2006 and FY2007 funding supports development of block modifications on the MTS. This block modification will develop and test required interfaces to TC AIMS II (direct electronic interface) and GCSS-Army (direct electronic interface).

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Development of block modifications on the Movement Tracking System	0	2375	2427	2892
Totals	0	2375	2427	2892

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
65A

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA1 D16103000, Movement Tracking System (MTS)	19897	43731	27646	76158	29142	26176	28259	30604	0	281613

C. Acquisition Strategy: RDTE efforts to support block development approach through a continuous series of overlapping modular development and integration testing to include multiple interface development in support of follow-on production.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
65A

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Software development, engineering, testing, program management	C/CPIF	Comtech Mobile, Germantown, MD	0	2375	1-3Q	2427	2Q	2892	1Q	0	7694	0
Subtotal:			0	2375		2427		2892		0	7694	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
65A

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			0	2375		2427		2892		0	7694	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
65A

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11																											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																								
MTS Continuous Block Improvements																																																								
Full Fielding																																																								
Sustainment																																																								

- Prog start - FY97
- Oper T&E - Apr-Jul 00
- FY03 Fld - 18% of planned qty
- Over 2200 sys pushed to CFLCC in FY03 to spt oper in Iraq
- FY04 Fld - 14% of planned qty

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
65A

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
MTS Continuous Block Improvements		2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Full Fielding	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Sustainment	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
E49

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
E49 HEMTT	13940	6710	0	0	0	0	0	0	0	34472

A. Mission Description and Budget Item Justification: FY2004 funds the Heavy Expanded Mobility Tactical Truck (HEMTT) A3 prototype development. The HEMTT vehicle program requires insertion of current, mature technology to increase the capability of the vehicle toward the future force requirements. This program funded under Project 659 after FY 2004. Received 2005 Congressional add to continue A3 prototype development.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
HEMTT advanced technology improvement development.	3896	4215	0	0
HEMTT advanced technology improvement prototypes.	5500	1000	0	0
Testing of HEMTT advanced technology improvements.	2000	1170	0	0
Development of Condition Based Maintenance	2544	0	0	0
In House Support	0	325	0	0
Totals	13940	6710	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
E49

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA1, DA0500, Family of Heavy Tactical Vehicles	185141	84038	207096	284999	240232	221242	148020	95458	0	1466226

C. Acquisition Strategy: Limited RDTE effort to support follow-on production. Continue A3 prototype development.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
E49

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Technical Improvement Development - Government	IN HOUSE	TACOM, Warren, MI	692	285	1-4Q	0		0		0	977	0
b . Technical Improvement Development - Contractor	CPFF	Oshkosh Truck Corp., Oshkosh, WI	15392	4215	3Q	0		0		0	19607	0
c . Technical Improvement Prototypes	CPFF	Oshkosh Truck Corp., Oshkosh, WI	4084	1000	3Q	0		0		0	5084	0
d . Condition Based Maintenance Development	CPFF	DRS Laurel	2544	0		0		0		0	2544	0
Subtotal:			22712	5500		0		0		0	28212	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
E49

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . HEMTT Technical Improvement Testing	MIPR	APG, Aberdeen, MD	80	0		0		0		0	80	0
b . Test of HEMTT advanced technology improvements	CONTRACT	Oshkosh, WI	2109	1210	3Q	0		0		0	3319	0
Subtotal:			2189	1210		0		0		0	3399	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
E49

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:												
Project Total Cost:			24901	6710		0		0		0	31611	0

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
E49

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
	HEMTT TI Development																																			
HEMTT TI Prototypes																																				
HEMTT TI Testing																																				
HEMTT A3 Production																																				
(1) HEMTT A3 FUE													▲ 1																							

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
E49

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
HEMTT Technical Improvement development	1-3Q							
HEMTT Technical Improvement Prototypes	1-4Q							
HEMTT Technical Improvement Testing	4Q	1-4Q						
HEMTT A3 Production			4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
HEMTT A3 FUE				2Q				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
E50

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
E50 TRAILER DEVELOPMENT	940	0	988	1009	1010	1008	2036	2034	0	9025

A. Mission Description and Budget Item Justification: This program element supports continued modernization of the Army's trailer fleets. The funds support continuous product improvements, technology insertion, and new capabilities for tactical trailers.

Program Executive Office Combat Support and Combat Service Support (PEO-CS&CSS) is developing a Trailer Transformation Strategy as a companion to the Tactical Wheeled Vehicle Truck Strategy. Funding will include continued technical insertion of the current fleet, such as lighter weight materials and new suspension technologies, as well as development of a strategy for semi-trailer modernization by creating one scalable, modular semi-trailer that could replace a variety of different models. Improved trailers can operate more effectively when towed by improved tractors or tactical vehicles.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Feasibility testing of enhanced M800 Series Semi-Trailers	445	0	0	0
Program Integration	175	0	0	0
Program Management	200	0	0	0
Enhanced M800 Series Semi-Trailer	120	0	0	0
Current fleet technical insertion.	0	0	300	300
Design, develop and build System Prototype Demonstrator Trailer(s)	0	0	688	709
Totals	940	0	988	1009

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
E50

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA 1 D00700 Semi-Trailer LB 40T M870A3	1061	1531	582	433	0	0	0	0	0	3607
OPA 1 D01500 Semi-Trailer Flatbed 22.5T M871A3	19888	5931	4089	3801	9295	10228	3331	3334	0	59897
OPA 1 D01600 Semi-Trailer Flatbed 34T M872A4	8361	1744	1378	815	870	6695	0	0	0	19863

M872A4
 Initial efforts relate to flatbed trailers; however, any member of the tactical trailer fleet may be affected.

C. Acquisition Strategy: Conduct feasibility testing on existing tactical semi-trailers. Identify enhanced transportability and safety concepts and other responses to field issues. Modify existing equipment or develop new equipment. The ultimate goal is to develop and test improvements, acquire necessary technical data, and place improved hardware into production.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
E50

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Integrator	Firm Fixed Price (FFP)	Kalyn Siebert. Gatesville, TX	175	0		0		0		Continue	175	Continue
b . Program Management	In-House	TACOM-WRN	200	0		0		0		Continue	200	Continue
c . Enhanced M800 Series Semi-Trailer	Firm Fixed Price (FFP)	Davis Technologies, Inc, Addison, TX.	120	0		0		0		Continue	120	Continue
d . M870A3 Suspension testing	MIPR	Aberdeen Test Center, Aberdeen, MD	445	0		0		0		0	445	0
e . Current fleet technical insertion	TBS	To Be Selected (TBS)	0	0		300	2Q	300	2Q	Continue	600	Continue
f . Design, develop and build System Prototype Demonstrator Trailer(s)	TBS	To Be Selected (TBS)	0	0		688	2Q	709	2Q	0	1397	0
Subtotal:			940	0		988		1009		Continue	2937	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
E50

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			940	0		988		1009		Continue	2937	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
E50

Event Name	FY 02				FY 03				FY 04				FY 05				FY 06				FY 07				FY 08				FY 09			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) Publish R&D Plan								▲1																								
(2) Industry Day								▲2																								
(3) Contract Award											▲3																					
(4) Contract Award											▲4																					
(5) Start of Work (SOW)											▲5																					
Build System Prototype Demonstrator																																
(6) Preliminary Design Review (PDR)												▲6																				
Drawing Development																																
(7) Critical Design Review (CDR)																▲7																
Technical Feasibility Test																																
Technical Insertion/Design/Development																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
E50

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Publish R&D Plan	1-2Q							
Industry Day	1Q							
Select Program Integrator	2Q							
Contract Award	3Q							
Preliminary Design Review (PDR)	3Q							
Start of Work (SOW)	3Q							
Build System Prototype Demonstrator	3Q	1Q						
Preliminary Design Review (PDR)	4Q							
Drawing Development	4Q	1-3Q						
Critical Design Review (CDR)		1Q						
Technical Feasibility Test		1-2Q						
Technical Insertion/Design/Development		4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604633A - AIR TRAFFIC CONTROL					PROJECT 586	
COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
586 AIR TRAFFIC CONTROL	2402	2012	4508	4374	6587	6025	2830	4936	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element (PE) funds continuous efforts in the development of modernized tactical and fixed base Air Traffic Control (ATC) systems that will significantly enhance aviation safety in both the tactical and strategic ATC domains. Funded in this program element is the development of the Mobile Tower System (MOTS). The MOTS is a tactical mobile tower designed to meet the deployability and communication requirements of the current to future force. The MOTS will be equipped with modernized and secure avionics to ensure highly reliable and consistent tactical aircraft communications across all frequency bands and ranges to ensure compatibility with all Army, Joint, and Allied aircraft. MOTS will provide modern digital, secure, anti-jam communications, a digital recorder, basic weather information, a precision location capability, and full compatibility with all military and civilian airfields as well as tactical landing zones. The currently fielded systems, AN/TSW-7A and AN/TSQ-70A, are obsolete and require two, two and a half ton vehicles, a 15Kw generator, and a support trailer to fully operate the system. The system is not deployable on any aircraft smaller than a C-5, does not meet communications requirements across the operational spectrum, and is very difficult to maintain because parts are no longer manufactured for the system. MOTS is an effective risk management tool.

Product improvements include the Tactical Terminal Control System (TTCS) and the Air Traffic Navigation, Integration, and Coordination System (ATNAVICS)/ATC Equipment, Joint Tactical Radio System (JTRS), and Airspace Management Tool (AMT) Study. The TTCS will be improved with modernized equipment that will provide additional capability and improve performance of the overall system. The TTCS will provide enhanced Air Traffic Services (ATS) communications support to aviation assets conducting reconnaissance, maneuver, medical evacuation, logistics, and intelligence operations across the battlefield. The ATNAVICS will be upgraded with a capability to interface with other ATC equipment. The ATC equipment will have the capability to display near-real-time Situational Awareness (SA) of aircraft that ATNAVICS will provide. This capability will allow the ATC community to share and create one ATC common picture. JTRS will combine the functionality of numerous single function radios among the services into a single, joint-interoperable family of radios. The JTRS, a software-programmable and hardware-configurable digital radio system is required to provide increased interoperability, flexibility, and adaptability to support the ATC mission requirements of the warfighters. The JTRS lays the foundation for achieving network connectivity across the radio frequency (RF) spectrum and provides the means for digital information exchanges, both vertically and horizontally, between Joint warfighting elements, while enabling connectivity to civil and national authorities. JTRS is time-phased to include non-recurring engineering for three ATC systems: Tactical Airspace Integration System (TAIS), ATNAVICS and TTCS. ATC will conduct a study to determine how the AMT will provide the warfighter with a lightweight, user friendly and reliable tool to perform airspace planning. The AMT study will provide an analysis determining airspace management capability at lower echelons ensuring that situational awareness of the battle space being utilized flows from lower to higher echelons.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604633A - AIR TRAFFIC CONTROL

PROJECT
586

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Tech and Log Support	236	263	297	310
MOTS Prototype II Development & Testing	1135	397	2995	3656
TTCS P3I Development	832	244	0	0
TTCS P3I Testing	103	400	0	0
ATNAVICS/ATC Interface	0	610	679	0
JTRS Study	0	0	150	300
Airspace Management Tool Study	0	0	284	0
Program Management Support	96	98	103	108
Totals	2402	2012	4508	4374

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	2088	2161	1936
Current Budget (FY 2006/2007 PB)	2012	4508	4374
Total Adjustments	-76	2347	2438
Net of Program/Database Changes			
Congressional Program Reductions	-30		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-46		
Adjustments to Budget Years		2347	2438

FY 06: \$2,347K increase to support Mobile Tower System (MOTS) Prototype II development and testing. A new prototype is required to support production beginning in FY08.

FY 07: \$2,138K increase to support MOTS Prototype II development and testing. A new prototype is required to support production beginning in FY08. \$300 increase to support Joint Tactical Radio System (JTRS) non-recurring engineering.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604633A - AIR TRAFFIC CONTROL

PROJECT
586

C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
APA AA0050 - Air Traffic Control	59518	55235	62399	77711	83575	71393	76272	83847	Continue	Continue
APA AB1600 - Items Less Than \$5.0M (Elect War-Air)	0	0	0	0	0	0	1071	1095	0	2166

D. Acquisition Strategy: Explore new technology initiatives for the development of tactical ATC equipment, ensure complete integration of tactical ATC equipment with the National Airspace System (NAS), and integrate new technology into existing systems. ATC is currently developing a new acquisition strategy for a second Mobile Tower System (MOTS) prototype with a lighting system in FY06 and FY07. Funding for production of MOTS was originally to begin in FY06; program adjustment impacting critical milestone decisions resulted in a new production program beginning FY08. This time lapse creates technical and programmatic risks in utilizing the first prototype developed in FY02-FY04; therefore a new prototype will be developed and tested in FY06 and FY07 to support production beginning in FY08.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604633A - AIR TRAFFIC CONTROL

PROJECT
586

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TTCS P3I	MIPR	Aviation Applied Technology Directorate, Ft. Eustis VA	832	244	1Q	0		0		0	1076	0
b . ATNAVICS/ATC INTERFACE	SS/CPFF	Raytheon	0	610	2Q	679	2Q	0		0	1289	1289
c . TECH AND LOG SUPPORT	Various	PM ATC	350	263	1-4Q	297	1-4Q	310	1-4Q	Continue	Continue	Continue
d . MOTS Prototype II	TBS	TBS	0	0		2695	1-2Q	2948	1-2Q	267	5910	5910
Subtotal:			1182	1117		3671		3258		Continue	Continue	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Airspace Management Tool	TBS	TBS	0	0		284	1Q	0		0	284	0
b . MOTS Prototype II	Various	Various	0	397	3Q	0		0		0	397	0
c . JTRS Study	TBS	TBS	0	0		150	1Q	300	1Q	Continue	Continue	Continue
Subtotal:			0	397		434		300		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604633A - AIR TRAFFIC CONTROL

PROJECT
586

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TTCS P3I TESTING	MIPR	Aviation Applied Technology Directorate, Ft. Eustis VA	103	400	1Q	0		0		0	503	0
b . MOTS PROTOTYPE I TESTING			1637	0		0		0		0	1637	0
c . MOTS PROTOTYPE II TESTING	TBS	TBS	0	0		300	3Q	708	1Q	133	1141	1141
Subtotal:			1740	400		300		708		133	3281	1141

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604633A - AIR TRAFFIC CONTROL

PROJECT
586

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Support	MIPR	PM ATC	1690	98	1-4Q	103	1-4Q	108	1-4Q	Continue	Continue	Continue
Subtotal:			1690	98		103		108		Continue	Continue	Continue
Project Total Cost:			4612	2012		4508		4374		Continue	Continue	Continue

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604633A - AIR TRAFFIC CONTROL

PROJECT
586

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MOTS Prototype I Development	MOTS																															
MOTS Prototype II Development					MOTS Dev																											
MOTS Development Testing									MOTS Dev Testing																							
TTCS P3I Development	TTCS P3I Dev																															
TTCS P3I Testing					TTCS P3I Test																											
ATNAVICS/ATC Interface					ATC Interface																											
Airspace Management Tool									Airspace Mgt																							
JTRS NRE													JTRS NRE																			
TAIS P3I Development																	TAIS P3I															
ATNAVICS Modernization																	ATNAVICS Mod															
JPALS NRE																					JPALS NRE											
ATC Prognostic BITE Development																					ATC BITE Dev											

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604633A - AIR TRAFFIC CONTROL

PROJECT
586

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
MOTS Prototype I Development	1-3Q							
MOTS Prototype II Development		3-4Q	1-4Q	1-4Q				
MOTS Developmental Testing			3-4Q	1-4Q	1Q			
TTCS P3I Development	2-4Q	1-4Q						
TTCS P3I Testing	4Q	1-4Q						
ATNAVICS/ATC Interface		2-4Q	1-4Q					
Airspace Management Tool			1-4Q					
JTRS Study/NRE			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
TAIS P3I Development					1-4Q	1-4Q		
ATNAVICS Modernization					1-4Q	1-4Q		
JPALS NRE						1-4Q	1-4Q	
ATC Prognostic BITE Development						1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604642A - LIGHT TACTICAL WHEELED VEHICLES					PROJECT E40		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
E40 LTV PROTOTYPE	17377	9587	0	0	0	0	0	0	0	50071

A. Mission Description and Budget Item Justification: The High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) is a lightweight, high performance, four-wheel drive, air transportable and air droppable, high mobility tactical wheeled vehicle. The HMMWV consists of a basic design with several variants including Cargo/Utility, Armament Carrier, Ambulance, Shelter Carrier and Armored Armament Carrier. FY 2005 funds HMMWV Repower Testing and development to support logistics improvements to the HMMWV Family of Vehicles through the use of more recent engine technologies and maintainability improvements, which will result in decreased operational support costs and product improvements. Technology advancements in both armor and ballistic glass materials have progressed to the point that improved ballistic protection is available that is lighter and less expensive. This effort will also address a removable armor package that could potentially be used on a portion of the HMMWV fleet to increase ballistic and blast protection on non-protected vehicles.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
HMMWV Modernization Development Contract	1000	0	0	0
Assemble and test up to ten prototype vehicles - HMMWV Modernization	313	0	0	0
EMI Testing - HMMWV Modernization	35	0	0	0
HE HMMWV Technology	2420	0	0	0
Repower Testing & Logistical Improvements	12824	7620	0	0
Support Costs (Engineering/Quality/Matrix Support)	785	467	0	0
HMMWV Technology Improvement	0	1500	0	0
Totals	17377	9587	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604642A - LIGHT TACTICAL WHEELED VEHICLES

PROJECT
E40

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	0	0	20512
Current Budget (FY 2006/2007 PB)	9587	0	0
Total Adjustments	9587	0	-20512
Net of Program/Database Changes			
Congressional Program Reductions	-137		
Congressional Rescissions			
Congressional Increases	10000		
Reprogrammings			-20512
SBIR/STTR Transfer	-276		
Adjustments to Budget Years			

FY05 + 9587 Congressional Add
 FY07 -20512 Realigned for Higher Headquarters priority requirements.

<u>C. Other Program Funding Summary</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA1 Hi Mob Multi-Purp Whld Veh (D15400)	1338390	432914	224222	331307	340946	481836	724096	347249	Continue	Continue

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

**0604642A - LIGHT TACTICAL WHEELED
VEHICLES**

PROJECT

E40

D. Acquisition Strategy: The Acquisition Strategy for HMMWV Repower is to award three contracts for Testing and Logistical Improvements, development and testing of vehicle prototypes.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604642A - LIGHT TACTICAL WHEELED VEHICLES

PROJECT
E40

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Contract - HMMWV Modernization	SS/CPFF	AM General, Mishawaka, IN	17764	0		0		0		0	17764	17764
b . In-House Engineering (TACOM)	N/A	TACOM, Warren, MI	2057	467		0		0		0	2524	2524
c . HE HMMWV Technology	SS/CPFF	AM General, Mishawaka, IN	3199	0		0		0		0	3199	3199
d . Repower Testing & Logistical Improvement	N/A	NAC, Warren, MI	664	0		0		0		0	664	664
e . Repower Integration	N/A	Redstone, Arsenal, AL	2300	0		0		0		0	2300	2300
f . Development Contract - HMMWV Repower	TBD	TBD	7989	7620		0		0		0	15609	15609
g . Armor Protection Kit Testing	MIPR	ATC, Aberdeen, MD	54	0		0		0		0	54	54
h . HMMWV Technology Improvement	SS/FFP	AM General, Mishawaka, IN	0	1500		0		0		0	1500	1500
Subtotal:			34027	9587		0		0		0	43614	43614

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604642A - LIGHT TACTICAL WHEELED VEHICLES

PROJECT
E40

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not applicable

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Developmental Testing - HMMWV Modernization	MIPR	ATC, Aberdeen, MD	2111	0		0		0		0	2111	2111
b . Developmental Testing - HMMWV Modernization	MIPR	Yuma Proving Ground, AZ	948	0		0		0		0	948	948
c . Transportability Testing - HMMWV Modernization	MIPR	Defense Ammunition Center, OK	36	0		0		0		0	36	36
d . EMI Testing - HMMWV Modernization	MIPR	White Sands Missile Range, NM	313	0		0		0		0	313	313
e . LVAD & HSL Certification	MIPR	NATICK	81	0		0		0		0	81	81
f . Experimentation Testing - HE HMMWV	MIPR	Ft Benning, GA	31	0		0		0		0	31	31
g . Test/Validate Near Term Armor Protection	MIPR	ATC, Aberdeen, MD	807	0		0		0		0	807	807

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604642A - LIGHT TACTICAL WHEELED VEHICLES

PROJECT
E40

III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
h . Repower Testing	MIPR	Yuma Proving Ground, AZ	1000	0		0		0		0	1000	1000
i . Repower Risk Reduction Testing	MIPR	ATC, Aberdeen, MD	103	0		0		0		0	103	103
j . Repower Testing	MIPR	ATC, Aberdeen, MD	1027	0		0		0		0	1027	1027
Subtotal:			6457	0		0		0		0	6457	6457

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not applicable

Project Total Cost:			40484	9587		0		0		0	50071	50071
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	1715355	2268236	3065629	3150136	3128860	3058300	2950951	2600280	Continuing	Continuing
F52 FCS- RECON PLATFORMS & SENSORS	25028	147267	105333	114117	88023	75796	50382	33637	Continuing	Continuing
F53 FCS- UNMANNED GROUND VEHICLES (UGV)	30221	130935	86445	106341	116608	118798	117904	81003	Continuing	Continuing
F54 UNATTENDED SENSORS	6000	28173	2504	5304	6557	6353	5315	2906	Continuing	Continuing
F55 SUSTAINMENT	96339	51191	61581	80020	194036	266860	267032	268028	Continuing	Continuing
F57 MANNED GROUND VEHICLES	184611	409714	549150	778022	818073	793008	840463	576124	Continuing	Continuing
F59 COMMON COMPONENTS	27500	0	0	0	0	0	0	0	0	459755
F60 FAMILY OF SYSTEMS, ANAL&INT	165302	0	0	0	0	0	0	0	0	874746
F61 S O S ENGINEERING AND PROGRAM MANAGEMENT	313348	1500956	2260616	2066332	1905563	1797485	1669855	1638582	Continuing	Continuing
F62 MISSION EQUIPMENT PLATFORMS	132537	0	0	0	0	0	0	0	0	3443026
F63 NETWORK SOFTWARE	111745	0	0	0	0	0	0	0	0	1761406
F64 OTHER CONTRACT COSTS	313536	0	0	0	0	0	0	0	0	1453316
F65 S OF S ENGR & PROG MGT	190331	0	0	0	0	0	0	0	0	1915890
F66 S OF S TEST AND EVALUATION	56347	0	0	0	0	0	0	0	0	446248
F67 SUPPORTABILITY	5252	0	0	0	0	0	0	0	0	214760
F69 TRAINING	7756	0	0	0	0	0	0	0	0	113983
F70 NLOS LAUNCH SYSTEM	49502	0	0	0	0	0	0	0	0	1261043

A. Mission Description and Budget Item Justification: Future Combat Systems (FCS) will operate as a System of Systems (SoS) that will network existing systems, systems already under development, and new systems to be developed to meet the needs of the Unit of Action (UA) (UA will be fielded to M-BCT). The network will enable improved intelligence, surveillance and reconnaissance, battle command, real time sensor-shooter linkages, and increased synergy between echelons and within small units. It will also enable the UA to connect to the Unit of Employment (UE) (UE is analogous to a division), joining capabilities, and national assets making these capabilities available to the small units of the UA.

FCS enables the networked UA to develop the situation in and out of contact, set conditions, maneuver to positions of advantage to close with and

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destroy the enemy through standoff attack and combat assault as articulated in the Future Force UA Operations and Organizational (O&O) plan.

The FCS program is contained in three Program Elements (PEs): Non-Line of Sight - Launch System (NLOS-LS), Non-Line of Sight - Cannon (NLOS-C) and Armored Systems Modernization (ASM). The NLOS-LS PE develops the NLOS-LS family of missiles including the Container Launch Unit (CL/U) and the Precision Attack Missile (PAM). The NLOS-C PE develops the NLOS-C work and some Manned Ground Vehicles (MGV) common components. PE ASM contains the development effort for the balance of the MGV common components, Unmanned Ground Vehicles (UGVs), Unmanned Air Vehicles (UAVs) and SoS development efforts including network, integration, and software.

Army transformation is grounded in the operational framework of joint doctrine and concepts for future joint and combined operations. Transforming to the Future Force and developing the FCS is the Army's number one acquisition priority. The FCS family of systems (FoS) is being designed with the joint fight in mind.

FCS is comprised of a family of advanced, networked air and ground based maneuver, maneuver support, and sustainment systems that will include manned and unmanned platforms which are networked via a Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) architecture, including networked communications, network operations, sensors, battle command systems, and manned and unmanned reconnaissance and surveillance capabilities. This will enable FCS to achieve improved situational understanding and operations at a level of synchronization heretofore unachievable.

The FCS budget is based on the Work Breakout Structure (WBS). This will provide Congress the same program baseline data for budget justification as the Program Manager uses for program management. The three PEs and eight projects reflect the WBS reporting structure that will be provided to Congress quarterly. A full description of the projects can be found in the project level R2 form. The following is a description of the projects:

F52 includes Class I, Class II, Class III, Class IVa Air Platforms and sensors.

F53 includes Armed Robotic Vehicles (ARV-R (Reconnaissance); ARV-A (Assault); ARV-A(L) (Assault(Light))), Small Unmanned Ground Vehicle (SUGV), Multi-function Utility/Logistics Equipment (MULE-T (Transport), MULE-CM (Countermine)) and the Autonomous Navigation System (ANS)

F54 includes Unattended Ground Sensors (UGS)

F55 includes SDD FCS-UA contractor logistics and training support

F57 includes contractor efforts of all Manned Ground Vehicle (MGV) variants including ICV, MCS, NLOS-M, C2V, RSV, MV, FRMV, MV, XM307 / MK-44 AMMMO Development, Common C4ISR and Common Mobility and Software

F61 includes Government and Contractor efforts associated with the SoS Engineering Family of Systems Analysis, Network Software, SoS Test and Evaluation and Program Management.

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<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	2700455	3791837	3334654
Current Budget (FY 2006/2007 PB)	2268236	3065629	3150136
Total Adjustments	-432219	-726208	-184518
Net of Program/Database Changes			
Congressional Program Reductions	-367170		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-65049		
Adjustments to Budget Years		-726208	-184518

Change Summary Explanation: Funding - FY 05-07 funds realigned to new program elements for NLOS Cannon and NLOS Launcher as per Congressional direction.

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BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604645A - Armored Systems Modernization (ASM)-Eng. Dev.				PROJECT F52		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
F52 FCS- RECON PLATFORMS & SENSORS	25028	147267	105333	114117	88023	75796	50382	33637	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project covers all air platforms (Class I, Class II, Class III, and Class IVa) and includes contractor development, engineering, prototype procurement and integration, test, and assembly. As part of the Army's restructuring of the FCS program, the previously deferred UAV Class II and Class III systems were reinstated for company-level and battalion-level reconnaissance and target acquisition.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
<p>Class I: FY05 - The FCS program will build upon the DARPA Micro Air Vehicle (MAV) program. The LSI placed an engineering contract with DARPA's MAV supplier, Honeywell, to mature the prime item development specification, the system architecture, and the risk management plans. This effort will complete the Class I Systems Requirements Review (SRR) to ensure that US Army requirements have been properly identified and captured in the system specifications. FY06 - Following the successful demonstration of MAV technology the LSI will award a contract to Honeywell to develop the Class I system. The LSI, Honeywell, and One Team Partners will build upon the earlier engineering work to mature the specifications, architecture models, and risk management plans that culminates in the conduct of the SFR for the Class I system to demonstrate convergence on and achievability of the system requirements and readiness to initiate system design. FY07- The LSI, Honeywell, and its One Team Partners will conduct the system PDR, which confirms that the system requirements are defined and initial detailed design is ready to be initiated. Major sub-systems and avionics will be delivered to Honeywell's production facility in New Mexico.</p>	0	13254	9602	9961

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Accomplishments/Planned Program (continued)

Class II & III: FY 05-The LSI will solicit engineering contracts to selected suppliers to begin Class II and Class III technology analysis and assessment to show how their solutions meet the FCS UAV requirements. These potential solutions are in addition to continued collaboration with DARPA to transition technology from their Organic Air Vehicle (OAV) II and DP-5 programs. The LSI will also award engineering contracts to selected DARPA suppliers to attain similar information and maintain competitive equality. FY 06- The LSI, Army, and DARPA will conduct technology suitability assessments based on the information provided by the selected suppliers, and select finalists for Class II and Class III to continue technology maturation in parallel with the DARPA contractors. Selected components will be delivered by the competing suppliers to demonstrate the technical maturity. FY07- Each of the selected suppliers will contribute to the initial prime item development specs, systems architecture models, and interface definitions and develop risk management plans that demonstrate the suitability of their proposed design solutions. Sub-tier suppliers will deliver air frame, navigation, communication, and control equipment to the competing Class II & III suppliers for integration prior to the flight demonstration that will occur in FY08 to support the final source selections.

Class IVa: FY 04 & 05 - The LSI, Northrop Grumman, and its One Team Partners will conduct the System Functional Review (SFR) to confirm the technical feasibility of the design concept, demonstrate convergence on and achievability of the system requirements, and readiness to initiate system design. Long lead authorization to begin fabrication of engines, transmissions, and selected airframe components to maintain production alignment with the Navy Joint program. FY 06- The LSI, Northrop Grumman, and its One Team Partners will conduct the Preliminary Design Review (PDR) to verify that functional allocations, detailed performance specifications, processes and plans are defined and initial detailed design is ready to be initiated. Rolls-Royce will deliver eight power train systems to Schweizer Aircraft to integrate into the Class IV airframes. Subsystem level testing will be preformed at Schweizer Aircraft prior to delivery to Northrop Grumman Unmanned Systems Center in Mississippi. FY 07- The LSI, Northrop Grumman, and its One Team Partners will conduct the system Critical Design Review (CDR) to verify that the majority of design has been completed, will meet requirements, and fabrication and build of the system prototypes is initiated. Schweizer Aircraft will deliver eight Class IV airframes with propulsion systems to Northrop Grumman in Mississippi.

Sensors

Totals

FY 2004	FY 2005	FY 2006	FY 2007
0	80996	58130	61882
16345	53017	37601	42274
8683	0	0	0
25028	147267	105333	114117

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
0604645 F52 UAV RECON & SENSORS	0	147267	105333	114117	88023	75796	50382	33637	Continuing	Continuing
0604645 F53 UGV	0	130935	86445	106341	116608	118798	117904	81003	Continuing	Continuing
0604645 F54 UGS	0	28173	2504	5304	6557	6353	5315	2906	Continuing	Continuing
0604645 F55 SUSTAINMENT	0	51191	61581	80020	194036	266860	267032	268028	Continuing	Continuing
0604645 F57 MANNED GROUND VEHICLES	0	409714	549150	778022	818073	793008	840463	576124	Continuing	Continuing
0604645 F61 SoS Engineering & Program Management	0	1500956	2260616	2066332	1905563	1797485	1669855	1638582	Continuing	Continuing
0604646 F72 Non -LINE OF SIGHT (NLOS-LS)	0	55794	231554	329412	280225	261362	90950	18100	Continuing	Continuing
0604647 F58 Non -LINE OF SIGHT CANON (NLOS-LS-C)	0	476736	107587	262492	273226	140428	139569	72325	Continuing	Continuing
WTCV	0	0	0	0	167402	328778	1520447	3621968	Continuing	Continuing
0604645 F59 Common Components	27500	0	0	0	0	0	0	0	0	27500
0604645 F60 Family of systems, Anal & INT	165302	0	0	0	0	0	0	0	0	165302
0604645 F62 Mission Equipment Platforms	132537	0	0	0	0	0	0	0	0	132537
0604645 F63 Network software	111745	0	0	0	0	0	0	0	0	111745
0604645 F64 Other Contract Costs	313536	0	0	0	0	0	0	0	0	313536
0604645 F65 S of S Engineering & Prog Mgt	190331	0	0	0	0	0	0	0	0	190331
0604645 F66 S of S Test and Evaluation	56347	0	0	0	0	0	0	0	0	56347
0604645 F67 Supportability	5252	0	0	0	0	0	0	0	0	5252
0604645 F69 Training	7756	0	0	0	0	0	0	0	0	7756
0604645 F70 NLOS Launch System	49502	0	0	0	0	0	0	0	0	49502

C. Acquisition Strategy: During the FY06-11 POM process, the Army restructured the PM UA Acquisition Program. The Army announced this restructured plan which strengthen the FCS Program and simultaneously improve the Current Force through early delivery of selected FCS capabilities. The adjustments maintain the Army focus on FCS-equipped UA development and substantially reduce program risk.

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The adjustments to the FCS Program acquisition strategy fall into four primary categories:

- o The development priority in descending order will be the 1) Network, 2) Unattended Munitions, 3) Unmanned systems, and finally 4) Manned Ground Vehicles (MGV). Consequently the MGV development duration will be extended. However, Non Line-of-Sight-Cannon (NLOS-C) will lead MGV development and deliver prototype NLOS-C systems in 2008 and deliver Block 0 NLOS-C prototypes in 2010.
- o The five previously deferred FCS core systems: 1) UAV Class II, 2) UAV III, 3) Armed Robotic Vehicle (ARV) –Assault, 4) ARV-Reconnaissance and 5) FCS Maintenance and Recovery Vehicle will be funded and fielded with the first FCS-equipped UA, allowing UA fielding of the complete 18 + 1 FCS core systems to begin delivery to the Army in 2014.
- o More robust experimentation and evaluation are included in the program to prove revolutionary concepts, mature the architecture and components, and assist in spiral development.
- o A series of Spiral Out packages will begin in 2008 and continue every two years through 2014 to insert FCS capability into Current Force Modular Brigade Combat Teams (M-BCTs) to include Stryker, Heavy, and Infantry.

The current OTA was modified on 6 Aug 2004 to cover the new Scope of Work (SOW) of the approved POM program. The definitization of the modification is scheduled for February 2005. The PM will be submitting reprogramming request for the FY05 to reflect the above definitization of the modification to the OTA. While the FY06 and beyond reflect the adjusted Army Cost Position (FY06-11 POM approved program), the funding profile for these years may be adjusted upon completion of contract definitization and development of contract/program budget baseline that supports the above program restructure.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CLASS I	OTA	THE BOEING CO., SEATTLE,WA SEE REMARK 1	0	7363	1-3Q	9602	1-3Q	9961	1-3Q	Continue	26926	0
b . CLASS II	OTA	THE BOEING CO., SEATTLE,WA SEE REMARK 4	0	13254	1-3Q	17259	1-3Q	18616	1-3Q	Continue	49129	0
c . CLASS III	OTA	THE BOEING CO., SEATTLE,WA SEE REMARK 4	0	29453	1-3Q	40871	1-3Q	43266	1-3Q	Continue	113590	0
d . CLASS IVa	OTA	THE BOEING CO., SEATTLE,WA SEE REMARK 2	16345	27981	1-3Q	37601	1-3Q	42274	1-3Q	Continue	124201	0
e . SENSORS	OTA	THE BOEING CO., SEATTLE,WA SEE REMARK 3	8683	69216	1-3Q	0		0		Continue	77899	0
Subtotal:			25028	147267		105333		114117		Continue	391745	0

Remarks: Remark 1: Subcontractor: Honeywell,- Albuquerque,New Mexico
 Remark 2: Subcontractor: Northrop Grumman Systems Corp.- San Diego, CA
 Remark 3: Subcontractor: Northrop Grumman, Electronics Systems Division, Linthieum, MD
 Remark 4: Subcontractor: Selected in FY06 and FY07.

ARMY RDT&E COST ANALYSIS(R3)

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: All support costs for this project are included in F61 SoS Engineering and Program Management project.

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: All Test and Evaluation costs for this project are included in F61 SoS Engineering and Program Management project.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

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Project Total Cost:			25028	147267		105333		114117		Continue	391745	0
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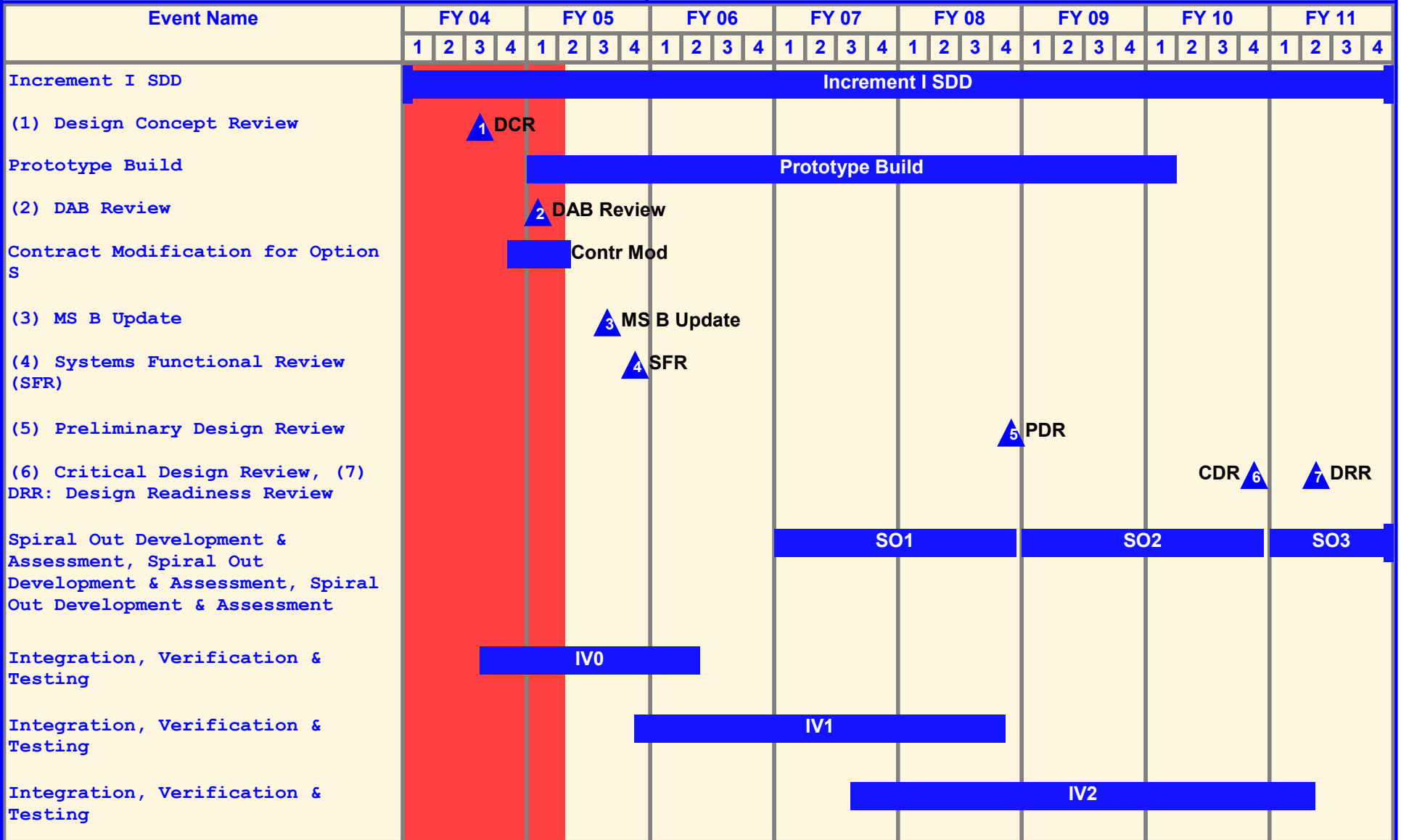
Schedule Profile (R4 Exhibit)

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BUDGET ACTIVITY
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Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
ADM Required MS B Update		3Q						
Definitization of Contract modification for POM-adjusted Program		2Q						
SoS Functional Review (FR)		4Q						
SoS Preliminary Design Review (PDR)					4Q			
Phase 1 Integration at Test Completion		4Q						
Phase 2 Integration at Test Completion				3Q				
Phase 3 Integration at Test Completion					2Q			
SoS Critical Design Review (CDR)							4Q	
Design Ready Review								2Q

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BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604645A - Armored Systems Modernization (ASM)-Eng. Dev.				PROJECT F53		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
F53 FCS- UNMANNED GROUND VEHICLES (UGV)	30221	130935	86445	106341	116608	118798	117904	81003	Continuing	Continuing

A. Mission Description and Budget Item Justification: This Project includes Armed Robotic Vehicles (ARV-R (Reconnaissance); ARV-A (Assault); ARV-A(L) (Assault(Light))), Small Unmanned Ground Vehicle (SUGV), Multi-function Utility/Logistics Equipment (MULE-T (Transport) and MULE-CM (Countermine)). In addition the Unmanned Ground Vehicles this project includes the development of the hardware and software for the Autonomous Navigation System (ANS) required for operation of the UGV and leader-follower capability for the Manned Ground Vehicles (MGVs).

Major Program Milestones

FY05

SUGV: The primary focus will be the refinement of the SUGV development specifications. In January '05, a SRR will be held to assess the requirements maturity entering the FCS functional decomposition activity. This will result in the establishment of a baseline SUGV Prime Item Development Specification (PIDS). Finally, SUGV functional requirements will be reviewed at the FCS System of Systems Functional Review (SoSFR), in August '05, which demonstrates convergence on and achievability of the SUGV system requirements and readiness to initiate system design.

ANS: The primary focus will be the refinement of the ANS development specifications. In March '05, a SRR will be held to assess the requirements maturity entering the FCS functional decomposition activity. This will result in the establishment of a baseline ANS Configuration Item Development Specification (CIDS). Finally, ANS functional requirements will be reviewed at the FCS System of Systems Functional Review (SoSFR), in August '05, which demonstrates convergence on and achievability of the ANS system requirements and readiness to initiate system design.

MULE-T, MULE-CM, ARV-A(L): The primary focus will be the refinement of the MULE development specifications. A SRR was held in November '04 to assess the requirements maturity entering the FCS functional decomposition activity. This will result in the establishment of baseline MULE Prime Item Development Specifications (PIDS). Finally, functional requirements for all MULE platforms will be reviewed at the FCS System of Systems Functional Review (SoSFR) in August '05.

The ARV comes in two variants, the ARV-A (Assault) and the ARV-RSTA (Reconnaissance Surveillance and Target Acquisition). A contract modification will be definitized with United Defense to initiate the full SDD effort for these systems. The primary technical focus will be the refinement of the ARV development specifications. This activity will be reviewed at two major points. An In-Progress Review (IPR) will be held to assess the requirements maturity entering the FCS functional decomposition activity. This will result in the establishment of baseline ARV Prime Item Development Specifications (PIDS), which will be reviewed in the ARV SRR in the September '05 timeframe.

FY06

SUGV, ANS, MULE-T, MULE-CM, ARV-A(L), ARV-RSTA, ARV-Assault: The continued refinement of these specifications will be reviewed at each of

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their System Functional Reviews (SFR), which will be used to verify that system level requirements are properly aligned with the SoS Specification and correctly flowed down to sub-systems.

FY07

SUGV, ANS, MULE-T, MULE-CM, ARV-A(L), ARV-RSTA, ARV-Assault: A primary focus of the FY06 effort will be the maturation of these system designs. These activities will be reviewed at their Preliminary Design Reviews (PDR). This review will be used to verify that system designs are compliant with system level requirements as outlined in their respective PIDS/CIDs. The SUGV will conduct a Critical Design Review (CDR) to initiate fabrication of prototypes.

Prototypes and Hardware Deliveries

FY07

ANS: A prototype ANS subsystem, the Inertial Navigation System/Global Positioning System (INS/GPS), will be delivered to the MGVI IPT for integration into the NLOS-C Block 0 vehicles.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Armed Robotic Vehicle-Assault (ARV-A)	0	39281	14686	20304
Armed Robotic Vehicle-Reconnaissance (ARV-R)	0	30115	11216	14934
Armed Robotic Vehicle-Assault(Light) (ARV-A(L))	4068	20950	7969	11537
Small Unmanned Ground Vehicle (SUGV)	3471	7856	2985	3540
Multi-function Utility/Logistics Equipment-Transport (MULE-T)	4914	13094	4798	6453
Autonomous Navigation Systems-Software	10396	0	37594	39893
Multi-function Utility/Logistics Equipment-Countermine (MULE CM)	7372	19639	7197	9680
Totals	30221	130935	86445	106341

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
0604645 F52 Unmanned Aerial Vehicles (UAV)	0	147267	105333	114117	88023	75796	50382	33637	Continuing	Continuing
6004645 F53 Unmanned Ground Vehicles (UGV)	0	130935	86445	106341	116608	118798	117904	81003	Continuing	Continuing
0604645 F54 (UGS)	0	28173	2504	5304	6557	6353	5315	2906	Continuing	Continuing
0604645 F55 Sustainment	0	51191	61581	80020	194036	266860	267032	268028	Continuing	Continuing
6064645 F57 (MGV)	0	409714	549150	778022	818073	793008	840463	576124	Continuing	Continuing
6064645 F61 SoS Engineering & Program Management	0	1500956	2260616	2066332	1905563	1797485	1669855	1638582	Continuing	Continuing
0604646 F72 Non-Line of Sight Launch System (NLOS-LS)	0	55794	231554	329412	280225	261362	90950	18100	Continuing	Continuing
0604647 F58 Non-Line of Sight Cannon (NLOS-C)	0	476736	107587	262492	273226	140428	139569	72325	Continuing	Continuing
WTCV	0	0	0	0	167402	328778	1520447	3621968	Continuing	Continuing
0604645 F59 Common Components	27500	0	0	0	0	0	0	0	0	27500
0604645 F60 Family of Systems, Anal & Int	165302	0	0	0	0	0	0	0	0	165302
0604645 F62 Mission Equipment Platforms	132537	0	0	0	0	0	0	0	0	132537
0604645 F63 Network Software	111745	0	0	0	0	0	0	0	0	111745
0604645 F64 Other Contracts Costs	313536	0	0	0	0	0	0	0	0	313536
0604645 F65 S of S Engr & Prog Mgt	190331	0	0	0	0	0	0	0	0	190331
0604645 F66 S of S Test and Evaluation	56347	0	0	0	0	0	0	0	0	56347
0604645 F67 Supportability	5252	0	0	0	0	0	0	0	0	5252
0604645 F69 Training	7756	0	0	0	0	0	0	0	0	7756
0604645 F70 NLOS Launch System	49502	0	0	0	0	0	0	0	0	49502

C. Acquisition Strategy: During the FY06-11 POM process, the Army restructured the PM UA Acquisition Program.

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The Army announced this restructured plan which strengthen the FCS Program and simultaneously improve the Current Force through early delivery of selected FCS capabilities. The adjustments maintain the Army focus on FCS-equipped UA development and substantially reduce program risk. The adjustments to the FCS Program acquisition strategy fall into four primary categories:

- o The development priority in descending order will be the 1) Network, 2) Unattended Munitions, 3) Unmanned systems, and finally 4) Manned Ground Vehicles (MGV). Consequently the MGV development duration will be extended. However, Non Line-of-Sight-Cannon (NLOS-C) will lead MGV development and deliver prototype NLOS-C systems in 2008 and deliver Block 0 NLOS-C prototypes in 2010.
- o The five previously deferred FCS core systems: 1) UAV Class II, 2) UAV III, 3) Armed Robotic Vehicle (ARV) –Assault, 4) ARV-Reconnaissance and 5) FCS Maintenance and Recovery Vehicle will be funded and fielded with the first FCS-equipped UA, allowing UA fielding of the complete 18 + 1 FCS core systems to begin delivery to the Army in 2014.
- o More robust experimentation and evaluation are included in the program to prove revolutionary concepts, mature the architecture and components, and assist in spiral development.
- o A series of Spiral Out packages will begin in 2008 and continue every two years through 2014 to insert FCS capability into Current Force Modular Brigade Combat Teams (M-BCTs) to include Stryker, Heavy, and Infantry.

The current OTA was modified on 6 Aug 2004 to cover the new Scope of Work (SOW) of the approved POM program. The definitization of the modification is scheduled for February 2005. The PM will be submitting reprogramming request for the FY05 to reflect the above definitization of the modification to the OTA. While the FY06 and beyond reflect the adjusted Army Cost Position (FY06-11 POM approved program), the funding profile for these years may be adjusted upon completion of contract definitization and development of contract/program budget baseline that supports the above program restructure.

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BUDGET ACTIVITY
5 - System Development and Demonstration

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Armed Robotic Vehicle Assault (ARV- A)	OTA	The Boeing Coimpany Seattle Washington see remark 2	4068	39281	1-3Q	14686	1-3Q	20304	1-3Q	Continue	78339	0
b . Armed Robotic Vehicle Reconnaissance (ARV- R)	OTA	The Boeing Coimpany Seattle Washington see remark 2	0	30115	1-3Q	11216	1-3Q	14934	1-3Q	Continue	56265	0
c . Armed Robotic Vehicle Light (ARV- A(L))	OTA	The Boeing Coimpany Seattle Washington see remark 3	0	20950	1-3Q	7969	1-3Q	11537	1-3Q	Continue	40456	0
d . Small Unmanned Ground Vehicle (SUGV)	OTA	The Boeing Coimpany Seattle Washington see remark 1	3471	7856	1-3Q	2985	1-3Q	3540	1-3Q	Continue	17852	0
e . MULE T	OTA	The Boeing Coimpany Seattle Washington see remark 3	12286	13094	1-3Q	4798	1-3Q	6453	1-3Q	Continue	36631	0
f . Autonomous Navigation System - Software	OTA	The Boeing Coimpany Seattle Washington see remark 4	10396	0		37594	1-3Q	39893	1-3Q	Continue	87883	0
g . MULE CM	OTA	The Boeing Coimpany Seattle Washington see remark 3	0	19639	1-3Q	7197	1-3Q	9680	1-3Q	Continue	36516	0

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			30221	130935		86445		106341		Continue	353942	0

Remarks: Remark 1: Subcontractor: iRobot Corp. - Burlington, MA
 Remark 2: Subcontractor: United Defense Limited Partnership - Santa Clara, CA
 Remark 3: Subcontractor: Lockheed Martin Missile and Fire Control - Praire, TX
 Remark 4: Subcontractor: General Dynamics Robotic Systems - Westminister, MD

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: All support costs for this project are included in F61 SoS Engineering and Program Management project.

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: All Test and Evaluation costs for this project are included in F61 SoS Engineering and Program Management project.

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
Project Total Cost:			30221	130935		86445		106341		Continue	353942	0

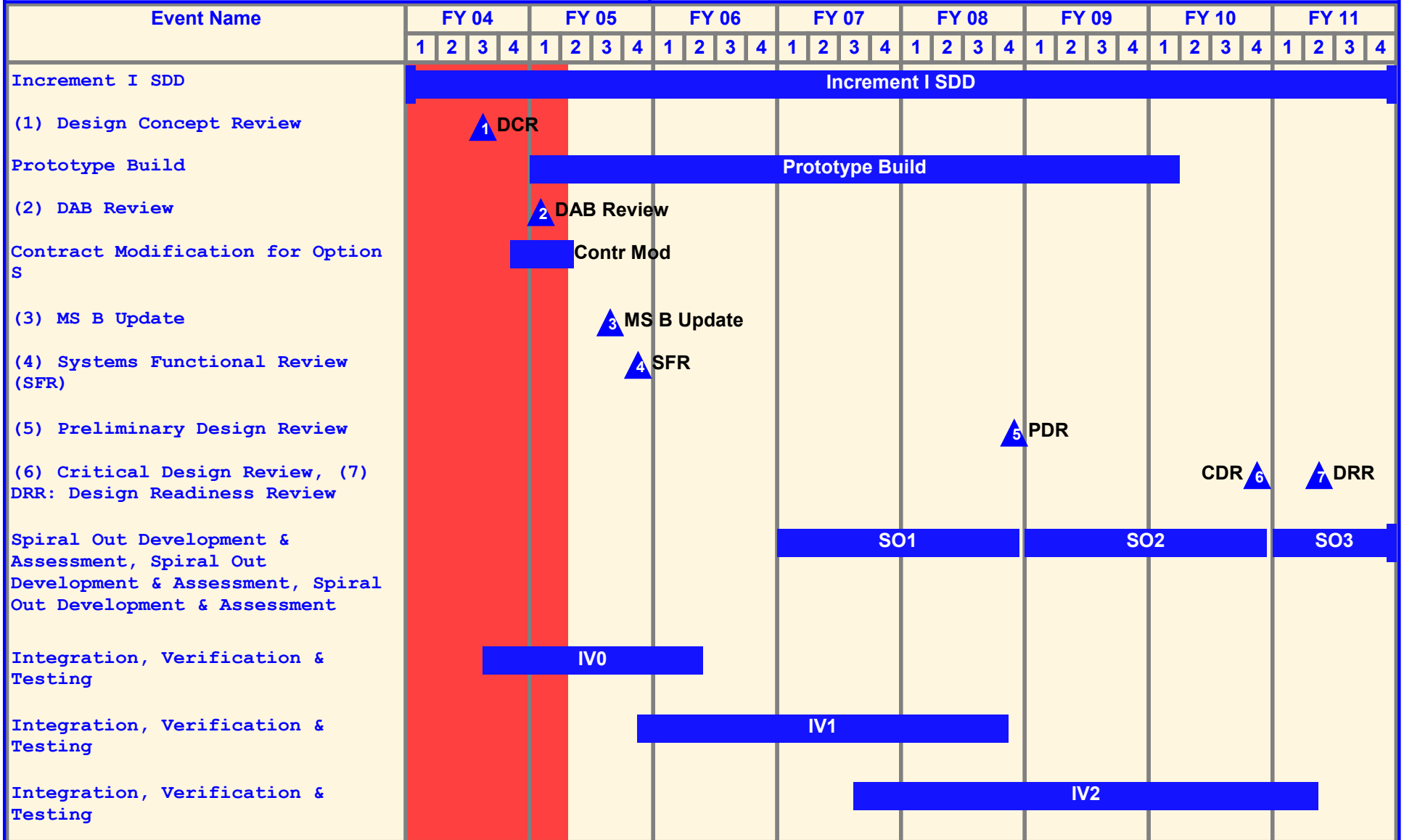
Schedule Profile (R4 Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
ADM Required MS B Update		3Q						
Definitization of Contract Modification for POM-adjusted Program		2Q						
SoS Functional Review (FR)		4Q						
SoS Preliminary Design Review (PDR)					4Q			
Phase 1 Integration at Test Completion		4Q						
Phase 2 Integration at Test Completion				3Q				
SoS Critical Design Review (CDR)							4Q	
Phase 3 Integration at Test Completion					2Q			
Design Ready Review								2Q

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BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604645A - Armored Systems Modernization (ASM)-Eng. Dev.				PROJECT F54		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
F54 UNATTENDED SENSORS	6000	28173	2504	5304	6557	6353	5315	2906	Continuing	Continuing

A. Mission Description and Budget Item Justification: This Project includes the Unattended Ground Sensors (UGS) development, engineering, prototype procurement and integration assembly.

The UGS program is an end-to-end, turnkey system of integrated acoustic and seismic sensors, multi-layer and multi-sensor fusion algorithms, networks and fielded hardware to provide warfighters with high confidence detection, classification and tracking of non-line of sight, mobile time critical targets in denied enemy areas. High confidence levels and precision will allow for indirect fire weapon targeting, remote scouting and augmentation/cueing of other C4ISR systems.

There are two configurations of UGS; Tactical and Urban. Tactical UGS (T-UGS) are designed for remote tactical operations in open spaces, at road choke points, avenues of approach, etc, and are designed to be emplaced by hand or by remote deployment methods.

The Urban Unattended Ground Sensor (U-UGS) system is designed for use in confined spaces such as rooms, halls, attics, basements, sewers, caves, and alleyways, for example, when a platoon or squad clears a building U-UGS are left behind to perform surveillance that would otherwise require dedicating soldiers. The U-UGS system does this by providing a self-organizing wireless network that consists of three configuration items; personnel detect sensors, imaging sensors, and gateways.

MAJOR PROGRAM MILESTONES

The UGS systems for the 2005 to 2007 timeframe are based on low risk, mature, and proven technologies that will deliver critical capabilities to the Unit of Action (UA) during first FCS Integration Phase. The modular design of these systems will allow for simplified integration of new capabilities within subsequent FCS spirals.

The System Functional Review (SFR) will demonstrate the convergence and achievability of the UGS system requirements as well as the readiness to initiate the system design activities. This review reflects the definition of the requirements and completion of the UGS concept analysis and trade studies. At this point, the detailed design phase of the program will be initiated. The UGS CDR is scheduled for July 2006 and marks the majority of the design being completed and the initiation of the UGS fabrication and build phase.

PROTOTYPES and COMPONENT DELIVERIES

The UGS program is scheduled to deliver final configuration, pre-qualification hardware to Boeing's C4ISR System Integration Lab (SIL) in December

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2006 for integration testing with the C4ISR network elements. This hardware delivery will augment, and be used in conjunction with, other planned UGS Modeling & Simulation (M&S) efforts to conduct the Integration & Verification (IV) phase activities, as described below. The UGS program is on track to deliver fully qualified UGS systems to the FCS System of Systems (SoS) SIL in June 2007.

SIMULATION and EMULATION DELIVERABLES

The UGS program will utilize Modeling and Simulation (M&S) to support concept definition, UGS design analysis and trades, and integration into the FCS System of Systems (SoS) network-centric environment. A series of Integration & Verification (IV) phases activities are planned. Within the 2006-2007 time frame, an IV phase 0 (IV0) is being performed to stand up the M&S infrastructure and to develop the initial UGS models. These efforts will be continued through IV phase 1 (IV1) to develop and exercise models consistent with the spiral 1 UGS configuration and FCS environment

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Unattended Ground Sensors (UGS)	6000	28173	2504	5304
Totals	6000	28173	2504	5304

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
0604645 F52 UAV Recon Platform and Sensors	0	147267	105333	114117	88023	75796	50382	33637	Continuing	Continuing
0604645 F53 (UGV)	0	130935	86445	106341	116608	118798	117904	81003	Continuing	Continuing
0604645 F54 (UGS)	0	28173	2504	5304	6557	6353	5315	2906	Continuing	Continuing
0604645 F55 Sustainment	0	51191	61581	80020	194036	266860	267032	268028	Continuing	Continuing
0604645 F57 Manned Ground Vehicles (MGV)	0	409714	549150	778022	818073	793008	840463	576124	Continuing	Continuing
0604645 F61 SoS Engineering & Program Management	0	1500956	2260616	2066332	1905563	1797485	1669855	1638582	Continuing	Continuing
0604646 F72 Non-Line of Sight Launch System (NLOS-LS)	0	55794	231554	329412	280225	261362	90950	18100	Continuing	Continuing
0604647 F58 Non-Line of Sight - Cannon (NLOS-C)	0	476736	107587	262492	273226	140428	139569	72325	Continuing	Continuing
WTCV	0	0	0	0	167402	328778	1520447	3621968	Continuing	Continuing
0604645 F59 Common Components	27500	0	0	0	0	0	0	0	0	27500
0604645 F60 Family of Systems, Anal & Int	165302	0	0	0	0	0	0	0	0	165302
0604645 F62 Mission Equipment Platforms	132537	0	0	0	0	0	0	0	0	132537
0604645 F63 Network Software	111745	0	0	0	0	0	0	0	0	111745
0604645 F64 Other Contract Costs	313536	0	0	0	0	0	0	0	0	313536
0604645 F65 S OF S Engr & Prog Mgt	190331	0	0	0	0	0	0	0	0	190331
0604645 F66 S OF S Test and Evaluation	56347	0	0	0	0	0	0	0	0	56347
0604645 F67 Supportability	5252	0	0	0	0	0	0	0	0	5252
0604645 F69 Training	7756	0	0	0	0	0	0	0	0	7756
0604645 F70 NLOS Launch Systems	49502	0	0	0	0	0	0	0	0	49502

C. Acquisition Strategy: During the FY06-11 POM process, the Army restructured the PM UA Acquisition Program. The Army announced this restructured plan which strengthen the FCS Program and simultaneously improve the Current Force through early delivery of selected FCS

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Tactical Sensors - UGS	OTA	The Boeing Company - Seattle, Wash., See Remark 1	6000	28173	1-3Q	2504	1-3Q	5304	1-3Q	Continue	41981	0
Subtotal:			6000	28173		2504		5304		Continue	41981	0

Remarks: Remark 1: Subcontractor: Textron Systems, Intelligent Battlefield System Division - Willington, MA

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: All support costs for this project are included in F61 SoS Engineering and Program Management project.

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: All Test and Evaluation costs for this project are included in F61 SoS Engineering and Program Management project.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			6000	28173		2504		5304		Continue	41981	0
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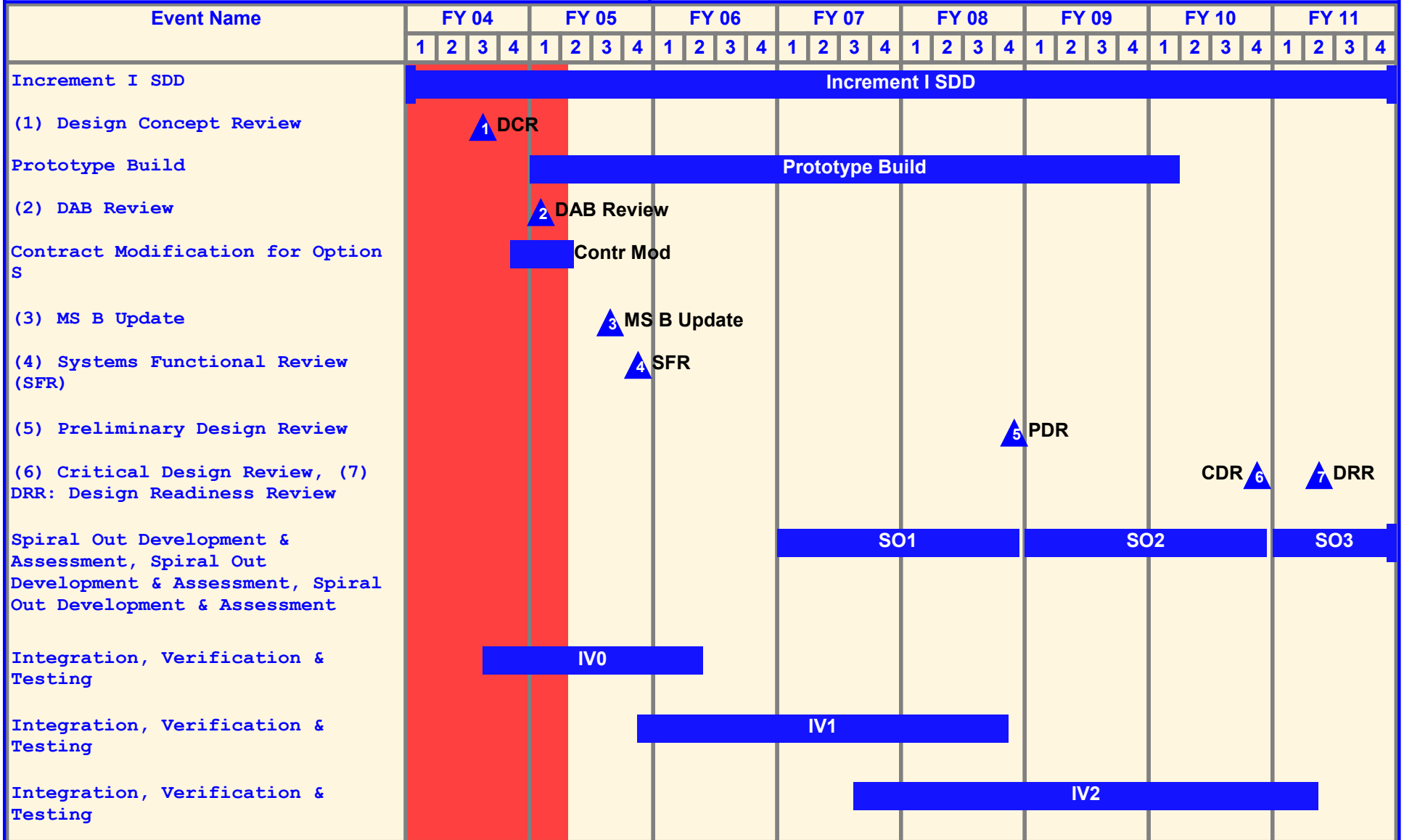
Schedule Profile (R4 Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
ADM Required MS B Update		3Q						
Definitization of Contract Modification for POM-adjusted Program		2Q						
SoS Functional Review (FR)		4Q						
SoS Preliminary Design Review (PDR)					4Q			
Phase 1 Integration at Test Completion		4Q						
Phase 2 Integration at Test Completion				3Q				
SoS Critical Design Review (CDR)							4Q	
Phase 3 Integration at Test Completion					2Q			
Design Ready Review								2Q

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BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604645A - Armored Systems Modernization (ASM)-Eng. Dev.				PROJECT F55		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
F55 SUSTAINMENT	96339	51191	61581	80020	194036	266860	267032	268028	Continuing	Continuing

A. Mission Description and Budget Item Justification: This Project is for System Development and Demonstrate (SDD) Future Combat System (FCS) contractor logistics and training support which includes the development of the management, products, and services required to design, develop, assemble, integrate, and test the supportability processes and the design and development engineering, integration, embedded training, and testing of unique training devices, training systems engineering, training products, training support packages, and training integration for the Unit of Action(UA).

MAJOR PROGRAM MILESTONES

FY05

Develop the Performance Based Logistics (PBL) Implementation Plan

Develop the Material Fielding Plan, which describes the overall fielding process for the FCS equipped UA.

Development of data sets and model software to insert logistics impacts as Operational Availability (Ao), Log Footprint and Life Cycle Costs into war fighter models (JANUS Simulation) and supportability assessments and trades.

Complete the system specifications for the following Logistics Products:

- a. Logistics Decision Support System (LDSS): a network-centric logistics planning system synergistically integrated with Battle Command on the FCS overall Network.
- b. Platform Soldier Mission Readiness System (PSMRS): a network-centric prognostics / diagnostics system synergistically integrated with System of System Common Operating Environment (SOSCOE) on the FCS overall Network.
- c. Integrated Electronic Technical Manuals (IETM): Technical manuals that support diagnosis and repair of FCS systems to support their readiness.

Develop FCS Supportability Strategy that provides requirements for support of the UA, to ensure that the Army Doctrine, Organization, Training, Material, Leadership, Personnel and Facilities (DOTMLPF) is accomplished.

Training Support Plans (TSPs) Development: The first increment of the Single Integrated Task List (SITL) (the collective tasks that need to be performed by UA units) is delivered and base-lined for use in the development of FCS related training packages.

Single Operational Roles List (SORL): The first increment of the SORL is delivered and base-lined as part of the total FCS operational architecture description. The SORL merges the architecture defined Battle Command roles with the roles lists from training, sustaining and other operational stakeholders. The current SORL contains approximately 160 different roles.

Training Common Components (TCC) Development, which consists of:

- The One Semi-automated Force (ONESAF) Objective System (OOS), a computer generated forces system for use in simulations.
- Computer Generated Forces, After Action Review capability, and Exercise Management
- The Army Training Integrated Architecture (Training Tasks repository and archive)

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- The Common Training Instrumentation Architecture (linkage to Live training resources),
 - One Tactical Engagement Simulation System (ONETESS). Build 0 of OOS, which will be integrated with version 1.0 of SOSCOE.
 FCS Training Systems Integration Laboratory (Training SIL) will be established in Orlando to integrate and test embedded training applications prior to being implemented on FCS platforms and systems.

FY06

The initial Business Case Analysis as described in FCS Performance Based logistics(PBL) implementation plan will be conducted. In addition, a Supportability Design Assessment that looks across entire UA to determine how it will be supported during wartime and peacetime will be conducted. The Material Fielding Plan, the PBL Implementation Plan and the Supportability Strategy, Modeling and Simulating (M&S) activities will be updated to reflect refinement of the supportability and training requirements and design concepts.
 TSPs Development: The second increment of the Single Integrated Task List(SITL) is delivered for use in the development of training packages specifically for FCS/UA training capabilities to be developed in Engineering Iteration #1. This adds the first third (approx 500 of an expected 1500) Leader/Battle Staff tasks to the SITL.
 SORL: The second increment of the SORL is delivered as part of the total FCS operational architecture description which merges the defined Leader / Battle Command roles with the roles lists from training, sustaining and other operational stakeholders.
 TCC Development. TCC Build 1 integrated with OOS and additional common components into SOSCOE 1.5 and tested in the FCS Training Systems Integration Laboratory (Training SIL).

FY07

The Material Fielding Plan, the Performance Based Logistics(PBL) implementation plan and the Supportability Strategy, along with M&S models will be updated to reflect refinement of the supportability and training requirements and design concepts.
 Training Development: The third increment of the Single Integrated Task List(SITL), Single Operational Roles List(SORL) and Training Common Components (TCC) will be delivered

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Training	31607	37881	2651	39813
Supportability	64732	13310	58930	40207
Totals	96339	51191	61581	80020

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
0604645 F52 UAV Recon Platforms and Sensors	0	147267	105333	114117	88023	75796	50382	33637	Continuing	Continuing
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0604645 F54 (UGS)	0	28173	2504	5304	6557	6353	5315	2906	Continuing	Continuing
0604645 F55 Sustainment	0	51191	61581	80020	194036	266860	267032	268028	Continuing	Continuing
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0604645 F61 SoS Engineering & Program Management	0	1500956	2260616	2066332	1905563	1797485	1669855	1638582	Continuing	Continuing
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0604645 F59 Common Components	27500	0	0	0	0	0	0	0	0	27500
0604645 F60 Family of Systems Anal & Int	165302	0	0	0	0	0	0	0	0	165302
0604645 F62 Mission Equipment Platforms	132537	0	0	0	0	0	0	0	0	132537
0604645 F63 Network Software	111745	0	0	0	0	0	0	0	0	111745
0604645 F64 Other Contract Costs	313536	0	0	0	0	0	0	0	0	313536
0604645 F65 S of S Engr & Prog Mgt	190331	0	0	0	0	0	0	0	0	190331
0604645 F66 S of S Test and Evaluation	56347	0	0	0	0	0	0	0	0	56347
0604645 F67 Supportability	5252	0	0	0	0	0	0	0	0	5252
0604645 F69 Training	7756	0	0	0	0	0	0	0	0	7756
0604645 F70 NLOS Launch System	49502	0	0	0	0	0	0	0	0	49502

C. Acquisition Strategy: During the FY06-11 POM process, the Army restructured the PM UA Acquisition Program.

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BUDGET ACTIVITY

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The Army announced this restructured plan which strengthen the FCS Program and simultaneously improve the Current Force through early delivery of selected FCS capabilities. The adjustments maintain the Army focus on FCS-equipped UA development and substantially reduce program risk. The adjustments to the FCS Program acquisition strategy fall into four primary categories:

- o The development priority in descending order will be the 1) Network, 2) Unattended Munitions, 3) Unmanned systems, and finally 4) Manned Ground Vehicles (MGV). Consequently the MGV development duration will be extended. However, Non Line-of-Sight-Cannon (NLOS-C) will lead MGV development and deliver prototype NLOS-C systems in 2008 and deliver Block 0 NLOS-C prototypes in 2010.
- o The five previously deferred FCS core systems: 1) UAV Class II, 2) UAV III, 3) Armed Robotic Vehicle (ARV) –Assault, 4) ARV-Reconnaissance and 5) FCS Maintenance and Recovery Vehicle will be funded and fielded with the first FCS-equipped UA, allowing UA fielding of the complete 18 + 1 FCS core systems to begin delivery to the Army in 2014.
- o More robust experimentation and evaluation are included in the program to prove revolutionary concepts, mature the architecture and components, and assist in spiral development.
- o A series of Spiral Out packages will begin in 2008 and continue every two years through 2014 to insert FCS capability into Current Force Modular Brigade Combat Teams (M-BCTs) to include Stryker, Heavy, and Infantry.

The current OTA was modified on 6 Aug 2004 to cover the new Scope of Work (SOW) of the approved POM program. The definitization of the modification is scheduled for February 2005. The PM will be submitting reprogramming request for the FY05 to reflect the above definitization of the modification to the OTA. While the FY06 and beyond reflect the adjusted Army Cost Position (FY06-11 POM approved program), the funding profile for these years may be adjusted upon completion of contract definitization and development of contract/program budget baseline that supports the above program restructure.

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BUDGET ACTIVITY
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Supportability - Log Management	OTA	The Boeing Company - Seattle Washington	31607	13310	1-3Q	58930	1-3Q	40207	1-3Q	Continue	144054	0
b . Training - Planning	OTA	The Boeing Company - Seattle Washington, see remarks	64732	37881	1-3Q	2651	1-3Q	39813	1-3Q	Continue	145077	0
Subtotal:			96339	51191		61581		80020		Continue	289131	0

Remarks: Subcontractors: Computer Science Corp. Federal Sector Defense Group - Hampton, VA; Dynamics Research Corp. Systems Division - Andover, MD; Northrop Grumman, Information Tech, Defense Enterprise Solutions Div, - Mclean, VA

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: All support costs for this project are included in F61 SoS Engineering and Program Management project.

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: All Test and Evaluation costs for this project are included in F61 SoS Engineering and Program Management project.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			96339	51191		61581		80020		Continue	289131	0
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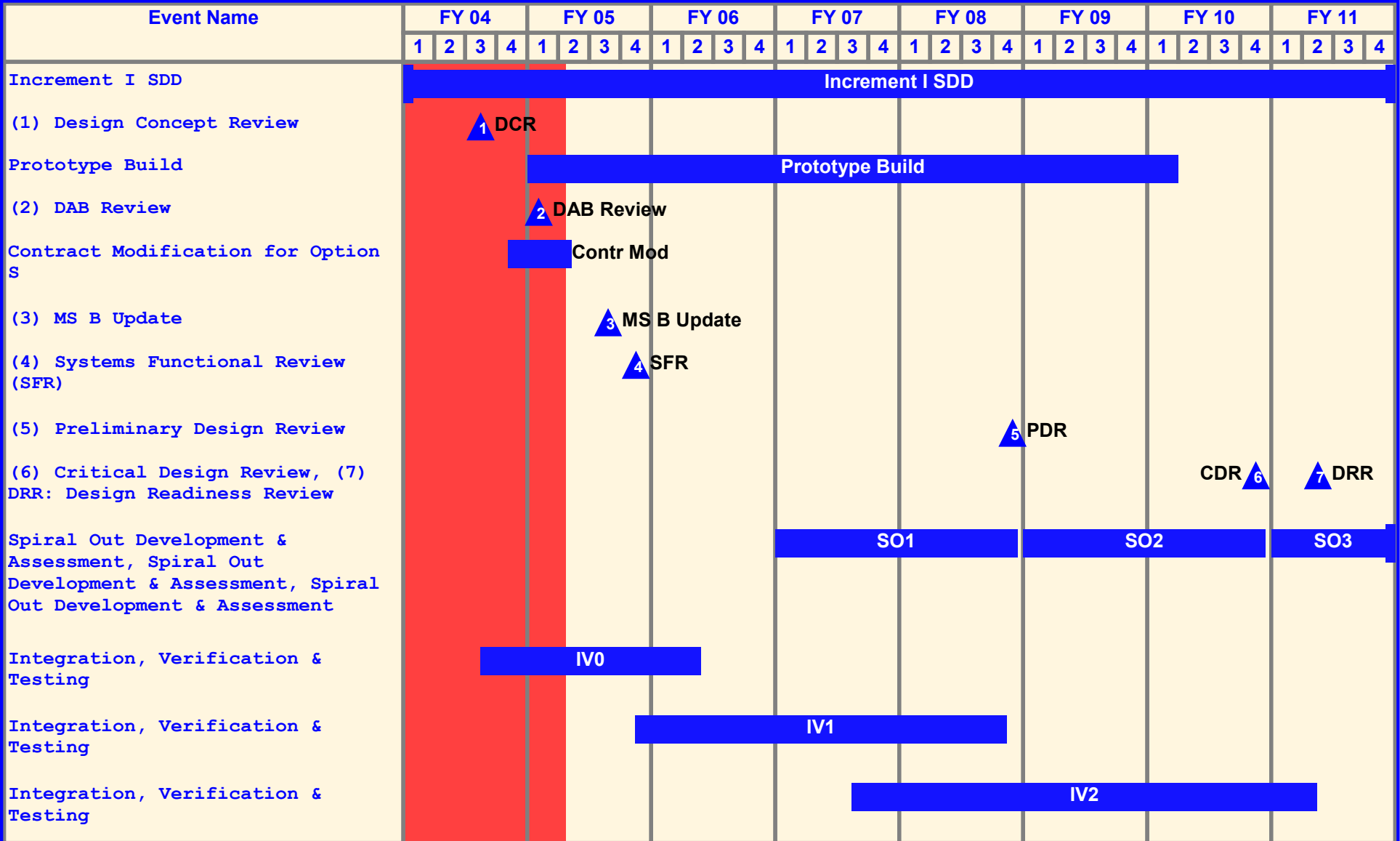
Schedule Profile (R4 Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
ADM Required MS B Update		3Q						
Definitization of Contract Modification for POM-adjusted Program		2Q						
SoS Functional Review (FR)		4Q						
SoS Preliminary Design Review (PDR)					4Q			
Phase 1 Integration at Test Completion		4Q						
Phase 2 Integration at Test Completion				3Q				
SoS Critical Design Review (CDR)							4Q	
Phase 3 Integration at Test Completion					2Q			
Design Ready Review								2Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604645A - Armored Systems Modernization (ASM)-Eng. Dev.				PROJECT F57		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
F57 MANNED GROUND VEHICLES	184611	409714	549150	778022	818073	793008	840463	576124	Continuing	Continuing

A. Mission Description and Budget Item Justification: This Project includes the SDD contractor effort for development, engineering, prototype procurement, integration and assembly of all variants including development of unique mission equipment (such as main armament and fire control) for the MGVs (ICV, RSV, C2V, MCS, NLOS-M, MV, FRMV). This project also includes development of common components for all MGV variants (Mobility Systems), communication systems, command control, vehicle utility, survivability, sensors, structure, vetronics etc.

Major Program Milestones:

MCS Major Activities: FY05-Complete Combinatorial Trade process to support Best Technical Approach derivation. Complete System Best Technical Approach (BTA). Support MGV Requirements Refinement (Path to MGV SFR Activities). FY06-Complete Sub-System Best Technical Approach (BTA). MGV Systems Functional Review (MGV SFR). FY07-MGV Preliminary Design Review (MGV PDR).

NLOS Mortar Major Activities: FY05-NLOS-M Requirements Refinement (Path to MGV SFR Activities). Perform Best Technical Approach (BTA) Activities/Concepting Component Maturation (Round Retention and Ammunition Handling). FY06-MGV Systems Functional Review (MGV SFR). NLOS-M Vehicle Unique Integration and Design Activities Start Shoot-off (Main Weapon Supplier Selection) Component Maturation (Round Retention and Ammunition Handling). FY07-MGV Preliminary Design Review (MGV PDR). Detailed Design Efforts; Begin Main Weapon Supplier Selection. Component Maturation (Round Retention and Ammunition Handling).

C2V/RSV Major Activities: FY05-Continue work on refining and understanding requirements Update PIDS. Develop initial Subsystem Critical Item Dev. Specs. CIDS). Conduct another Best Technical Approach (BTA 3). Update Architecture Products (System, Physical, Logical etc.). Conduct Technical Interchange meetings (TIMS). FY06-Update Subsystem CIDS; Conduct Subsystem BTA; Update Subsystem Interface Control Documents (ICDs); Conduct System Functional Review (SFR). FY07-Conduct Preliminary Design Review (PDR); Update Architecture products; Update ICDs.

ICV/MV/FRMV Major Activities: FY06-MGV Systems Functional Review (MGV SFR). FY07-MGV Preliminary Design Review (MGV PDR).

MGV Joint Software Major Activities: FY05-Simulation Software only delivered to SoS Integration Lab (SW BLD 0); Supports NLOS-C(0)/Firing Platform (SW BLD 1). FY06-Supports NLOS-C(0)/Firing Platform (SW BLD 1); Simulation Software to SoSIL (SW BLD 1). FY07-Supports NLOS-C(0)/Firing Platform (SW BLD 1); Functional Qualification Test (SW BLD 1); Support, Integrated Qualification Test, Integrate BC (SW BLD 2).

Common- Propulsion Major Activities: FY05-Engine Award and Development; TDS Award and Development; Generator Award and Development; Several Comp. Maturation Projects – ESS, Power Converter, TDS; Procurement and Integration of ATR.

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FY06-Systems into Labs for Integration/Testing; Engine Development TDS Development; Generator Development; Several Comp. Maturation Projects – ESS, Power Converter, TDS; S/W Requirements, Code and Test; Integration of ATR. FY07-Systems into Labs for Integration/Testing; Integration of ATR S/W Requirements, Code and Test.

Common – Suspension Major Activities: FY05-Develop a 24 ton design to concept; Band Track Component Maturation. FY06-Band Track Component Maturation; Systems into Labs for Integration/Testing; Procurement and Integration of ATR. FY07-S/W Requirements, Code and Test; Systems into Labs for Integration/Testing; Integration of ATR; Band Track Component Maturation.

Common- Vetronics Major Activities: FY05-Develop a BTA architecture design to concept; Develop flex bus & connector concepts. FY06-Develop flex bus & connector concepts; S/W Requirements, Code and Test; Procurement & Integration of ATR; Systems into Labs for Integration/Testing. FY07-Integration of ATR Systems into Labs for Integration/Testing.

Common – NBC/ECS Major Activities: FY05-Develop a moderate risk H/X and Cooling Fan Approach; Develop & baseline a Thermal Architecture. FY06-Develop & baseline a Thermal Architecture S/W Requirements, Code and Test Systems into Labs for Integration/Testing; Procurement & Integration of ATR. FY07-S/W Requirements, Code & Test; Systems into Labs for Integration/Testing; Procurement & Integration of ATR.

Common – Armor/Structure Major Activities: FY05-Develop a 24 Ton Modular-Scalable BTA IAW new ECC/FCC; Develop A&B Armor & Mine Resistant Structure CMMP. FY06-Develop a 24 Ton Modular-Scalable BTA IAW new ECC/FCC; Develop A&B Armor & Mine Resistant Structure CMMP. FY07-Develop A&B Armor & Mine Resistant Structure CMMP.

Common – Crew Station Major Activities: FY05-Develop a moderate risk Motion Sickness Approach; Develop & baseline a Crew Station Architecture. FY06-Develop & baseline a Crew Station Architecture; Systems into Labs for Integration/Testing Procurement and Integration of ATR. FY07-Systems into Labs for Integration/Testing.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Infantry Carrier Vehicle (ICV)	35245	8134	10706	20032
Mounted Combat Systems (MCS)	80637	54905	50253	67772
Non-Line Of Sight Mortar (NLOS-M)	17519	22437	11281	18764
Command & Control Vehicle (C2V)	20870	40169	10835	18494
Reconnaissance & Surveillance Vehicle (RSV)	23368	31916	15441	26260
FCS Recovery & Maintenance Vehicle (FRMV)	0	21044	0	0
Medical Vehicle (MV)	6972	6050	5944	11997
XM307 DEVELOPMENT / MK -44 AMMO DEV	0	0	23000	29166
COMMON- C4ISR	0	0	119866	137762

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Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007
COMMON - MOBILITY	0	0	37889	57740
COMMON - SOFTWARE	0	0	105777	110999
COMMON - OTHER	0	225059	158158	279036
Totals	184611	409714	549150	778022

B. Other Program Funding Summary

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
0604645 F52 UAV Recon Platforms and Sensors	0	147267	105333	114117	88023	75796	50382	33637	Continuing	Continuing
0604645 F53 (UGV)	0	130935	86445	106341	116608	118798	117904	81003	Continuing	Continuing
0604645 F54 (UGS)	0	28173	2504	5304	6557	6353	5315	2906	Continuing	Continuing
0604645 F55 Sustainment	0	51191	61581	80020	194036	266860	267032	268028	Continuing	Continuing
0604645 F57 (MGV)	0	409714	549150	778022	818073	793008	840463	576124	Continuing	Continuing
0604645 F61 SoS Engineering & Program Management	0	1500956	2260616	2066332	1905563	1797485	1669855	1638582	Continuing	Continuing
0604646 F72 Non-Line of Sight Launch System (NLOS-LS)	0	55794	231554	329412	280225	261362	90950	18100	Continuing	Continuing
0604647 F58 Non-Line of Sight Cannon (NLOS-C)	0	476736	107587	262492	273226	140428	139569	72325	Continuing	Continuing
WTCV	0	0	0	0	167402	328778	1520447	3621968	Continuing	Continuing
0604645 F59 Common Components	27500	0	0	0	0	0	0	0	0	27500
0604645 F62 Mission Equipment Platforms	132537	0	0	0	0	0	0	0	0	132537
0604645 F63 Network Software	111745	0	0	0	0	0	0	0	0	111745
0604645 F64 Other Contract Costs	313536	0	0	0	0	0	0	0	0	313536
0604645 F65 S of S Engr & Prog Mgt	190331	0	0	0	0	0	0	0	0	190331
0604645 F66 S of S Test and Evaluation	56347	0	0	0	0	0	0	0	0	56347
0604645 F67 Supportability	5252	0	0	0	0	0	0	0	0	5252
0604645 F69 Training	7756	0	0	0	0	0	0	0	0	7756
0604645 F70 NLOS Launch System	49502	0	0	0	0	0	0	0	0	49502

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C. Acquisition Strategy: During the FY06-11 POM process, the Army restructured the PM UA Acquisition Program. The Army announced this restructured plan which strengthens the FCS Program and simultaneously improve the Current Force through early delivery of selected FCS capabilities. The adjustments maintain the Army focus on FCS-equipped UA development and substantially reduce program risk. The adjustments to the FCS Program acquisition strategy fall into four primary categories:

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . INFANTRY CARRIER VEHICLE (ICV)	OTA	THE BOEING COMPANY - SEATTLE WASHINGTON, see remark 1	35245	8134	1-3Q	10706	1-3Q	20032	1-3Q	Continue	Continue	0
b . MOUNTED COMBAT SYSTEMS (MCS)	OTA	THE BOEING COMPANY - SEATTLE WASHINGTON, see remark 1	80637	54905	1-3Q	50253	1-3Q	67772	1-3Q	Continue	Continue	0
c . NON-LINE OF SIGHT MORTAR (NLOS-M)	OTA	THE BOEING COMPANY - SEATTLE WASHINGTON, see remark 1	17519	22437	1-3Q	11281	4Q	18764	1-3Q	Continue	Continue	0
d . COMMAND & CONTROL VEHICLE (C2V)	OTA	THE BOEING COMPANY - SEATTLE WASHINGTON, see remark 2	20870	40169	1-3Q	10835	1-3Q	18494	1-3Q	Continue	Continue	0
e . RECONNAISSANCE & SURVEILLANCE VEHICLE (RSV)	OTA	THE BOEING COMPANY - SEATTLE WASHINGTON, see remark 2	23368	31916	1-3Q	15441	1-3Q	26260	1-3Q	Continue	Continue	0
f . FCS RECOVERY & MAINT VEH (FRMV)	OTA	THE BOEING COMPANY - SEATTLE WASHINGTON, see remark 2	0	21044	1-3Q	0		0		Continue	Continue	0
g . MEDICAL VEHICLE (MV)	OTA	THE BOEING COMPANY - SEATTLE WASHINGTON, SEE REMARK 3	6972	6050	1-3Q	5944	1-3Q	11997	1-3Q	Continue	Continue	0

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
h . XM307 DEVELOPMENT / MK-44 AMMO DEV	OTA	THE BOEING COMPANY - SEATTLE WASHINGTON, See Remark 5	0	0		23000	1-3Q	29166	1-3Q	Continue	Continue	0
i . COMMON - C4ISR	OTA	THE BOEING COMPANY - SEATTLE WASHINGTON, SEE REMARK 4	0	0		119866	1-3Q	137762	1-3Q	Continue	Continue	0
j . COMMON - MOBILITY	OTA	THE BOEING COMPANY - SEATTLE WASHINGTON, SEE REMARK 1, 2, 3	0	0		37889	1-3Q	57740	1-3Q	Continue	Continue	0
k . COMMON - SOFTWARE	OTA	THE BOEING COMPANY - SEATTLE WASHINGTON, SEE REMARK 1, 2, 3	0	0		105777	1-3Q	110999	1-3Q	Continue	Continue	0
l . COMMON - OTHER	OTA	THE BOEING COMPANY - SEATTLE WASHINGTON, SEE REMARK 1,2, 3	0	225059	1-3Q	158158	1-3Q	279036	1-3Q	Continue	Continue	0
Subtotal:			184611	409714		549150		778022		Continue	Continue	0

Remarks: Remark 1: Subcontractor: General Dynamics- Sterling Heights, MI
 Remark 2: Subcontractor: United Defense Limited Partnership, Santa Clara, CA
 Remark 3: Subcontractor: United Defense-Minnepolis, MN
 Remark 4: Subcontractor: Raytheon Network Centric Systems, Plano, TX
 Remark 5: Subcontractors: General Dynamics Armament & Technical Products, Charlotte, NC - ATK Aliant Techsystems, Edina, MN

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: All support costs for this project are included in F61 SoS Engineering and Program Management project.

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: All Test and Evaluation costs for this project are included in F61 SoS Engineering and Program Management project.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			184611	409714		549150		778022		Continue	Continue	0
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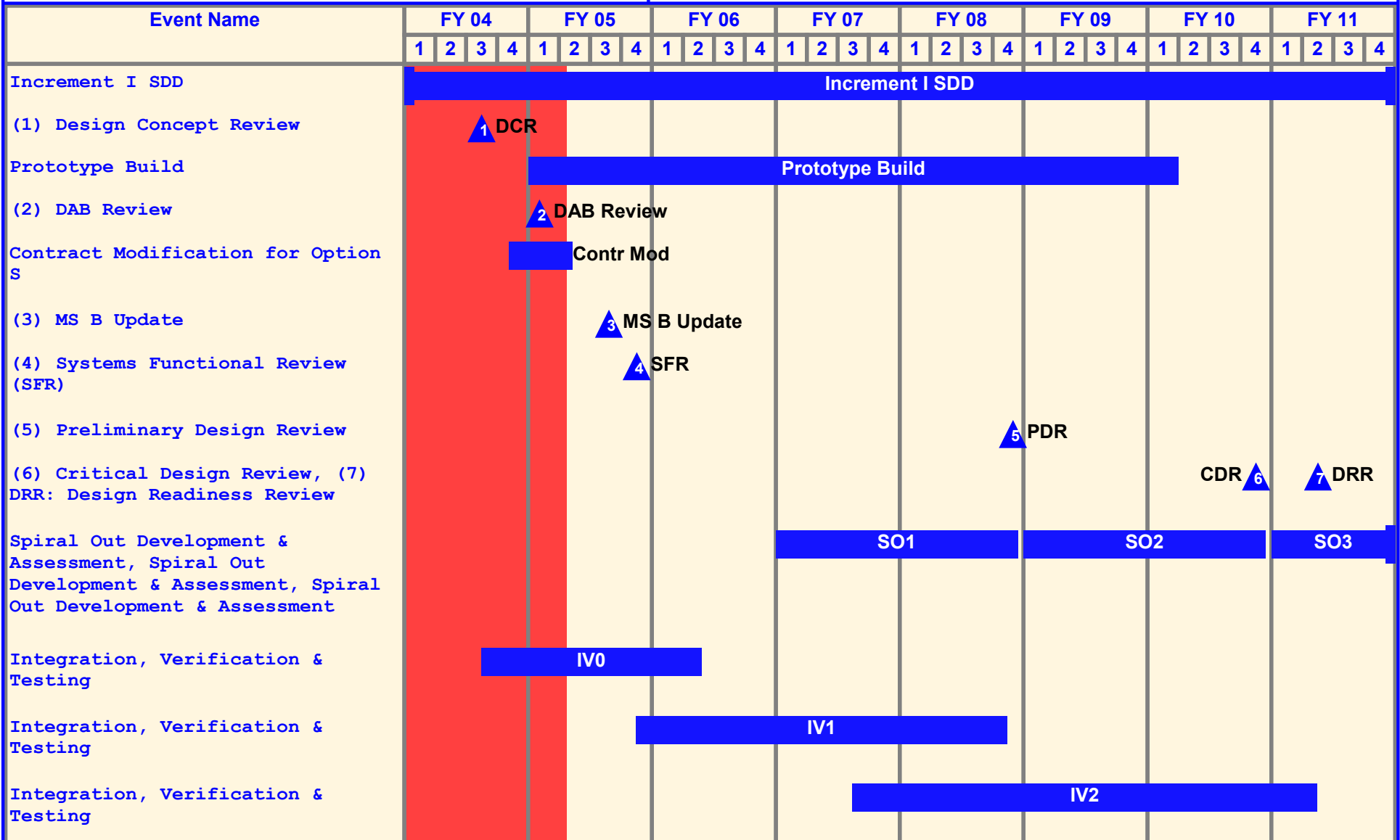
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
ADM Required MS B Update		3Q						
Definitization of Contract Modification for POM-adjusted Program		2Q						
SoS Functional Review (FR)		4Q						
SoS Preliminary Design Review (PDR)					4Q			
Phase 1 Integration at Test Completion		4Q						
Phase 2 Integration at Test Completion				3Q				
SoS Critical Design Review (CDR)							4Q	
Phase 3 Integration at Test Completion					2Q			
Design Ready Review								2Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604645A - Armored Systems Modernization (ASM)-Eng. Dev.				PROJECT F61		
COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
F61 S O S ENGINEERING AND PROGRAM MANAGEMENT	Actual 313348	Estimate 1500956	Estimate 2260616	Estimate 2066332	Estimate 1905563	Estimate 1797485	Estimate 1669855	Estimate 1638582	Continuing	Continuing

A. Mission Description and Budget Item Justification: This PE includes government and System Development and Demonstration (SDD) contractor efforts associated with System of Systems (SoS) engineering Family of Systems (FoS) analysis and integration, network software, SoS test and evaluation, and program management. This project includes support to other DOD agencies for joint programs and collaboration efforts with Unit of Action (UA).

MAJOR PROGRAM MILESTONES

Completion of UA maturity reviews which provide program-level SoS synchronization by providing status of the current engineering, integration, and verification progress.
FY05

Milestone B Update: The government and Lead System Integrator (LSI) will provide all DoD required documentation to support the Milestone B update in April 2005.

In-Process Review 2 (IPR 2): The IPR 2 is a technical review to assess performance progress towards completion of products necessary for the System of Systems Functional Review (SoSFR) – objective is 50% of the functional decomposition and functional analysis necessary to fully capture UA requirements.

Engineering maturity review 1/SoSFR: The purpose of this review is to evaluate the results of the engineering integration (EI) 0 activity and establish the readiness to enter the next iteration, EI 1.

FY06

Capability maturity review 1/Incremental SoS Preliminary Design Review (IPDR): The purpose of this review is to evaluate the results of the Integration and Verification (IV) 0 activity and establish the readiness to enter the next IB, iteration, IV 1. The IPDR provides an early design assessment of the accelerated FCS systems and focuses on the UA design impacts associated with these systems.

FY07

Engineering Maturity Review 2: The engineering maturity review 2 occurs at the end of EI 1. The purpose of this review is to evaluate the results of the EI 1 activity and establish the readiness to enter next EI 2.

Major Software Deliveries

FY05

The completion of FCS build 0 software, SoS Common Operating Environment (SOSCOE) middleware Build 1.

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0 software and the logistics (PS-MRS, LDSS, IETM, and LDR) software build 0 will occur. FY06

Deliveries of the following Software products will occur: SOSCOE Build 1.5, System Simulation Facility (S2F) Build 1.0, Integrated Computer System (ICS) Build 1.8, and Training Build 1.0.

FY07

The completion of FCS build 1 software, SOSCOE build 1.8, Battle Command build 1.0, Network Management System Build 1.0, Unmanned Aerial Vehicle (UAV) Class 1 and Class IV build 1.0, Manned Ground Vehicle (MGV) build 1.0, logistics build 1.0, UGV (MULE, SUGV and ARV) Software, and Training Build 1.0 will occur. These deliveries will include approximately 6 Million ESLOC of the estimated 19 Million total.

Tests and Experimentation

FY05

Integration and Verification Iteration 0 (IV 0) begins execution during FY05. The IV 0 objectives are to reduce program risk.

Experiment 1.1 planning continues. The purpose of Experiment 1.1 is to provide an early opportunity to assess development progress on a limited set of the available FCS Network products (hardware and software) integrated for use in an operational environment. The derived set of objectives, Essential Elements of Analysis (EEAs), Measures of Effectiveness (MOEs) and Measures of Performance (MOPs) will be finalized in FY05 and released as part of the Experiment 1.1 Plan.

FY06

Integration and Verification Iteration 0 (IV 0) concludes with lessons learned leveraged against Experimentation 1.1, Integration and Verification Iteration 1 (IV 1) and Spiral 1 I&V activities.

Experimentation 1.1 will be executed with a series of lab-based integration efforts followed by a series of incremental integration efforts in the field, each building on and benefiting from the previous effort.

Experimentation planning for phase 2 will also commence with refinement of the objectives, EEAs, MOEs and MOPs.

IV 1 is initiated with the finalization of the Assessment Objectives to be addressed in this timeframe of the Program

The initial integration in the SoSIL for IV 1 will begin.

FY07

Integration and Verification Iteration 1 (IV 1) continues and Experiment 1.1 is completed.

Experimentation planning for phase 2 will be finalized with approved Assessment Objectives.

IV 1 simulation-based integration in the lab will continue through formal dry-runs. Integration and Verification Iteration 2 (IV 2) is initiated with the finalization of the Assessment Objectives.

Material:

- FCS Specific Targets and Threat Simulators:
- Ammunition to support test:
- Mobile Node: LSI is procuring tractor trailer, computers, displays, WAN, encryptors, etc to full this node.
- FCS Unique Instrumentation Distributed Test Tools: upgrades to DCARS, TCARS, time-ordered events listing

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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0604645A - Armored Systems Modernization
(ASM)-Eng. Dev.

PROJECT
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Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
GOVERNMENT - PM	313348	209248	251322	264892
GOVERNMENT - STE	0	80480	250196	276598
GOVERNMENT - M & S	0	4024	13197	30976
GOVERNMENT - OTHER	0	0	0	39350
CONTRACTOR - SOFTWARE	0	277657	596482	634273
CONTRACTOR - SE/PM	0	893331	806660	416902
CONTRACTOR - STE	0	36216	125760	187317
CONTRACTOR - FEE	0	0	216999	216024
Totals	313348	1500956	2260616	2066332

B. Other Program Funding Summary

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
0604645 F52 UAV Recon Platforms and Sensors	0	147267	105333	114117	88023	75796	50382	33637	Continuing	Continuing
0604645 F53 (UGV)	0	130935	86445	106341	116608	118798	117904	81003	Continuing	Continuing
0604645 F54 (UGS)	0	28173	2504	5304	6557	6353	5315	2906	Continuing	Continuing
0604645 F55 Sustainment	0	51191	61581	80020	194036	266860	267032	268028	Continuing	Continuing
0604645 F57 (MGV)	0	409714	549150	778022	818073	793008	840463	576124	Continuing	Continuing
0604645 F61 SoS Engineering & Program Management	0	1500956	2260616	2066332	1905563	1797485	1669855	1638582	Continuing	Continuing
0604646 F72 Non-Line of Sight Launch System (NLOS-LS)	0	55794	231554	329412	280225	261362	90950	18100	Continuing	Continuing
0604647 F58 Non-Line of Sight Cannon (NLOS-TCV)	0	476736	107587	262492	273226	140428	139569	72325	Continuing	Continuing
0604645 F59 Common Components	27500	0	0	0	0	0	0	0	0	27500
0604645 F60 Family of System, Anal & Int	165302	0	0	0	0	0	0	0	0	165302
0604645 F62 Mission Equipment Platforms	132537	0	0	0	0	0	0	0	0	132537
0604645 F63 Network Software	111745	0	0	0	0	0	0	0	0	111745
0604645 F64 Other Contract Costs	313536	0	0	0	0	0	0	0	0	313536
0604645 F65 S of S Engr & Prog Mgt	190331	0	0	0	0	0	0	0	0	190331
0604645 F66 S of S Test and Evaluation	56347	0	0	0	0	0	0	0	0	56347
0604645 F67 Supportabilityt	5252	0	0	0	0	0	0	0	0	5252
0604645 F69 Training	7756	0	0	0	0	0	0	0	0	7756
0604645 F70 NLOS Launch System	49502	0	0	0	0	0	0	0	0	49502

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BUDGET ACTIVITY

5 - System Development and Demonstration

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**0604645A - Armored Systems Modernization
(ASM)-Eng. Dev.**

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C. Acquisition Strategy: During the FY06-11 POM process, the Army restructured the PM UA Acquisition Program. The Army announced this restructured plan which strengthens the FCS Program and simultaneously improve the Current Force through early delivery of selected FCS capabilities. The adjustments maintain the Army focus on FCS-equipped UA development and substantially reduce program risk. The adjustments to the FCS Program acquisition strategy fall into four primary categories:

- o The development priority in descending order will be the 1) Network, 2) Unattended Munitions, 3) Unmanned systems, and finally 4) Manned Ground Vehicles (MGV). Consequently the MGV development duration will be extended. However, Non Line-of-Sight-Cannon (NLOS-C) will lead MGV development and deliver prototype NLOS-C systems in 2008 and deliver Block 0 NLOS-C prototypes in 2010.
- o The five previously deferred FCS core systems: 1) UAV Class II, 2) UAV III, 3) Armed Robotic Vehicle (ARV) –Assault, 4) ARV-Reconnaissance and 5) FCS Maintenance and Recovery Vehicle will be funded and fielded with the first FCS-equipped UA, allowing UA fielding of the complete 18 + 1 FCS core systems to begin delivery to the Army in 2014.
- o More robust experimentation and evaluation are included in the program to prove revolutionary concepts, mature the architecture and components, and assist in spiral development.
- o A series of Spiral Out packages will begin in 2008 and continue every two years through 2014 to insert FCS capability into Current Force Modular Brigade Combat Teams (M-BCTs) to include Stryker, Heavy, and Infantry.

The current OTA was modified on 6 Aug 2004 to cover the new Scope of Work (SOW) of the approved POM program. The definitization of the modification is scheduled for February 2005. The PM will be submitting reprogramming request for the FY05 to reflect the above definitization of the modification to the OTA. While the FY06 and beyond reflect the adjusted Army Cost Position (FY06-11 POM approved program), the funding profile for these years may be adjusted upon completion of contract definitization and development of contract/program budget baseline that supports the above program restructure.

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BUDGET ACTIVITY
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CONTRACTOR SYS ENG & PROG MGT	OTA	The Boeing Company - Seattle, WA	313348	833031	1Q	758063	1Q	386702	1Q	Continue	Continue	0
b . CONTRACT FEE	OTA	The Boeing Company - Seattle, WA	0	0		203926	1Q	200376	1Q	Continue	Continue	0
c . CONTRACTOR NETWORK SOFTWARE	OTA	The Boeing Company - Seattle, WA	0	258915	1Q	560547	1Q	588327	1Q	Continue	Continue	0
Subtotal:			313348	1091946		1522536		1175405		Continue	Continue	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . GOVERNMENT PROGRAM MGT	ALLOT	PM FCS UA - ST. Louis, MO	0	296439	1Q	372372	1Q	395386	1Q	Continue	Continue	0
b . GOVERNMENT OTHER	ALLOT	PM FCS UA - ST. Louis, MO	0	0		0		36500	1Q	Continue	Continue	0
Subtotal:			0	296439		372372		431886		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CONTRACTOR - STE	OTA	The Boeing Company - Seattle, WA	0	33771	1Q	118184	1Q	173748	1Q	Continue	Continue	0
b . GOVERNMENT - STE	ALLOT	PM FCS-UA - ST. Louis, MO	0	75048	1Q	235123	1Q	256562	1Q	Continue	Continue	0
c . MODELING & SIMULATION	ALLOT	PM FCS-UA - ST. Louis, MO	0	3752	1Q	12401	1Q	28731	1Q	Continue	Continue	0
Subtotal:			0	112571		365708		459041		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
Project Total Cost:			313348	1500956		2260616		2066332		Continue	Continue	0

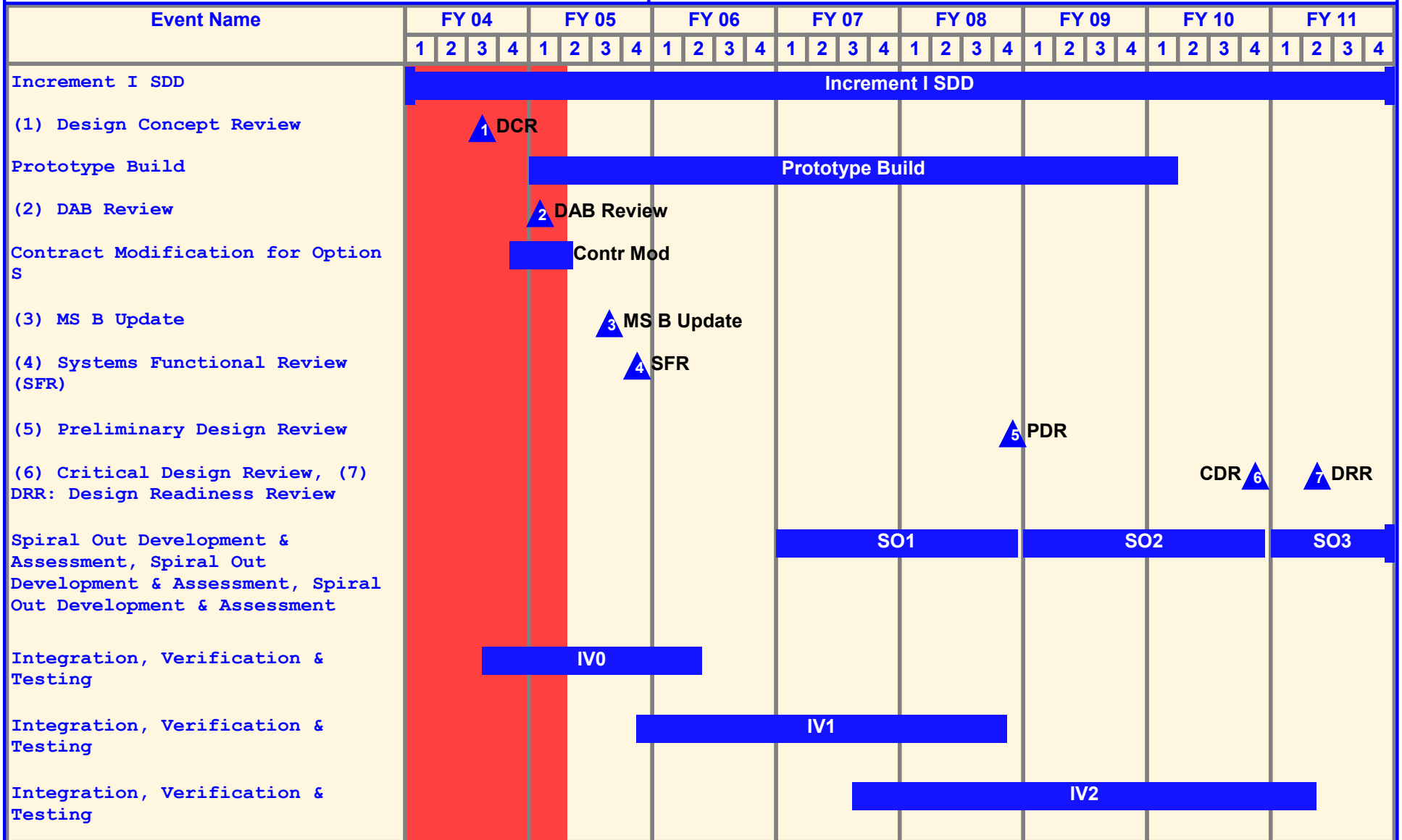
Schedule Profile (R4 Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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Schedule Detail (R4a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
ADM Required MS B Update		3Q						
Definitization of Contract Modification for POM- Adjusted Program		2Q						
SoS Functional Review (FR)	4Q							
SoS Preliminary Design Review (PDR)					4Q			
Phase 1 Integration at Test Completion		4Q						
Phase 2 Integration at Test Completion				3Q				
SoS Critical Design Review (CDR)							4Q	
Phase 3 Integration at Test Completion					2Q			
Design Ready Review								2Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604646A - Non Line of Sight Launch System

PROJECT
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COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
F72 NON LINE OF SIGHT LAUNCH SYSTEM	0	55794	231554	329412	280225	261362	90950	18100	0	1267397

A. Mission Description and Budget Item Justification: This project funds the System Development and Demonstration (SDD) for the Non Line of Sight-Launch System (NLOS-LS), which is a core system of the Army's Future Combat System (FCS).

This project focuses on the development of a materiel solution to meet the NLOS-LS operational need as delineated in the FCS Operational Requirements Document (ORD). NLOS-LS provides enabling lethality for the FCS Unit of Action (UA). NLOS-LS consists of a family of missiles and a highly deployable, platform-independent Container Launch Unit (CLU) with self-contained technical fire control, electronics, and software for remote, unmanned operations. The NLOS-LS configuration will consist of Precision Attack Missiles (PAMs) focused on defeating hard targets and Loitering Attack Missiles (LAMs) focused on defeating fleeting, high-value targets as well as supporting both targeting information and Battle Damage Assessment. Each of the missiles will be vertically launched directly from the CLU based on fire missions received via the FCS UA network and are capable of being updated in-flight via on-board radios by the network. The vertical launch capability permits a system that is highly deployable as well as the ability to engage a wide spectrum of targets in diverse environments and terrain. Both missiles will have limited Automatic Target Recognition (ATR) capability which can be upgraded in future versions.

The FY 06-07 funding supports the NLOS-LS SDD program. Efforts will focus on allocation of requirements, design activities, component build and test, and conduct of both a Preliminary Design Review (PDR) and Critical Design Review (CDR). Beginning in FY05, the NLOS-LS (CLU and PAM) is realigned to meet the FCS Spiral 1 requirements and to be evaluated in the Evaluation Brigade Combat Team (EBCT) for insertion in current forces.

FY04 and prior funding displayed in 0604645A, Project F51/70.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
PAM detailed system design, software engineering, radio integration, IV0 and IVI simulations, prototype manufacturing	0	18322	126368	186985
LAM detailed system design, software engineering, prototype manufacturing	0	7100	0	0
CLU detailed system design, software engineering, radio and network integration, IVI emulator, prototype manufacturing	0	8661	74855	96935
NLOS-LS System Integration, SOSCOE integration, system level engineering and test and evaluation	0	21711	30331	45492
Totals	0	55794	231554	329412

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604646A - Non Line of Sight Launch System

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B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget	0	0	0
Current Budget (FY 2006/2007 PB)	55794	231554	329412
Total Adjustments	55794	231554	329412
Net of Program/Database Changes			
Congressional program reductions	-803		
Congressional rescissions			
Congressional increases			
Reprogrammings	58200		
SBIR/STTR Transfer	-1603		
Adjustments to Budget Years		231554	329412

Change Summary Explanation: FY 05 funds were moved from Program Element 0604645A, Armored Systems Modernization, (FCS) as per Congressional direction with FY 06/07 funding continuing in this Program Element, 0604646A.

C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PE 0604645 F51/F70	49502	0	0	0	0	0	0	0	0	49502
PE 0604646 F72	6000	0	0	0	0	0	0	0	0	6000
PE 0603581N Navy	1096	5350	0	0	0	0	0	0	0	6446
PE 0603313 A263 Msl & Rocket Adv Tech	0	29956	39635	14277	0	0	0	0	0	83868

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D. Acquisition Strategy: During the FY06-11 POM process, the Army restructure the PM UA Acquisition Program. The Army announced this restructured plan which strengthens the FCS Program and improves the Current Force through early delivery of selected FCS capabilities. The adjustments maintain the Army focus on FCS-equipped UA development and substantially reduce program risk. The Army awarded the NLOS-LS SDD contract, on 19 March 2004, to Netfires Limited Liability Company (LLC), consisting of Lockheed Martin Corporation, doing business through its Missiles and Fire control and operating entity in Grand Prairie, TX, and the Raytheon Corporation, doing business through its Missile Systems Business Unit in Tuscon, Arizona. The NLOS-LS SDD contract was definitized 20 Aug 04. Due to the removal of funding for the LAM Statement of Work (SOW) requirements, LAM activities will continue in the Army's Science and Technology (S&T) program to make improvements through technology development and insertion. More robust experimentation and evaluation are included in the program to prove revolutionary concepts, mature the architecture and components, and assist in spiral development. A series of four Spiral Out packages will begin in 2008 and continue every two years through 2014 to insert NLOS-LS capability into Current Force Modular Brigade Combat Teams (M-BCTs) to include Stryker, Heavy, and Infantry.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PAM	CPIF	Netfires, LLC - Grand Prairie, Texas	0	18322	1-3Q	126368		186985		136269	467944	0
b . LAM	CPIF	Netfires, LLC - Grand Prairie ,Texas	0	7100	1-3Q	0		0		0	7100	0
c . CLU	CPIF	Netfires, LLC - Grand Prairie ,Texas	0	8661	1-3Q	74855		96935		167392	347843	0
d . NLOS-LS System Integration	MULTI	Netfires, LLC - Grand Prairie, Texas and Various Support	0	8618	1-3Q	11391		24234		241142	285385	0
Subtotal:			0	42701		212614		308154		544803	1108272	0

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604646A - Non Line of Sight Launch System

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	Various	Various	0	3141		3081		3173		13674	23069	0
Subtotal:			0	3141		3081		3173		13674	23069	0

Remarks: .

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	Various	Various	0	1275		3131		4921		36794	46121	0
Subtotal:			0	1275		3131		4921		36794	46121	0

Remarks: .

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	Various	Various	0	8677		12728		13164		55366	89935	0
Subtotal:			0	8677		12728		13164		55366	89935	0

Remarks: .

Project Total Cost:			0	55794		231554		329412		650637	1267397	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604646A - Non Line of Sight Launch System

PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11																							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																				
NLOS-LS Risk Reduction	[Red shaded area]																																																			
(1) SDD Contract Award	▲1																																																			
NLOS-LS SDD	[Blue bar: NLOS-LS SDD]																																																			
(2) Preliminary Design Review																												▲2																								
(3) Critical Design Review																														▲3																						
Spiral Out 1 Assessment																																[Blue bar: SO 1 Assessment]																				
Tactical Prototype CLUs to UAEE																																[Blue bar: Tactical Prototype CLUs]																				
(4) IPD #1 LLI																																		▲4																		
(5) IPD #2 LRIP																																						▲5														
LRIP Award																																								[Blue bar: LRIP]												
(6) Operational Testing																																										▲6										
(7) Initial Operational Capability																																														▲7						
(8) Full-Rate Decision																																																		▲8		
NLOS-LS S&T Increment I and Objective Systems	[Blue bar: S&T for Increment I and Objective Systems]																																																			

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604646A - Non Line of Sight Launch System

PROJECT
F72

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
NLOS-LS Risk Reduction	1-2Q							
SDD Contract Award	2Q							
NLOS-LS SDD	3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-2Q	
Preliminary Design Review			1Q					
Critical Design Review				2Q				
Spiral Out 1 Assessment					1-4Q			
Tactical Prototype CLUs to UAEE					1-2Q			
IPD #1 LLI					2Q			
IPD #2 LRIP						1Q		
LRIP Award						2-4Q	1-4Q	1-4Q
Operational Testing							2Q	
Initial Operational Capability							3Q	
Full-Rate Decision							4Q	
NLOS-LS S&T Increment 1 and Objective System	1-4Q	1-4Q	1-4Q	1-4Q				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604647A - Non Line of Sight Cannon					PROJECT F58	
COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
F58 NON LINE OF SIGHT CANNON	251344	476736	107587	262492	273226	140428	139569	72325	0	1723707

A. Mission Description and Budget Item Justification: Future Combat Systems (FCS) will operate as a System of Systems (SoS) that will network existing systems, systems already under development, and new systems to be developed to meet the needs of the Unit of Action (UA). The network will enable improved intelligence, surveillance and reconnaissance, battle command, real time sensor-shooter linkages, and increased synergy between echelons and within small units. It will also enable the UA to connect to the Unit of Employment (UE), joining capabilities, and national assets making these capabilities available to the small units of the UA.

FCS enables the networked UA to develop the situation in and out of contact, set conditions, maneuver to positions of advantage to close with and destroy the enemy through standoff attack and combat assault as articulated in the Future Force UA Operations and Organizational (O&O) plan.

The FCS program is contained in three Program Elements (PEs): Non-Line of Sight - Cannon (NLOS-C), Non-Line of Sight - Launch Systems (NLOS-LS) and Armored Systems Modernization (ASM). PE NLOS-C contains the development effort associated with NLOS-C work and in FY05 some of Manned Ground Vehicle (MGV) common components. To meet pre-production Congressionally directed fielding requirements by FY08, the NLOS-C becomes the lead MGV variant. PE ASM contains the development effort for the balance of the common MGV components.

NLOS-C provides networked, sustained, extended-range (30km) cannon fires for precision attack of point and area targets in support of the FCS UA.

The Army is executing the FCS program to achieve the earliest possible fielding of the first FCS-equipped UA. The Army plan is to deliver six pre-production NLOS-C systems for limited user and developmental testing in 2008. The first Production units will be fielded by CY 2010, with 18 delivered by CY 2012. The UA Capability for NLOS-C will be fielded in FY 2014.

The Army established NLOS-C as the lead MGV of the FCS FoS. The FCS program focus is on providing combat capability at the unit level. Key to this approach is the synergy achieved by integrated development and acquisition of sensors, unmanned vehicles, airframes, and combat vehicles including NLOS-C working together and connected by a network, all operated by skilled soldiers. Commonality of hardware and software within the FCS program is a priority action needed to reduce the Lifecycle costs and logistical footprint of the UA.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604647A - Non Line of Sight Cannon

PROJECT

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Major Program Milestones

NLOS-C Work

FY05

System Demonstrator Testing @ YPG

Complete Increment 0 Mission Module Preliminary Design

Best Technical Approach (BTA) Activities/Concepting

Support MGVS Requirements Refinement (Path to MGVS SFR Activities)

FY06

Complete Increment 0 Common Chassis Design

Complete Increment 0 Design

MGVS Systems Functional Review (MGVS SFR) (BTA Completed)

FY07

Complete Increment 0 SW Build 1

Increment 0 Prototype Fabrication and Initial Integration

Increment 0 Firing Platform Shakedown

MGVS Preliminary Design Review (MGVS PDR)

MGVS JOINT SOFTWARE MAJOR ACTIVITIES

FY05

Simulation Software only delivered to SOSIL (SW BLD 0)

Supports NLOS-C(0)/Firing Platform (SW BLD 1)

COMMON – PROPULSION MAJOR ACTIVITIES

FY05

Engine Award and Development

TDS Award and Development

Generator Award and Development

Several Comp. Maturation Projects – ESS, Power Converter, TDS

S/W Requirements, Code and Test

Procurement and Integration of

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

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0604647A - Non Line of Sight Cannon

PROJECT

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ATR

COMMON SUSPENSION MAJOR ACTIVITIES

FY05

Develop a 24 ton design to concept
Band Track Component Maturation
S/W Requirements, Code and Test

COMMON – VETRONICS MAJOR ACTIVITIES

FY05

Develop a Best Technical Approach(BTA) architecture design to concept
Develop flex bus and connector concepts
S/W Requirements, Code and Test

COMMON – NBC/ECS MAJOR ACTIVITIES

FY05

Develop a moderate risk H/X and Cooling Fan Approach
Develop and baseline a Thermal Architecture
S/W Requirements, Code and Test

COMMON – ARMOR /STRUCTURE MAJOR ACTIVITIES

FY05

Develop a 24 Ton Modular-Scalable BTA IAW new ECC/FCC
Develop A&B Armor and Mine Resistant Structure CMMP

COMMON – CREW STATION MAJOR ACTIVITIES

FY05

Develop a moderate risk Motion Sickness Approach
Develop and baseline a Crew Station Architecture
S/W Requirements, Code and Test

Note All Common Efforts in FY06 and out are included in MGV Project

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BUDGET ACTIVITY
5 - System Development and Demonstration

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Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Non-Line of Sight - Cannon (NLOS-C) Mission Equipment	251344	84405	107587	262492
Common	0	383050	0	0
Test	0	9281	0	0
Totals	251344	476736	107587	262492

B. Program Change Summary

	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	497643	459084	285095
Current Budget (FY 2006/2007 PB)	476736	107587	262492
Total Adjustments	-20907	-351497	-22603
Net of Program/Database Changes			
Congressional Program Reductions	-7206		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-13701		
Adjustments to Budget Years		-351497	-22603

Change Summary Explanation: Funding - FY 06/07: Funds realigned to support Future Combat Systems (0604645A) and Non-Line of Sight Launcher (0604646A).

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C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
0604645 F52 (UAV) Recon Platforms and Sensors	0	147267	105333	114117	88023	75796	50382	33637	Continue	Continue
0604645 F53 (UGV)	0	130935	86445	106341	116608	118798	117904	81003	Continue	Continue
0604645 F54 (UGS)	0	28173	2504	5304	6557	6353	5315	2906	Continue	Continue
0604645 F55 Sustainment	0	51191	61581	80020	194036	266860	267032	268028	Continue	Continue
0604645 F57 (MGV)	0	409714	549150	778022	818073	793008	840463	576124	Continue	Continue
0604645 F61 SoS Engineering & Program Management	0	1500956	2260616	2066332	1905563	1797485	1669855	1638582	Continue	Continue
0604646 F72 Non-Line of Sight Launch System (NLOS-LS)	0	55794	231554	329412	280225	261362	90950	18100	Continue	Continue
0604647 F58 Non-Line of Sight Cannon (NLOS-TCV)	0	476736	107587	262492	273226	140428	139569	72325	Continue	Continue
0604645 F59 Common Components	27500	0	0	0	0	0	0	0	0	27500
0604645 F60 Family of Systems Anal & Int	165302	0	0	0	0	0	0	0	0	165302
0604645 F62 Mission Equipment Platforms	132537	0	0	0	0	0	0	0	0	132537
0604645 F63 Network Software	111745	0	0	0	0	0	0	0	0	111745
0604645 F64 Other Contract Costs	313536	0	0	0	0	0	0	0	0	313536
0604645 F65 S of S Engr & Prog Mgt	190331	0	0	0	0	0	0	0	0	190331
0604645 F66 S of s Test of Evaluation	56347	0	0	0	0	0	0	0	0	56347
0604645 F67 Supportability	5252	0	0	0	0	0	0	0	0	5252
0604645 F69 Training	7756	0	0	0	0	0	0	0	0	7756
0604645 F70 NLOS Launch System	49502	0	0	0	0	0	0	0	0	49502

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D. Acquisition Strategy: During the FY06-11 POM process, the Army restructured the PM UA Acquisition Program. The Army announced this restructured plan which strengthen the FCS Program and simultaneously improve the Current Force through early delivery of selected FCS capabilities. The adjustments maintain the Army focus on FCS-equipped UA development and substantially reduce program risk. The adjustments to the FCS Program acquisition strategy fall into four primary categories:

- o The development priority in descending order will be the 1) Network, 2) Unattended Munitions, 3) Unmanned systems, and finally 4) Manned Ground Vehicles (MGV). Consequently the MGV development duration will be extended. However, Non Line-of-Sight-Cannon (NLOS-C) will lead MGV development and deliver prototype NLOS-C systems in 2008 and deliver Block 0 NLOS-C prototypes in 2010.
- o The five previously deferred FCS core systems: 1) UAV Class II, 2) UAV III, 3) Armed Robotic Vehicle (ARV) –Assault, 4) ARV-Reconnaissance and 5) FCS Maintenance and Recovery Vehicle will be funded and fielded with the first FCS-equipped UA, allowing UA fielding of the complete 18 + 1 FCS core systems to begin delivery to the Army in 2014.
- o More robust experimentation and evaluation are included in the program to prove revolutionary concepts, mature the architecture and components, and assist in spiral development.
- o A series of Spiral Out packages will begin in 2008 and continue every two years through 2014 to insert FCS capability into Current Force Modular Brigade Combat Teams (M-BCTs) to include Stryker, Heavy, and Infantry.

The current OTA was modified on 6 Aug 2004 to cover the new Scope of Work (SOW) of the approved POM program. The definitization of the modification is scheduled for February 2005. The PM will be submitting reprogramming request for the FY05 to reflect the above definitization of the modification to the OTA. While the FY06 and beyond reflect the adjusted Army Cost Position (FY06-11 POM approved program), the funding profile for these years may be adjusted upon completion of contract definitization and development of contract/program budget baseline that supports the above program restructure.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . NON-LINE OF SIGHT CANNON (NLOS-C)	OTA	THE BOEING COMPANY, SEATTLE, WASHINGTON - SEE REMARK 1	251344	84405	1-3Q	107587	1-3Q	262492	1-3Q	Continue	705828	0
b . COMMON HARDWARE & SOFTWARE	OTA	THE BOEING COMPANY, SEATTLE, WASHINGTON - SEE REMARK 1	0	383050	1-3Q	0		0		Continue	383050	0
Subtotal:			251344	467455		107587		262492		Continue	1088878	0

Remarks: Remark 1 - Subcontractor: United Defense Limited Partnership - Minneapolis, MN

FY05 estimates are based on the LSI EVM budget baseline.

FY06 and beyond reflect the adjusted Army Cost Position (POM approved program). These projects will be adjusted on completion of contract definitization and development of a contract budget baseline.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: * All Support Costs are included in PE 0604645A, Project F61, Government Support Costs.

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TEST & EVALUATION	ALLOT	PM FCS-UA - ST. LOUIS, MO	0	9281	1-3Q	0		0		Continue	9281	0
Subtotal:			0	9281		0		0		Continue	9281	0

Remarks: * All Government System Test & Evaluation are included in PE 0604645A, Project F61, Government Support Costs.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . *			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

Remarks: * All Management Services costs are included in PE 0604645A, Project F61, Government Support Costs.

Project Total Cost:			251344	476736		107587		262492		Continue	1098159	0
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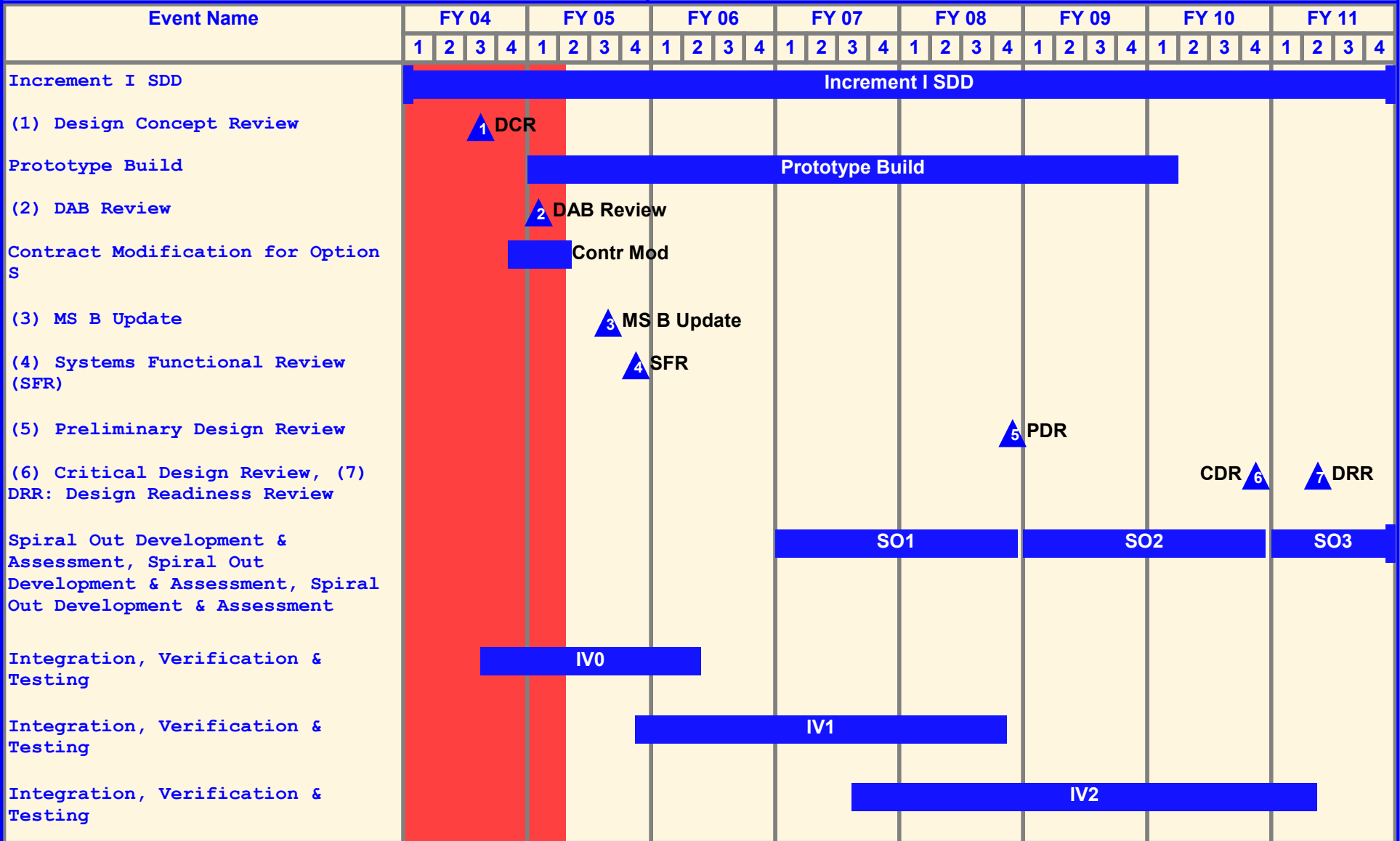
Schedule Profile (R4 Exhibit)

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Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
ADM RequiredMS B Update		3Q						
Definitization of Contract Modification for POM-adjusted Program		2Q						
SoS Functional Review (FR)		4Q						
SoS Preliminary Design Review (PDR)					4Q			
Phase 1 Integration at Test Completion		4Q						
Phase 2 Integration at Test Completion				3Q				
SoS Critical Design Review (CDR)							4Q	
Phase 3 Integration at Test Completion					2Q			
Design Ready Review								2Q

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	37452	26119	26449	38224	51748	28577	23231	22619	0	278815
L67 SOLDIER NIGHT VISION DEVICES	9964	11658	12864	16815	19362	10186	10179	10173	0	107025
L69 HTI 2D GEN FLIR ED	1623	0	0	0	0	0	0	0	0	0
L70 NIGHT VISION DEV ED	9975	12362	13585	16830	13643	10242	13052	12446	0	108278
L75 PROFILER	3953	0	0	0	0	0	0	0	0	10432
L76 LONG RANGE ADVANCED SCOUT SURVEILLANCE SYSTEM - FS	11937	2099	0	4579	18743	8149	0	0	0	53080

A. Mission Description and Budget Item Justification: This program element provides night vision/reconnaissance, surveillance and target acquisition technologies required for U. S. defense forces to engage enemy forces twenty-four hours a day under conditions of degraded visibility due to darkness, adverse weather, battlefield obscurants, foliage and man-made structures. These developments and improvements to high performance night vision electro-optics, radar, laser, and thermal systems and integration of related multi-sensor suites will enable near to long range target acquisition, identification and engagement to include significant fratricide reduction, which will improve battlefield command and control in "around-the-clock" combat operations. Project L67 focuses on night vision electro-optical, laser, and other target identification and location equipment for a variety of Future Combat System of Systems (FCS) Units of Action/Employment and Future Force soldiers. This project includes the enhanced night vision goggle, modular HTI multi-function laser activities, and thermal upgrades to include an uncooled medium thermal weapon sight. Project L69 focuses on inserting key Horizontal Technology Integration Second Generation and beyond Forward Looking Infrared (FLIR) (HTI SGF) thermal sensor technology into combat and support forces. Project L70 focuses on night vision, reconnaissance, surveillance and target acquisition (RSTA) sensors and suites of sensors to provide well-defined surveillance and targeting capabilities for a variety of Future Combat System of Systems (FCS) Units of Action/Employment and Future Force platforms. This project includes night vision sensor acquisition support of FCS core systems, Risk Reduction Demonstration of standard uncooled thermal sensor packages, Sense Through The Wall programs, Unattended Ground Sensor systems and common sensor message set management for FCS and other applications. The project also supports upgrades to existing ground surveillance radars and preparation for production of lightweight countermortar radars. Project L75 focuses on the development of Profiler, an upgrade to the capabilities of the current AN/TMQ-41 Meteorological Measuring Set. Profiler will employ remote and local sensing of the atmosphere, mesoscale modeling and enhanced computing capabilities to provide more accurate meteorological data and for the first time accurate target area meteorological data. These enhancements and new capabilities will increase the lethality of field artillery systems such as Multiple Launched Rocket System (MLRS) and towed and self-propelled cannons. Project DL76 focuses on the addition of a Laser Designation Module (LDM) to the LRAS3 that will increase the operational capability and survivability of Combat Observation Lasing (COLT) and Fire Support (FIST) teams. The resulting target acquisition common sensor will yield greater lethality from precision and area munitions through precise target location and designation. Upgrades developed under this project will be inserted through ongoing production contracts.

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BUDGET ACTIVITY
5 - System Development and Demonstration

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<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	24693	33561	34951
Current Budget (FY 2006/2007 PB)	26119	26449	38224
Total Adjustments	1426	-7112	3273
Net of Program/Database Changes			
Congressional Program Reductions			
Congressional Rescissions	-728		
Congressional Increases	2550		
Reprogrammings			
SBIR/STTR Transfer	-396		
Adjustments to Budget Years		-7112	3273

FY 2005 Congressional increase of \$2.55M for Multiplatform Replacement Sight (MRS).

FY2006/2007 funds were realigned funds to/for HQDA higher priority efforts.

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L67 SOLDIER NIGHT VISION DEVICES	9964	11658	12864	16815	19362	10186	10179	10173	0	107025

A. Mission Description and Budget Item Justification: This project develops, improves and miniaturizes high performance night vision electro-optics, thermal and laser systems. It also provides for systems integration of related multi-sensors suites to enable near to long-range target acquisition and engagement as well as improved battlefield command and control in “around-the-clock” combat operations. It focuses on technology that can bring an immediate improvement to the dismounted Soldiers’ equipment. This project develops or enhances equipment that provides the individual Soldier day/night situational awareness and individual targeting capability. DL67 provides development money to integrate improved target location and self-location capability to eliminate friendly fire incidents. The Enhanced Night Vision Goggle (ENVG) will be a head/helmet mounted night vision system for the individual Soldier. The system will use both image intensifier and uncooled thermal technology to provide a multi-spectral image to the Soldier. Other efforts include a miniaturized laser designating system for a variety of ground Soldier systems, small Unmanned Aerial Vehicle (UAV), and other air platforms and the development of Sense Through The Wall (STTW) technology giving Soldiers the ability to detect threats through walls during Military Operations on Urban Terrain (MOUT).

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Continue development of next generation optical Enhanced Night Vision Goggles (ENVG) and in FY06 initiate development of digital ENVG. The ENVG will provide Soldiers the ability to use both image intensifier and uncooled thermal technologies during day, night, and obscured battlefield conditions.	4365	7622	7592	5053
Complete development of the Small Tactical Optical Rifle Mounted (STORM) micro-Laser Range Finder (mLRF), which will provide Soldiers the ability to perform target location while using individual weapons.	1282	1997	0	0
Complete Thermal Upgrade activities (prototype test and evaluation), which enhanced the combat effectiveness of Thermal Weapon Sight (TWS) Heavy/Medium/Light systems.	914	300	0	0
Completed the development of TALON (Target Acquisition Laser Observation Night) prototypes, yielding a hand held laser target locator with integrated thermal imager.	1821	0	0	0
Continue to improve target location error and begin development of a non-magnetic compass for the Lightweight Laser Designation Rangefinder (LLDR) and an ultra lightweight designator(ULD) to reduce size and weight of the current laser designator module (LDM).	1582	1539	2943	3213
Initiate development of the Dismounted Optics, which will yield a miniature laser target locator with thermal capabilities and improved target location error for the individual Soldier.	0	0	0	2713

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Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007
Initiate development of Sense Through The Wall technology (STTW), which provides dismounted Soldiers with the capability to detect, located and identify threats through walls during Military Operations on Urban Terrain (MOUT).	0	0	711	2112
Accelerate the development of the Fused Multi-Spectral Weapon Sight (FMWS), which is a passive fused electro-optical sight for Special Operations Forces.	0	0	718	2112
Initiate the development, testing and evaluation of Focal Plane Arrays (FPA) with improved sensitivity and range.	0	0	400	1112
Initiate the development and evaluation of day color camera as a replacement for direct view optics in handheld targeting devices.	0	200	0	0
Initiate the development of anti-sniper capabilities.	0	0	500	500
Totals	9964	11658	12864	16815

B. Other Program Funding Summary

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
AN/PVS-7 Aid (K36400) OPA2	82673	76906	76886	101494	171303	153782	117766	61460	Continuing	Continuing
Thermal Weapon Sight (TWS) (K22900) OPA2	177385	53712	83692	92349	103922	72778	61678	61743	Continuing	Continuing
Lightweight Laser Designator Rangefinder (LLDR) (K31100) OPA2	11778	12092	12720	20325	34070	38897	56568	56628	Continuing	Continuing
Infrared Aiming Light (K35000) OPA2	8568	12518	14634	14612	19890	4549	6168	6174	Continuing	Continuing
AN/PVS-6 MELIOS (B53800) OPA2	116946	0	42882	4480	0	0	0	0	Continuing	Continuing

C. Acquisition Strategy: The various developmental programs in this project will continue to exercise competitively awarded contracts using best value source selection procedures.

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0604710A - Night Vision Systems - Eng Dev

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Enhanced NVG Analysis and Design	C/FP	Various	4507	5459	1-2Q	5767	2Q	4290	1-2Q	Continue	20023	0
b . STORM micro-Laser Range Finder Activity	C/FP	DRS - Torrence, CA / Insight Technologies - Londonderry, NH	615	1043	1-2Q	0		0		0	1658	0
c . Thermal Upgrades for TWS	C/FP	DRS/Nytech - Santa Ana, CA / BAE - Lexington, MA	695	300	1Q	0		0		Continue	995	0
d . Light Forward Observers Optics Activity	C/FP	Performance Learning (GSA) Alexandria, VA	130	0		0		0		Continue	130	0
e . Focal Plane Arrays Activity	C/FP	Various	1500	0		400	1-2Q	500	1-2Q	Continue	2400	0
f . Laser Target Locator Activity	C/FP	Northrop Grumman-Litton - Apopka, FL	2014	0		0		1600	1-2Q	Continue	3614	0
g . Ultra Lightweight Designator Development Activity	C/FP	Fibertek - Herndon, VA	1582	1469	1Q	1950	1-2Q	1600	1-2Q	Continue	6601	0
h . Sense Through The Wall (STTW) Activity	C/FP	TBD	0	0		570	1-2Q	1101	1-2Q	Continue	1671	0
i . Fused Electro-Optical Weapon Sight Development	C/FP	TBD	0	0		476	1-2Q	1088	1-2Q	Continue	1564	0

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . Image Intensification Sensors Development	C/FP	Intevac - Santa Clara, CA	485	0		0		0		0	485	0
k . Anti-Sniper Capabilities Development	C/FP	TBD	0	0		400	1-2Q	500		Continue	900	0
Subtotal:			11528	8271		9563		10679		Continue	40041	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	Various	230	149	2Q	626	1-2Q	439	1-2Q	Continue	1444	0
Subtotal:			230	149		626		439		Continue	1444	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Government Test Support Activity	MIPR	Various	3754	2827	1Q	2450	1-2Q	5461	1-2Q	Continue	14492	0
Subtotal:			3754	2827		2450		5461		Continue	14492	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management	MIPR	PM Sensors and Lasers	276	411	1-4Q	225	1-2Q	236	1-2Q	Continue	1148	0
Subtotal:			276	411		225		236		Continue	1148	0

Project Total Cost:			15788	11658		12864		16815		Continue	57125	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L67

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ENVG (Optical) LRIP Award/Delivery, ENVG DT/OT	██████████																															
(1) ENVG (Optical) MS C					▲1																											
ENVG (Digital) Hardware Development & Evaluation	██████████				██████████				██████████				██████████																			
(2) ENVG (Optical) IOC									▲2																							
ENVG (Digital) SDD / LRIP													██████████				██████████				██████████				██████████							
STORM DT/OT	██████████																															
(3) STORM MS C					▲3																											
(4) Dismounted Optics MS B									▲4																							
Dismounted Optics SDD													██████████				██████████				██████████				██████████							
(5) Dismounted Optics MS C																									▲5							
TWS II Development and Testing	██████████				██████████																											
(6) Fused Multi-Spectral Weapon Sight (FMWS) MS B / SDD									▲6																							
Sense Through The Wall (STTW) MS B / SDD													██████████				██████████				██████████				██████████							
ULD Prototype Dev / Syst Integration / TLE Improvements													██████████				██████████				██████████				██████████							

Schedule Detail (R4a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0604710A - Night Vision Systems - Eng Dev

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Enhanced Night Vision Goggles (ENVG) Optical Development.	1-4Q	1-4Q	1-3Q	1-4Q	1-4Q			
ENVG Digital System Development and Demonstration / LRIP				2-4Q	1-4Q	1-4Q	1-4Q	1-2Q
Development of the Small Tactical Optical Ranging Module (STORM).	1-4Q	1-3Q						
Thermal Upgrade target location display capability demonstration and TWS II Testing.	2-3Q	1-4Q						
Target Aquisition and Laser Designators Development and Testing Acitivities.			3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1Q
Fused Multi-Spectral Weapon Sight (FMWS)			3-4Q	1-4Q				
Sense Through The Wall (STTW) Technology			3-4Q	1-4Q	1-4Q			
Ultra High Resolution Night Designator Prototype Development and Integration.	1-3Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

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February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L70

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L70 NIGHT VISION DEV ED	9975	12362	13585	16830	13643	10242	13052	12446	0	108278

A. Mission Description and Budget Item Justification: This project performs System Development and Demonstration (SDD) on high performance night vision, reconnaissance, surveillance, and target acquisition (RSTA) systems and other related systems that allow forces to locate and track enemy units in day, night, and all battlefield conditions, and through natural and man-made structures and obscurants. It also develops and integrates suites of these sensors to provide well-defined surveillance and targeting capabilities, as well as architectures for these sensors to communicate automatically. The focus is on meeting the requisite night vision and RSTA capabilities required for evolving Future Combat System-of-Systems (FCS), and Future Force Unit of Action/Unit of Employment systems. Efforts will continue to refine a standard architecture among sensors with the Sensor Link Protocol (evolving to a joint message set called Sensor Data Link) to allow these sensors to communicate in a plug and play manner for improved force level sensor data fusion, aided target recognition and target hand-off.

This project will also demonstrate the producibility of interchangeable uncooled thermal focal plane arrays, and develop an uncooled infrared imaging B-Kit sensor family that will result in standardized sensor modules for a variety of applications. By eliminating the requirement for cryogenic coolers, uncooled thermal imagers are inherently smaller, lighter, more reliable, use less power, and are less expensive. Uncooled B-Kits can be used for a variety of FCS and Future Force systems such as weapon sights, driver's viewers/situational awareness aids, missile seeker sensors, unattended ground sensors/security sensors, and unmanned ground and aerial vehicle payloads.

This project develops, demonstrates and tests Sense Through the Wall (STTW) technology in support of Future Combat System. This will leverage earlier technology base efforts for an Unmanned and Limited Stand-Off capability of detecting personnel and weapons through a wall.

This project continues Unattended Ground Sensors (UGS) hardware development, demonstration and test for a family of UGS systems for Intelligence, Surveillance and Reconnaissance (ISR). This will provide FCS and the Army an Unattended Ground Sensor capability for ISR and physical security.

This project transitions Cost Effective Targeting System (CETS) from an ATD under NVESD. CETS provides long range target identification without the expense of a high performance thermal imager. Using an uncooled long wave IR thermal imager for search and target detection, an eyesafe laser illuminates the target for a short wave IR gated camera to capture a "picture" which can be displayed or processed by an ATR. CETS can be applied to Unmanned Ground Vehicles, manned vehicles and dismounted systems.

FY2006/2007 funding supports: continuation of Uncooled B-kit, Unattended Ground Sensor and UAV EOIR/LD Payloads developments; transitions STTW technology and a UGV Imaging payload (CETS) to SDD; and spirals in RSTA technologies from FCS into the current force, and maintenance of Sensor Link Protocol.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue Sensor Link Protocol (SLP) as part of the DoD Joint Variable Message Format (JVMF) standard while maintaining configuration management and modifying application software tools. Sensor Link Protocol (SLP)/Sensor Architecture – A uniform and standard means of describing and coordinating the collection, preprocessing, communication, and fusion of RSTA functions for the Future Force and FCS. Two man-year effort in FY04/05 will complete initial JVMF acceptance and provide SLP maintenance.	340	435	340	340
Continue development of the uncooled thermal B-Kit for platform sensors, navigation systems and target acquisition devices. Uncooled B-Kit – Development of a standard uncooled thermal detector B-kit to extend night vision capability across many platforms with interchangeable parts, lower cost, power, weight and volume. This effort is the risk reduction demonstration for B-Kit development on FCS and Future Force Systems.	1524	3087	3553	2396
Unattended Ground Sensors (UGS) – Develop ISR, CBRN and Urban UGS for FCS and other Army customers. Funds continuing spiral technology integration efforts.	2495	1250	2085	1930
Cooled IR Integrated Sensor Suites (CIRISS). Provide System Development and Demonstration acquisition and technical support to PM FCS on primary night vision, reconnaissance, surveillance, and target acquisition sensor suites. FY06 and FY07 support the "Spiral-Out" of RSTA capabilities from FCS to improve Current Force capabilities.	1351	0	1944	1422
Development of payloads for the Army's Unmanned Air Vehicle (UAV) in accordance with TRADOC priorities and in support of Future Combat System (FCS).	1941	3996	2927	1978
Lightweight Counter Mortar Radar (LCMR) - support preparation for MS decision	212	0	0	0
Ground Moving Target Indicator (GMTI) Radar - complete productization and testing of improved performance radar. Improvements include reduced size and weight, material updates, and operational mode expansion.	2112	754	0	0
Sense Thru The Wall (STTW) Stand-Off/Unmanned - Transition STTW technology from D131, applying it to Unmanned Vehicle applications to provide a Stand-off Sense-Through-The-Wall capability.	0	366	683	3886
Unattended Ground Vehicle Payloads (CETS) Transition the Cost Effective Targeting System (CETS) from the NVESD Advanced Technology Demonstration, applying it to Unmanned Ground Vehicle payload requirements.	0	0	2053	4878
Multi Platform Replacement Sight (MRS)	0	2474	0	0
Totals	9975	12362	13585	16830

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Night Vision DVE K31300 OPA2	9720	8361	19996	24703	33031	25721	0	0	0	121532
Future Combat System, G86100 WTCV	0	225289	829206	1638022	3562240	2918987	989250	3169577	Continuing	Continuing
Advanced TUAV Payloads B00302 OPA2	0	0	0	35226	37852	19662	25000	33000	Continuing	Continuing

C. Acquisition Strategy: The development programs in this project are currently based on competitive awards and under cost reimbursement type contracts.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DVE Development	C/CPIF	Various	21831	0		0		0		0	21831	21831
b . Modular HTI Multifunction Laser Activities	C/CP	Insight Technologies, Londonderry, NH & DRS Technologies, Torrence, CA	3868	0		0		0		0	3868	3868
c . LLDR RAPT	C/CP	Various	4253	0		0		0		0	4253	4253
d . Light Forward Observer Optics	C/CP	Various	1258	0		0		0		0	1258	1258
e . Thermal Upgrades for DVE (Dual wavelength) and competition	C/CP	Kaiser Electric San Diego, CA, Various	3608	0		0		0		0	3608	3608
f . LLDR Advanced Demonstration System	C/CP	Litton Laser, Apopka, FL	2556	0		0		0		0	2556	2556
g . Sensor Architecture/Digital RSTA/SLP	C/CPIF & C/CP	Various	10753	340	1Q	335	1Q	340	1Q	Continue	11768	Continue
h . Various Prototypes and Studies	C/CPIF	Various	2947	0		0		0		0	2947	2947
i . Thermal Upgrades for TWS (target location)	C/CP	Raytheon, El Segundo, CA, Various	5811	0		0		0		0	5811	5811

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . HTI Laser Trade Studies	C/CP	Various	1020	0		0		0		0	1020	1020
k . Enhanced NVG Analysis & Design (TX to DL67)	C/CP	Various	4782	0		0		0		Continue	Continue	Continue
l . HTI Laser MFS3 design and prototype activities	C/CPIF	Raytheon, Dallas, TX	565	0		0		0		0	565	565
m . MANTECH Focal Plane Array and optics	C/CP	Raytheon, Dallas, TX	1500	0		0		0		0	1500	1500
n . Digital MELIOS Design & Fabrication	C/FP	Litton Lasers, Inc.	1000	0		0		0		0	1000	1000
o . SBIR/STTR			0	366		0		0		0	366	266
p . AN/TMQ-41 Trade Studies and related activities	C/CP	Various	1232	0		0		0		0	1232	1232
q . Image Fusion for DVE	C/CP	Raytheon, Dallas, TX	1274	0		0		0		0	1274	1274
r . Digital RSTA SDD	C/CP	Booz-Allen Hamilton, Tysons Conner, VA	2190	0		0		0		0	2190	2190
s . CIRISS Efforts	C/CP	Various	1500	0		1689	2Q	873	1Q	0	4062	1500

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
t . LLDR Vehicle applications	C/CP	Litton Laser, Apopka, FL Various	3487	0		0		0		0	3487	3487
u . FLIR develop/integrate	Various	Various	1731	0		0		0		0	1731	1731
v . Uncooled B-Kit	Various	Various	1555	3087	2-3Q	2345		1544	1Q	Continue	8531	Continue
w . EO/IR/LD UAV Payloads	C/CP	TBS	1783	3693	1Q	2397	1Q	1562	1Q	Continue	9435	Continue
x . LLDR EMD	C/CP	Litton Lasers, Apopka, FL	19873	0		0		0		0	19873	19873
y . GMTI Radar	C/FP & CP	General Atomics	1712	750	2-3Q	0		0		0	2462	1712
z . UGS	CP/FFP	Various	708	0		0		0		0	708	708
aa. FCS UGS / UGS Spiral	C/CP	FCS Boeing/Textron	3375	0		1536	2Q	1288	2Q	Continue	6199	Continue
bb. STTW Stand-Off/Unmanned	C/CP	TBS	0	0		468	3Q	3446	1Q	Continue	3914	0
cc. UGV Payloads (CETS)	C/CP	TBS	0	0		1671	2Q	4207	1-4Q	Continue	5878	0
dd. MRS Efforts			0	2474	2-3Q	0		0		0	2474	0
Subtotal:			106172	10710		10441		13260		Continue	Continue	Continue

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	Various	14341	1007	1Q	1927	1Q	1873	1Q	Continue	19148	Continue
Subtotal:			14341	1007		1927		1873		Continue	19148	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DT/IOT&E*	MIPR	ATEC	8769	0		0		0		0	8769	8769
b . Other Test Support*	MIPR	Various	4366	350	2Q	692	3Q	1223	2Q	Continue	6631	Continue
Subtotal:			13135	350		692		1223		Continue	15400	Continue

Remarks: * Includes TWS, DVE, LLDR and other sensor test and evaluation activities

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management	In house support	PM, NV/RSTA, Fort Belvoir, VA & Ft. Monmouth, NJ	4628	295	1-4Q	525	1-4Q	474	1-4Q	Continue	5922	Continue
Subtotal:			4628	295		525		474		Continue	5922	Continue
Project Total Cost:			138276	12362		13585		16830		Continue	Continue	Continue

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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PROJECT
L70

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) SLP Sensor Architecture JVWF Standard					▲ 1																											
(2) Close Surveillance Support System MS B									▲ 2																							
(3) STTW Unmanned/Stand- Off MS B													▲ 3																			
(4) Uncooled B Kit Ph I MS C													▲ 4																			
(5) Foliage Penetration MS B																	▲ 5															
(6) STTW Unmanned/Stand-Off MS C																					▲ 6											
(7) Uncooled B Kit Phase II MS C																									▲ 7							

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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PROJECT
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<u>Schedule Detail</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
Sensor Link Protocol (SLP) Architecture - JV MF		2Q						
Starboard B-Kit MS B	2Q							
Uncooled B-Kit SDD Phase I		2-4Q	1-4Q					
Uncooled B-Kit MS C			4Q					
Uncooled B-Kit SDD Phase II				2-4Q	1-4Q	1-4Q		
Uncooled B-Kit MS C							1Q	
Foliage Penetration (FOPEN) MS B for FCS Block II					2Q			
FOPEN SDD					2-4Q	1-4Q		
Close Surveillance Support System MS B			2Q					
Close Surveillance Support System SDD			2-4Q	1-2Q				
Sense Through the Wall (STTW) MS B			4Q					
Sense Through the Wall (STTW) SDD				1-4Q	1-4Q	1-4Q		
Sense Through the Wall (STTW) MS C						4Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
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PROJECT
L75

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L75 PROFILER	3953	0	0	0	0	0	0	0	0	10432

A. Mission Description and Budget Item Justification: The AN/TMQ-52 Meteorological Measuring Set-Profiler (MMS-P) is a replacement for the current Meteorological Measuring Set (MMS), AN/TMQ-41. Profiler uses a suite of meteorological (MET) sensors and MET data from communication satellites along with an advanced weather model to provide highly accurate met data out to a range of 500km. Currently, MMS data regardless of its' staleness is considered accurate only to 20km from balloon launch site and cannot provide target area MET data. Profiler provides all weather conditions affecting munitions including information on wind speed, wind direction, temperature, pressure, relative humidity, rate of precipitation, visibility, and cloud ceiling height needed for precision targeting and terminal guidance. By providing more accurate MET messages, Profiler will enable the artillery to have a greater probability of a first round hit with indirect fire systems than is achievable with the current MMS. The new capabilities will increase the lethality of field artillery systems such as Multiple Launch Rocket Systems, towed and self-propelled cannons. This effort will increase the accuracy of a wide range of deep fire weapons and munitions.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Performed Software Qualification Testing. Conducted successful Milestone C Decision Review. Completed MMS-P SDD development effort, including software and hardware integration, and fabrication of four units for contractor testing.	1811	0	0	0
Completed System Functional Demonstration.	0	0	0	0
Conduct Developmental Test (DT) for system meteorological accuracy.	570	0	0	0
Conduct Initial Operational Test & Evaluation (IOT&E) activities.	1500	0	0	0
Undistributed Congressional Adjustments	72	0	0	0
Totals	3953	0	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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PROJECT
L75

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Profiler K27900	12054	7412	4869	1639	0	0	0	0	0	25974
MMS-P AD3255	617	452	334	403	0	0	0	0	0	1806

C. Acquisition Strategy: The Profiler program awarded a competitive Cost Plus Incentive Fee (CPIF) contract in Sep 00 to Smiths Detection (formerly ETG) for the development of four System Development and Demonstration (SDD) units. The contract included Firm Fixed Price production options. A Milestone C approval for LRIP was granted in May 03. Upon successful Reliability testing, an additional LRIP award was made in Jan 04. The Full Rate Production decision is scheduled for 1QFY05.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
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L76

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L76 LONG RANGE ADVANCED SCOUT SURVEILLANCE SYSTEM - FS	11937	2099	0	4579	18743	8149	0	0	0	53080

A. Mission Description and Budget Item Justification: The Army's mounted Fire Support and Combat Observation Lasing Teams (COLT) require a day/night targeting sensor that can detect, observe, and pinpoint the locations of threats for attack. The sensor must be able to determine the precise target location of the target and digitally transfer this information, or laser designate the target for precision engagement by laser-guided munitions.

This target acquisition common sensor system will combine the long-range surveillance and targeting capabilities of the Army's Long Range Advanced Scout Surveillance System (LRAS3) with the laser designation capabilities of the Lightweight Laser Designator Rangefinder's Laser Designation Module (LDM). RDT&E funding is required to integrate the physical, electronic and data interfaces of the LRAS3 and LDM, as well as to integrate the system to the physical, electronic and data interfaces of the Stryker Brigade Combat Team (SBCT) Fire Support Vehicle's and Knight's M707 Mission Equipment Package. In addition to the design activities, sufficient prototype systems will be produced to support testing and other pre-production activities. The system significantly increases the observation and target engagement capabilities over that provided by the current first generation equipment, AN/TAS-4 Night Sight and Ground/Vehicular Laser Locator Designator (G/VLLD).

FY2007 begins P3I on laser designator integration, under armor/remote mast mounting of sensor and 3rd Gen FLIR integration.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Design the modifications necessary to integrate the LDM with the LRAS3.	2116	0	0	0
Fabricate eight prototype sensors, using borrowed GFE.	708	0	0	0
Conduct contractor prototype qualifications.	274	0	0	0
Conduct system/platform Integration and Test (I&T).	1107	0	0	0
Conduct Government Development Test and User Excursion.	75	0	0	0
Perform Logistics Support and Logistics Demonstration.	496	0	0	0
Conduct Qualification Validation Test and implement corrective actions.	325	842	0	0
Design A-Kit for Multi-Platform Replacement Sight (MRS).	2819	0	0	0
Fabricate 8 prototypes of A-Kit and B-Kit for MRS	1727	0	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
Integrate and Test MRS prototypes	859	0	0	0
MRS Vehicle Integration	574	60	0	0
Government Vehicle Testing for MRS.	857	1197	0	0
Design Laser Designator function into LRAS3 Housing	0	0	0	2620
Fabricate 4 prototypes	0	0	0	1959
Totals	11937	2099	0	4579

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
LRAS3 K38300 OPA2	50470	48155	42293	1777	0	0	0	0	0	142695

C. Acquisition Strategy: The development of the Fire Support Sensor System has been executed through a Cost Plus Fixed Fee (CPFF) modification to the LRAS3 Fixed Price production contract. The development effort will lead to a production implementation through an Engineering Change Proposal (ECP) and Fixed Price adjustments. This ECP will then be applied to the LRAS3, M707 Knight, and Stryker BCT (FSV) programs.

ARMY RDT&E COST ANALYSIS(R3)

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . FS3 Development	SS/T&M	Raytheon Inc., McKinney TX	2346	0		0		0		0	2346	2346
b . FS3 Development	SS/CPFF	Raytheon Inc., McKinney, TX	7380	0		0		0		0	7380	5478
c . FS3 Development	SS/FFP	Raytheon, Inc., McKinney, TX	1312	742	1Q	0		0		0	2054	3198
d . SBIR/STTR			0	60		0		0		0	60	0
e . Multi-Platform Replacement Sight (MRS)	SS/CPFF	Penn State Univ EOC, PA	6028	564	3Q	0		0		0	6592	0
f . LRAS3 Laser Designator Integration	C/CPFF	TBD	0	0		0		3848	2Q	26400	30248	0
Subtotal:			17066	1366		0		3848		26400	48680	11022

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	NVESD, CECOM, Other	1083	125	1Q	0		281	1Q	0	1489	0
Subtotal:			1083	125		0		281		0	1489	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Planning and Preparation	MIPR	ATEC	50	0		0		0		0	50	0
b . Government Development and Operational Tests	MIPR	ATEC	165	0		0		0		0	165	0
c . Government Developmental Test for MRS	MIPR	RTTC	0	408		0		0		0	408	0
Subtotal:			215	408		0		0		0	623	0

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management	In House	PM NV/RSTA, Fort Belvoir VA	1755	200	1Q	0		450	1Q	492	2897	0
Subtotal:			1755	200		0		450		492	2897	0

Project Total Cost:			20119	2099		0		4579		26892	53689	11022
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Government DT	■																															
ECP Cut In			■	■																												
Fielding - Knight			■	■																												
(1) MRS Contract Award								▲																								
Fielding - 4-SBCT								■																								
1-SBCT												■																				
2-SBCT																■																
3-SBCT																				■												
Preliminary Design Review - Laser Designator																																
Critical Design Review - Laser Designator																																

Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Validation testing and implement corrective actions	4Q	1-4Q						
Fielding - 4th SBCT		3Q						
MRS Prototype Fabrication Activities		1-2Q						
Vehicle Integration of MRS		3-4Q						
MRS Government Vehicle Testing		3-4Q						
Design Activities for LRAS3 Laser Designator				1-3Q				
Laser Designator Product Development				2-4Q	1-4Q	1-3Q		
Government Qualification Testing						3-4Q		
Laser Designator ECP cut in						4Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604713A - Combat Feeding, Clothing, and Equipment

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	95484	98445	3383	2952	2464	2461	2099	2142	0	290419
548 MIL SUBSISTENCE SYS	1895	1946	3383	2952	2464	2461	2099	2142	0	21053
667 LAND WARRIOR	78183	72974	0	0	0	0	0	0	0	205106
668 SOLDIER ENHANCE PGM	9686	15175	0	0	0	0	0	0	0	34796
680 MOUNTED WARRIOR	0	2685	0	0	0	0	0	0	0	2685
C40 SOLDIER SUPPORT EQUIPMENT - ED	2760	549	0	0	0	0	0	0	0	14312
L40 CLOTHING & EQUIPMENT	2960	5116	0	0	0	0	0	0	0	12467

A. Mission Description and Budget Item Justification: This program element (PE) supports System Development and Demonstration (SDD) and Non-Developmental Item (NDI) evaluation of unit/organizational equipment, clothing, individual equipment, field shelters, field service equipment, subsistence, and food service equipment that will enhance soldier efficiency, effectiveness, lethality, sustainability and survivability. The system integration of demonstrated subsystems, components, or NDI in order to reduce integration risks associated with system development and demonstration of various commodities, components, and technologies are also included in this PE. The program element also supports demonstration of engineered development models and the associated developmental and operational testing of systems, components, and commodities prior to their transition to the Production and Deployment phase to include a new generation of field service support items of soldier equipment. The Land Warrior program will produce the first fully integrated fighting system for dismounted combat soldiers. The Soldier Enhancement Program supports soldier items that will transition into production in three years or less. In FY06, Projects 668,C40, L40 transition to a new Program Element, 0604601A. Projects D667,D680 transition to Program Element, 0604827.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	115093	130455	143786
Current Budget (FY 2006/2007 PB)	98445	3383	2952
Total Adjustments	-16648	-127072	-140834
Net of Program/Database Changes			
Congressional Program Reductions	-13842		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-2806		
Adjustments to Budget Years		-127072	-140834

In FY06, Projects D680, D667 have transitioned to PE 0604827A, Soldier Systems-Warrior Development and Projects D668, DC40 and L40 have transitioned to 0604601, Infantry Support Weapons.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
548 MIL SUBSISTENCE SYS	1895	1946	3383	2952	2464	2461	2099	2142	0	21053

A. Mission Description and Budget Item Justification: This project supports the development and demonstration and Non-Developmental Item (NDI)/Commercial Off The Shelf (COTS) evaluation of combat feeding equipment to enhance soldier efficiency and survivability, and to reduce food service logistics requirements for all four services. The project supports multi-fuel, rapidly deployable field food service equipment initiatives and engineering and manufacturing development to improve equipment, enhance safety in food service, and decrease fuel and water requirements. This project develops critical enablers that support the Joint Future Force Capabilities and Joint Expeditionary mindset by maintaining readiness through fielding and integrating new equipment, by enhancing the field soldier's well-being and providing soldier usable equipment, and by reducing sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands on lift, combat zone footprint, and costs for logistical support.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
548

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
FY 04: Prepared evaluation reports on labor saving equipment and food technologies for the Navy ships. Continued evaluation of new shipboard food service equipment such as stainless steel liner in submarine hatchable convection oven to improve galley and installation efficiencies, reduce costs, and improve quality of life. Evaluated and tested 26 various pieces of food service equipment. Down selected 10 for installation on board Navy vessels including ovens, steamers, grills, ice machines, etc. All approved items were listed in the Food Service Equipment catalog. Installed the first Submarine Hatchable Convection oven on board the USS Philadelphia, SSN-690. Installed two (2) Submarine Hatchable Convection Ovens, and an Accutemp 3 foot Grill on board the USS Providence SSN-719 as part of the submarine modernization program. FY 05 - FY 07: Continue effort as Food Service Equipment certifying agent for all Navy Vessels, to test and approve all Food Service Equipment utilized on board Navy vessels prior to fielding. Continue to monitor commercial development in food service to reduce shipboard labor, extend service life and quality of life. Evaluate automated food production equipment for potential applications. Continue with shipboard tests; down select; and list in Food Equipment Catalog.	512	478	1001	814
FY 04: Fabricated and tested oven, and steamer, for Single Pallet Expeditionary Kitchen-A (SPEK-A) all sub-components use the same burner base, to increase efficiency and reduce the logistical footprint. FY 05-FY06: Prepare final designs and conduct technical and user tests. Upgrade SPEK-A Technical Data Package (TDP) for procurement by the Air Force.	125	191	150	0
FY 04: Finalized design and awarded contract for Advanced Design Refrigerator (ADR1200). FY 05: Complete the fabrication of ADR1200. Conduct developmental and operational testing of the ADR1200 which will enhance transportability, thermal efficiency while reducing the external volume; prepare performance specification and transition to the Air Force.	75	143	0	0
FY 04: Fabricated and tested thermostatic control improvements to the Modern Burner Unit (MBU), completed testing of extreme cold weather MBU, and completed a prognostics feasibility study. FY 05: Develop and test integration of thermostatic controlled MBU in field kitchen appliances and field sanitation systems.	297	99	0	0
FY 04: Procured and integrated two complete Assault Kitchen (AK) systems, and conducted in-house testing and a User Demonstration at National Training Center (NTC). FY 05: Complete required AK testing based upon Army Evaluation Center (AEC) assessment of existing data from Marine Corps and conduct logistics demonstration. Prepare Milestone C documentation. FY 06: Conduct Milestone C decision for the AK and prepare technical data to support a production contract.	160	319	90	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT			
5 - System Development and Demonstration	0604713A - Combat Feeding, Clothing, and Equipment	548			
Accomplishments/Planned Program (continued)		FY 2004	FY 2005	FY 2006	FY 2007
FY 04: Completed integration of a prototype of a Load Handling System (LHS) compatible Containerized Kitchen (CK) and provided to users for evaluation. FY 05: Conduct a field evaluation on the LHS compatible CK prototype with the Army Medical Command (MEDCOM). Develop a CK augmentation kit to be used by MEDCOM. FY 06: Conduct cost analysis and design a ventilation system to effectively remove by-products of combustion from open flame burners in the CK. FY 07: Fabricate and test the recommended ventilation system for the CK.		299	215	284	127
FY 04: Completed development of technical data for use in a rebuild program that optimizes the Mobile Kitchen Trailer (MKT) configuration.		117	0	0	0
FY 07: Conduct Developmental and Operational Testing on a co-generator that produces heat for cooking and sanitation as well as electrical energy for the kitchen.		0	0	0	432
FY 04: Completed procedures for tying down Mobile Kitchen Trailer (MKT) roof, completed power supply connector and documentation for Mounted Water Ration Heater (MWRH). Evaluated consistency of non-stick coating strength for sample batch of steam table pans for submarine galleys. Procured special high temperature polymer serving utensils to protect non-stick coated pans and initiated testing. FY 05-FY 07: Continue to develop and evaluate improvements to fielded food service systems as required by services for integration into existing and future systems to reduce operability gaps and improve user acceptance of fielded equipment. Integrate equipment from Navy program into 9-2 Air Force Bare Base kitchen and Marine Corps Tray Ration Heater in order to reduce overall costs.		160	143	905	407
FY 04: Completed technical testing on the Marine Corps 8x8x10 refrigerated ISO box, which will provide enhanced storage, thermal efficiency and corrosion resistance and reduce the logistical footprint. Drafted Performance Specification and transitioned to the Marine Corps for procurement.		150	0	0	0
FY 05-FY 06: Conduct user surveys to determine changes required to update Containerized Deployment Kitchen (CDK), to present standards, in order to develop improved food service efficiency and enhance cooked food quality. Develop enhancement package, upgrade one system, conduct user test, validate package and provide to customer.		0	167	300	0
FY 05: Execute Navy Shipboard Ice Machine program. Select bulk ice machines for shipboard evaluation. Complete test of machines and dispensers. Provide specifications and recommendations to the Navy.		0	191	0	0
FY06: Develop pressurized water delivery system for field feeding sites to support field kitchen and sanitation systems. FY07: Complete testing of pressurized water system and initiate development of a containerized or trailer mounted field food sanitation system.		0	0	110	293
FY07: Conduct Market Survey, procure test items, and initiate field testing of durable nonstick coatings and disposable cookware/cookware liners for field kitchens.		0	0	0	203

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604713A - Combat Feeding, Clothing, and Equipment	PROJECT 548
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Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
FY06: Develop oven and skillet improvements to the Mobile Kitchen Trailer (MKT). FY07: Conduct technical and operational testing of MKT oven and skillet improvements.	0	0	243	320
FY06: Develop mess support system for field feeding site dining areas. FY07: Conduct technical and field evaluation of field messing system.	0	0	300	203
FY07: Award contract for fabrication of changes to the Multi-Ration Heating system to allow use inside the chemically protected DEPMEDS, and initiate field testing.	0	0	0	153
Totals	1895	1946	3383	2952

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0603747.610, Food Adv Dev	3540	3848	3393	2728	3767	3860	4244	4331	Continuing	Continuing
OPA3, M65803, Kitchen, Containerized, Field	6977	8081	6816	8774	9069	8998	10343	9169	Continuing	Continuing
OPA 3, M65802, Sanitation Center, Field Feeding	8362	6021	14731	17125	17622	14862	15832	16294	Continuing	Continuing

C. Acquisition Strategy: Complete System Development and Demonstration of food items and equipment for transition into competitive procurement contract.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various combat feeding eq, multi-fuel and water eq	In-House	RDECOM, NSC	11181	935	1-4Q	1559	1-4Q	1334	1-4Q	Continue	15009	Continue
b . Contracts	Various	Various	2715	345	1-4Q	575	1-4Q	492	1-4Q	Continue	4127	Continue
c . PEO CS&CSS	In-House	PM Force Sustainment System (FSS)	257	204	1-4Q	340	1-4Q	291	1-4Q	Continue	1092	Continue
Subtotal:			14153	1484		2474		2117		Continue	20228	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	MIPR	TECOM/OEC/ATC	4300	348	1-4Q	580	1-4Q	496	1-4Q	Continue	5724	Continue
Subtotal:			4300	348		580		496		Continue	5724	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CFP Management	In-House	RDECOM	1069	114	1-4Q	329	1-4Q	339	1-4Q	Continue	1851	Continue
Subtotal:			1069	114		329		339		Continue	1851	Continue

Project Total Cost:			19522	1946		3383		2952		Continue	27803	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
(1) Complete fabrication of Advance Design Refrigerator 1200 (ADR1200), (2) Complete DT/OT for ADR-1200, (3) Prepare Perf Spec for ADR1200 for transition to AF					▲1	▲2	▲3																											
DT on Marine Corps 8x8x10 Refrigerated Container, DT on Log Demo on Assault Kitchen																																		
Conduct Field Eval for LHS compatible CK, Conduct DT/OT on Field Kitchen Co-generator																																		
(4) MS C on Assault Kitchen																																		
(5) Transition 8x8x10 Performance Specification to Marine Corp, (6) Upgrade SPEC-A TDP and transition documentation to AF, (7) Integrate equipment from Navy to AF Bare Base Kitchen								▲5																										
(8) Transition Advanced AF Equipment and systems to AF, (9)																																		
(10) Transition advanced MC equipment and systems to MC, (11)																																		
(12) Transition advanced Navy equipment and systems to Navy, (13), (14), (15), (16), (17)																																		

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Continue Developmental and Operational Testing for the Advanced Design Refrigerator -1200 (ADR-1200)		3Q						
Prepare performance specification for ADR1200 and transition to Air Force for procurement.		4Q						
Conduct Containerized Kitchen (CK) field evaluation with MEDCOM.		2-3Q						
Conduct Assault Kitchen Developmental Testing and logistics demonstration.		2-4Q						
Conduct Milestone C on Assault Kitchen.			4Q					
Initiated Marine Corps 8x8x10 Refrigerated Container Developmental Test.	1Q							
Completed 8x8x10 Refrigerated Container Developmental Test.	2Q							
Transitioned 8x8x10 Refrigerated Container performance specification to Marine Corp.	4Q							
Upgrade SPEK-A Technical Data Package and transition documentation to AF for procurement.			4Q					
Transition Advanced AF equipment and systems to AF for procurement.							4Q	4Q
Integrate equipment from Navy program to AF Bare Base Kitchen and Marine Corps Tray Ration Heater.				4Q				
Transition Advanced Marine Corps (MC) equipment and systems to MC for procurement.							4Q	4Q
Transition Advanced Navy Equipment and Systems to Navy for procurement.		4Q	4Q	4Q	4Q	4Q	4Q	4Q
Conduct DT and OT on Field Kitchen co-generator.				1-4Q				
Complete fabrication of the ADR1200.		2Q						
Installed Submarine Hatchable Convection Ovens on board the USS Philadelphia and the USS Providence.	4Q							

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604713A - Combat Feeding, Clothing, and Equipment	PROJECT 548
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<u>Schedule Detail (continued)</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Select bulk ice machines for shipboard evaluation. Provide specifications and recommendations to Navy		4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604713A - Combat Feeding, Clothing, and Equipment				PROJECT 667		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
667 LAND WARRIOR	78183	72974	0	0	0	0	0	0	0	205106

A. Mission Description and Budget Item Justification: This project supports the Land Warrior (LW) concept which is a first generation, modular, integrated fighting system focused on the needs of the individual infantry Soldier and Soldiers in support of the close fight. LW combines state-of-the-art commercial-off-the-shelf (COTS) and government-off-the-shelf (GOTS) technologies with newly developed components and technologies to create a lethal, survivable Soldier system linked into the digitized battlefield. LW's objective is to equip the Soldier to improve lethality, survivability, battle command capability and situational awareness on the digital battlefield. LW is in the system development and demonstration phase.

In an effort to comply with Congressional intent and to leverage from the success of current developed LW components, the Army has refocused the LW program to spiral out Dismounted Battle Command System (DBCS) capabilities (e.g. Commander's Digital Assistant (CDA), Enhanced Position Location and Reporting System (EPLRS) MicroLight Radio) to Soldiers in the field for near-term capability. Accelerating components of the Land Warrior System also addresses the Soldier component of Future Combat System (FCS). Land Warrior integrated ensemble systems, to include applicable long-lead items, will be produced for a Stryker Battalion for evaluation purposes in the Fiscal Year 2006 (FY06) timeframe. The Ground Soldier System (GSS) will leverage the technological advancements transitioned from the Science and Technology (S&T) community including Future Force Warrior (FFW) to develop the Ground Soldier capability for FCS. The LW program and FFW Advanced Technology Demonstration (ATD) have made progress in consolidating in accordance with the FY05 Appropriations Language and a report has been submitted to Congress.

Beginning in FY06 this funding will be under PE 0603827A, Project S57.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY04: Obtained miniaturized Global Positioning System (GPS) Selective Availability Anti-Spoofing Module (SAASM) Cards, and other government furnished equipment (GFE) items to support LW-SI (Block II) system.	634	2255	0	0
FY05: Funds support the Army Strategic Software Improvement Program; purchase Ground Based GPS Receiver Application Module SAASM and other GFE items to support DBCS capabilities.				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
667

Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007
FY04: Continued LW-SI development which addresses LW to Stryker integration to meet the Key Performance Parameter (KPP) for Army Battle Command System (ABCS) interoperability with Light Digital Tactical Operations Center (TOC) and provided on-board power recharging capability in Stryker vehicles for LW equipped Soldiers. Fabricated and conducted contractor testing by General Dynamics (GD) LW-SI systems that are to be used for formal Government DT. Continued LW demonstrations to other countries to demonstrate system capability and functionality. FY05: Continues development engineering and for developing one company's worth of prototype devices for DBCS capabilities. Continue development work on the LW integrated ensemble systems for evaluation by a Stryker Battalion.	63229	47421	0	0
FY04: Ramp up of the Land Warrior-Stryker Interoperable (LW-SI) program required government test support activity such as Brigade Combat Team testing support and interoperability test with the Army Test and Evaluation Center (ATEC). FY 05: Initiate developmental and operational test for the Dismounted Battle Command System (DBCS) capabilities for Stryker Battalions and begin developmental testing for the LW integrated ensemble systems.	2950	8850	0	0
FY04: Continued program management and systems engineering support for overall program efforts. Continued minimal operations support of PM Land Warrior - Fort Monmouth, and maintained appropriate activity at PM Land Warrior - Fort Bragg. Provided TRADOC Soldier Manager (TSM) Soldier Support funding for analysis of alternatives and other laboratory experiments. FY05: Continue Program management and systems engineering support for overall program efforts. Continue program reviews for In Process Review (IPR) to support the preparation for Milestone C, and report out on required ACAT I documentation requirements. FY04-FY05: Continue to support NATO Land Group 3 and other partnered countries to ensure compatibility with potential multinational military operations.	11370	14448	0	0
Totals	78183	72974	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
667

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0604827, S57 Land Warrior	0	0	50218	27086	29935	29927	41877	46842	Continuing	Continuing
OPA 3, M80500, Land Warrior	1538	8862	35700	21198	49066	70884	28680	3087	Continuing	Continuing
OPA 4, MS3610, Land Warrior Initial Spares	643	708	492	1574	1622	1613	629	632	Continuing	Continuing
RDTE, 0603001, DJ50, Future Warrior Technology Insertion	43806	49143	56034	40286	44956	44998	42526	43976	Continuing	Continuing
RDTE, 0604817A, D902 Combat Identification	8021	0	0	0	0	0	0	0	0	8021
RDTE, 0604713A, Mounted Warrior	0	2685	0	0	0	0	0	0	0	2685
RDTE, 0604827, S56 Mounted Warrior	0	0	7600	0	0	0	0	0	0	7600
OPA 3, M80600, Mounted Warrior	0	0	1600	0	0	0	0	0	0	1600

C. Acquisition Strategy: The Army has moved funds from PE 0604713A-667 effective FY06. Funds are under PE 0604827A-S57 after FY 2005. In an effort to comply with Congressional intent and to leverage from the success of current developed Land Warrior (LW) components, the Army has refocused the LW program to spiral out Dismounted Battle Command System (DBCS) capabilities (e.g. Commander's Digital Assistant (CDA), Enhanced Position Location and Reporting System (EPLRS) MicroLight Radio) to Soldiers in the field for near-term capability. Accelerating components of the Land Warrior System also addresses the Soldier component of Future Combat System (FCS). Land Warrior integrated ensemble systems, to include applicable long-lead items, will be produced for a Stryker Battalion for evaluation purposes in the Fiscal Year 2006 (FY06) timeframe. The Ground Soldier System (GSS) will leverage the technological advancements transitioned from the Science and Technology (S&T) community including Future Force Warrior (FFW) to develop the Ground Soldier capability for FCS. The LW program and FFW Advanced Technology Demonstration (ATD) have made progress in consolidating in accordance with the FY05 Appropriations Language and a report has been submitted to Congress.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
668

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
668 SOLDIER ENHANCE PGM	9686	15175	0	0	0	0	0	0	0	34796

A. Mission Description and Budget Item Justification: This project supports accelerated integration, modernization, and enhancement efforts of lighter, more lethal weapons, and improved Soldier items including lighter, more comfortable load-bearing equipment, field gear, survivability items, communications equipment, and navigational aids. Soldiers are managed in three categories: dismounted Soldiers, combat crews (air and ground), and other Soldiers. Projects are generally completed in three years or less.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY04-FY05: Continued in house engineering support services, conduct technical evaluation and program reviews.	2369	2446	0	0
FY04-FY05: Continued evaluation/procure prototypes and/or test for several efforts such as Close Combat Mission Capability Kit, XM102 Reloadable Stun Grenade, Semi-automatic sniper system, Electronic Stun Baton, Blast Protective Footware, POL Handler Glove, Compact Metal Detector, Enhanced Fuel Bar, Modular Glove System, Close Quarters Battle Kit and Rapid Wall Breaching Kit.	3995	3220	0	0
FY04-FY05: Initiates evaluation for such items as: Water Purification Pen, Integrated Laser White Pointer (ILWLP), Small Tactical Optical Ranging Module (STORM) micro-Laser Range Finder (MLRF) sytem.	1123	2689	0	0
FY04-FY05: Initiates market surveys and/or evaluations on new items to commence development and demonstration. New items started will continue evaluation/procure prototypes.	2199	6820	0	0
Totals	9686	15175	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
668

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA3, MA6800, Soldier Enhancement	4135	9737	4810	9165	10529	3410	7347	5451	Continuing	Continuing
OPA2, BA5300, Soldier Enhancement	8784	25433	8153	14590	13909	9587	9516	7670	Continuing	Continuing
WTCV, GC0076, Small Arms (SEP)	8080	3479	5181	2782	5459	1269	5229	4249	Continuing	Continuing
WTCV, GZ1290, Squad Automatic Wpn (Mods)	13058	3369	3095	5314	9421	4181	5141	3190	Continuing	Continuing
WTCV, GZ2800, M16 Rifle Mods	18386	2336	1970	1024	3925	1026	3599	3602	Continuing	Continuing
WTCV, GB3007, M4 Carbine Mods	48249	13724	44817	17064	13905	6332	13733	9799	0	167623
WTCV, G01500, Sniper Rifle	9172	8837	9656	8431	195	0	0	0	0	36291
WTCV, GC0925, Mods	0	3232	5146	1720	2809	501	3098	2139	Continuing	Continuing
PAA, F47500, 7.62mm AP	400	400	400	400	0	0	0	0	0	66708
PAA, F47600, 5.56mm AP	1600	1600	600	600	0	0	0	0	0	17379
PAA, F00900, 40mm Canister	0	0	0	0	0	0	0	0	0	0
OMA, 121017, Central Funding & Fielding	88778	141770	136115	161051	159302	115700	0	0	Continuing	Continuing

C. Acquisition Strategy: The Soldier Enhancement Program (SEP) focuses on developmental initiatives and integration efforts that lend themselves to accelerated acquisition and fielding in the near term (within three years). New SEP candidates are reviewed and approved annually. SEP items are procured from multiple appropriations, i.e., OMA, OPA, WTCV, and PAA.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604713A - Combat Feeding, Clothing, and Equipment				PROJECT 680		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
680 MOUNTED WARRIOR	0	2685	0	0	0	0	0	0	0	2685

A. Mission Description and Budget Item Justification: Mounted Warrior (MW) provides combat crewmembers and vehicle commanders in the Current and Future force with increased mission effectiveness on the network centric battlefield in the areas of lethality, command and control, communications, survivability, mobility, and sustainability. MW Soldier Systems (MWSS) will provide the combat commander increased capabilities to conduct offensive and defensive operations by providing uninterrupted viewing of their immediate surroundings while remaining connected to on-board platform C4I capabilities, thereby providing crews with continuous situational awareness. MWSS Helmet Mounted Display extends fire control information to vehicle commanders while they are standing up in the hatch, or dismounted allowing them to maintain immediate situational awareness of the their direct battle space, while simultaneously controlling inter-netted fires, vehicle, or dismounted soldiers. MWSS will provide remote digital connectivity to the Force XXI Battle Command Brigade and Below (FBCB2) information system via the vehicles C4I capabilities. The MWSS will maximize crew mobility, providing hands free, tetherless communications.

Beginning in FY06 this funding will be under PE 0603827A, Project S56.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Project was not funded in FY2004. This is a Congressional interest item funded in FY2005. FY2005 Planned Program: Fabricate up to 250 field hardened operational NOMAD test units ready for installation into Stryker vehicles, with appropriate instructions and support equipment. These heads-up display units will be used for associated testing and evaluation. Funds support developmental engineering to include communications subsystems and processing subsystems, prototype manufacturing, and systems engineering and program management support.	0	2685	0	0
Totals	0	2685	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
680

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0604827A, S56, Mounted Warrior	0	0	7600	0	0	0	0	0	Continuing	Continuing
OPA3, M80600, Mounted Warrior	0	0	1600	0	0	0	0	0	Continuing	Continuing
RDTE, 0604713A, D667, Land Warrior	78183	72974	0	0	0	0	0	0	Continuing	Continuing
RDTE, 0604827A, S57, Land Warrior	0	0	50218	27086	29935	29927	41877	46842	Continuing	Continuing
RDTE, 0303001, DJ50, Future Warrior Technology	43806	49143	56034	40286	44956	44998	42526	43976	Continuing	Continuing
OPA4, MS3610, Land Warrior Initial Spares	643	708	492	1574	1622	1613	629	632	Continuing	Continuing
OPA3, M80500, Land Warrior	1538	8862	35700	21198	49066	70884	28680	3087	Continuing	Continuing

C. Acquisition Strategy: The Army has moved funds from PE 0604713A-680 effective FY06. The MW program provides the spiral fielding of mature technologies and advanced capabilities to meet the needs of the Combat Vehicle Crewman (CVC). The first spiral will equip a Stryker battalion with mature/existing technologies to be used to develop tactics, techniques and procedures (TTPs), which will be used to define the requirements for future spirals. This is a Congressional interest item funded in FY2005.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
C40

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
C40 SOLDIER SUPPORT EQUIPMENT - ED	2760	549	0	0	0	0	0	0	0	14312

A. Mission Description and Budget Item Justification: Not applicable for this item.

Accomplishments/Planned Program Not applicable for this item.

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
L40

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L40 CLOTHING & EQUIPMENT	2960	5116	0	0	0	0	0	0	0	12467

A. Mission Description and Budget Item Justification: Not applicable for this item.

Accomplishments/Planned Program Not applicable for this item.

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev

COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
Total Program Element (PE) Cost	68860	49615	61090	124134	73096	43417	23213	18170	Continuing	516981
241 NSTD COMBINED ARMS	67340	47216	59154	122145	71054	41362	21126	16066	Continuing	499628
573 STRICOM/NAWCTSD SUPPORT	1520	2399	1437	1480	1533	1545	1578	1596	Continuing	14309
587 ARMY DEVELOP CTIA/TENA CAPABILITY	0	0	499	509	509	510	509	508	0	3044

A. Mission Description and Budget Item Justification: Program Element funds development of Non-System Training Devices to support force-on-force training at the Combat Training Centers (CTC), general military training and training on more than one item/system, as compared with system devices which are developed in support of a specific item/weapon system. Training devices and training simulations help to modernize the forces through force multipliers that improve combat effectiveness by providing realistic training. Training devices maximize the transfer of knowledge, skills, and experience from the training situation to a combat situation. Force-on-force training at the National Training Center (NTC), Ft. Irwin, CA; Joint Readiness Training Center (JRTC), Ft. Polk, LA, and Combat Maneuver Training Center (CMTC), Hohenfels, Germany; and battle staff training in Battle Command Training Program (BCTP) provide increased combat readiness through realistic collective training in low, mid, and high intensity scenarios. Project 241, Non-System Training Devices-Combined Arms, develops simulation training devices for Army-wide use, including the CTCs. Project 573 funds key organizational support to Army/DoD Transformation via innovative simulation and training device efforts. PEO STRI's unique geographic colocation with other services facilitates joint training solutions in a common environment. FY06/07 funding supports a more active presence in this effort.

In FY06 and FY07, the Non-System Training Devices, 241 project line will develop prototype training devices to support Combined Arms (Infantry, Armor, Aviation, Air Defense, Artillery, Engineer, Chemical, and Support troops) training and multi-system training within the Army. There is an increased effort to replace the instrumentation system at the National Training Center (NTC), Ft. Irwin, CA and at the Joint Readiness Training Center (JRTC), Ft. Polk, LA with a system that meets the Army's existing and future, advanced collective training objectives. This is a complete modernization of these two systems, leveraging advanced technology using a modular concept. FY04 initiated the development of One Tactical Engagement Simulation System. That development effort increases through FY07 to provide realistic force-on-force training for weapon systems that are not direct fire and maximizes embedded training capability where possible. In FY06 and FY07, PEO STRI/NAWCTSD SUPT, 573 project line will provide for minimum PEO STRI core operations supporting development of training devices and simulations by PEO STRI Project Managers (PM TRADE, PM ITTS, PM CATT, PM Future Force (S) and PM Constructive Simulation).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	51694	44311	59063
Current Budget (FY 2006/2007 PB)	49615	61090	124134
Total Adjustments	-2079	16779	65071
Net of Program/Database Changes			
Congressional Program Reductions	-751		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-1328		
Adjustments to Budget Years		16779	65071

FY 06/07 increases funding to support a more active presence for the Combat Training Center programs and the One Tactical Engagement Simulation System program. This acceleration responds to a requirement to provide combined arms training and multi-system training within the Army to meet existing and future, advanced collective training objectives. Funds provide complete modernization of combat training instrumentation systems and leverages advanced technology using a modular concept. The One Tactical Engagement Simulation System effort increases to provide realistic force-on-force training for weapon systems that are not direct fire and maximizes embedded training capabilities where possible.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev				PROJECT 241		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
241 NSTD COMBINED ARMS	67340	47216	59154	122145	71054	41362	21126	16066	Continuing	499628

A. Mission Description and Budget Item Justification: This project supports development of prototype training devices to support Combined Arms (Infantry, Armor, Aviation, Air Defense, Artillery, Engineer, Chemical, and Support troops) training and multi-system training within the Army, to include the Reserve Components.

Corps Battle Simulation (CBS) is the Army's current command and staff training simulation at the corps/division level. CBS is the cornerstone model of the Joint Training Confederation (JTC) and the essential Brigade to Corps piece of the first two versions of the Army Constructive Training Federation (ACTF). Tactical Simulation (TACSIM) is the Army's current primary tactical intelligence module for constructive simulation and the intelligence piece of the ACTF until the Warfighters' Simulation replaces TACSIM. TACSIM also supports the JTC. Combat Service Support/Training Simulation System (CSS/TSS) provides logistics functions in support of warfighter exercises. Funding for CSS/TSS was received through FY04. The One Tactical Engagement Simulation System (One TESS) provides for an advanced, joint, collective, combined arms, live training system using tactical weapon systems supported by a family of Training Aids, Devices, Simulations and Simulators (TADSS) that support up to brigade-level exercises, including all Battlefield Operating Systems, at Homestation, Maneuver Combat Training Centers (MCTC), and deployed sites. OH-58D TESS will provide a live force-on-force training capability for OH-58D. The TESS will leverage existing technology used on the Longbow TESS. OH-58D TESS will use GEO-Pairing and laser engagement. and will provide a OneTESS like capability. The National Training Center (NTC) and the Joint Readiness Training Center (JRTC) Objective Instrumentation System (OIS) provides a completely digital based system for full tactical system connectivity and High Level Architecture (HLA) compatibility. This program will develop the instrumentation necessary to bring the existing Military Operations in Urban Terrain (MOUT) sites to an instrumented maneuver capability. When integrated with the Combat Training Center (CTC) OIS it will provide automated data collection and feedback, command and control of the MOUT exercises, and an interactive target system to support a brigade-level maneuver task force. The system provides the observer/controllers the ability to monitor unit approach, fight through and departure maneuver activities in real time and select segments to record for after action reviews. The Instrumented MOUT provides live fire and force-on-force exercise management and support. The NTC Range Data Measurement System (NTC RDMS) Frequency Conversion develops the architecture to resolve the frequency usage conflict at NTC. The CMTC enhancements were completed in FY04. The Aerial Weapon Scoring System (AWSS) is an air-to-ground scoring system designed specifically to support U.S. Army attack helicopter training. AWSS provides near real time scoring results of live fire exercises conducted from attack helicopters firing caliber .50, 7.62, 20 & 30 millimeter projectiles and 2.75 inch rockets. AWSS also scores simulated Hellfire missile engagements for helicopters using the Hellfire Training Missile. The New Generation Army Targetry System (NGATS) program is a spiral developmental evolutionary acquisition program that continues to provide the development and planning to address shortcomings in non-NGATS targetry as well as emerging weapon system targetry requirements and technology insertion. The Basic Electronics Maintenance Trainer (BEMT) program supports the basic electronics training of missile electronics repair, test, measurements, and diagnostics for Redstone Arsenal and Fort Gordon.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev

PROJECT
241

In FY06/07, this project funds development of limited enhancements to Corps Battle Simulation and TACSIM to ensure training relevance until the system is replaced with objective system, continued development of NGATS, significant development efforts on OneTESS, and further implementation of Live Training Transformation through development of the Common Training Instrumentation Architecture (CTIA); enabling Joint training with the Joint Forces Command through modernization programs including the Objective Instrumentation Systems (OISs) for the Maneuver CTCs, Homestations, Military Operations in Urban Terrain (MOUT), Digital Multi-Purpose Range Complexes (DMPRCs), and Homestation Instrumentation Training System (HITS). These systems provide integrated Live, Virtual, and Constructive training environments and tools in support of the Contemporary Operating Environment.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY04-FY07: Continue development, installation, integration and testing of Technology Capability Groupings (TCG) for both the NTC-OIS and JRTC-OIS. The NTC Maneuver MOUT will initiate design efforts in FY 06 and continue with integration and testing in FY 07. Continue development of CTIA V1.3 to provide the common architecture for the CTC, MOUT, and DMPRC training instrumentation programs. Continue renovation of the Range Data Measurement System and development of training modules necessary for interoperability with the Army Battle Command Systems (ABCS). CMTCC OCCS, RDMS, and SINCGARS training infrastructure is in the final acceptance test phase.	50486	19191	31552	64004
FY06: OH-58D TESS will provide a prototype TESS set, pursue air worthiness review, CTC integration, and proof of principle.	0	0	310	0
FY04-FY07: Continue to develop limited CBS enhancements and provide support to ACTF functionality and integration.	6257	5912	6856	7953
FY04-FY07: Continue NGATS program development and planning for weapon system targetry requirements. Increment I will correct shortcomings in non-NGATS target systems' reliability, availability, maintainability, supportability, interoperability, and deployability. Increment II and future increments will address emerging weapon systems targetry requirements and technology insertion.	1771	2018	2512	1522
FY04: Developed limited enhancements to Combat Service Support/Training Simulation System (CSS/TSS).	743	0	0	0
FY04-FY07: Continue development of One Tactical Engagement Simulation System (One TESS). Refine systems architecture, develop FCS/Joint, Live/Virtual and Constructive solutions and integrate operational testing and embed into current combat systems under development.	3633	17580	14486	43736
FY06-FY07: Develop limited Tactical Simulation (TACSIM) enhancements to support ACTF and provide TACSIM security accreditation.	1442	0	2643	2641
FY04: Develop Live Virtual Constructive Integration Architecture (LVC-IA) and concept development to provide Joint Seamless L-V-C Army Interoperability.	2567	1565	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev

PROJECT
241

Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007
FY04: Completed evaluation for Basic Electronics Maintenance Trainer (BEMT) computerized instructional devices with the capability for computer based instruction and hands-on practical exercise training.	441	0	0	0
FY05: Initiate development of short range scoring systems which can score 2.75 inch training rockets from 800-2500 meters from the existing Aerial Weapon Scoring System (AWSS).	0	950	0	0
FY06: Develop intra-Tactical Operations Center (TOC) ABCS Collection capability for the Digital AAR Tool (DAART) at the MCTC's	0	0	795	0
FY07: HITS program. Initiate development of interfaces (CTIA) and Integration of Live, Virtual and Constructive Simulation into standardized Army C4I system. Develop interfaces for transitioning program capability to secret high security classification.	0	0	0	2289
Totals	67340	47216	59154	122145

B. Other Program Funding Summary

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA3, Appropriation NA0100 Training Devices, Non-System	304812	307155	184528	249869	191419	221303	187514	186804	Continuing	Continuing
OPA3, Appropriation MA6601 CTC Support	41512	90321	60811	37996	78139	33463	31646	1284	Continuing	Continuing

C. Acquisition Strategy: Competitive development efforts based on performance specifications.

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev

PROJECT
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CBS Development	C/FFP	JPL, Cal Tech, Pasadena, CA	38299	5105	1-3Q	5712	1-3Q	6726	1-3Q	Continue	Continue	Continue
b . TACSIM Enhancement Development	C/CPFF	Northrop Grumman, Orlando, FL	1033	0		1887	1-3Q	1866	1-3Q	Continue	Continue	Continue
c . CSS/TSS Upgrade Development	Various	Multiple	515	0		0		0		0	515	515
d . NGATS	T & M	AMCOM, Redstone Arsenal, AL	5732	1419	1Q	1785	1Q	1081	1Q	Continue	Continue	Continue
e . NTC-OIS	CPAF	Lockheed Martin Corp, Orlando, FL	63498	12242	1-3Q	15716	2Q	23719	2Q	Continue	115175	Continue
f . JRTC-OIS	CPAF	Lockheed Martin Corp, Orlando, FL	0	0		5636	2Q	28682	2Q	Continue	Continue	Continue
g . NTC-MOUT	TBS	TBS	0	0		2400	2Q	1680	2Q	Continue	Continue	Continue
h . CTIA	C/FFP	Lockheed Martin Inc., Orlando, FL	31452	3461	1-3Q	3260	1-2Q	5392	1-2Q	Continue	Continue	Continue
i . One TESS	Various	Multiple	7481	15885	1-3Q	11155	1-2Q	40451	1-2Q	Continue	74972	Continue
j . CMTC OCCS, RDMS & Sincgars Infrastrucure	FFP	Multiple	4620	0		0		0		0	4620	7788

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev **PROJECT 241**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . NTC RDMS	FFP	SAIC, San Diego, CA	3903	0		0		0		0	3903	3812
l . VERTS	FFP	SAIC, San Diego, CA	2541	0		0		0		0	2541	2541
m . LVCIA	various	various	2067	1565		0		0		0	3632	2067
n . BEMT	SS/FFP	Nida Corp., Melbourne, FL	186	0		0		0		0	186	186
o . CTIA, NTC Fiber Optic	FFP	SAIC, San Diego, CA	13414	0		0		0		0	13414	13414
p . AWSS	FFP	MDS, Fullerton, CA	0	950	2Q	0		0		0	950	995
q . CBS Security	C/FFP	TITAN, Leavenworth, KS	0	230	1-3Q	240	1-3Q	245	1-3Q	Continue	Continue	Continue
r . TACSIM DEVELOPMENT	various	multiple	0	0		256	1-4Q	259	1-3Q	Continue	Continue	Continue
s . HITS	C/FFP		0	0		0		2289	1-4Q	0	2289	2289
t . MCTC DAART	C/FFP	TBD	0	0		795	1-2Q	0		0	795	795
u . OH-58D TESS	TBD	TBD	0	0		310	1-3Q	0		0	310	310
Subtotal:			174741	40857		49152		112390		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev **PROJECT 241**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CBS Engineering & Technical Support	Multiple	Multiple	943	192	1-4Q	170	1-4Q	186	1-4Q	Continue	Continue	Continue
b . TACSIM Engineering, Technical and Administrative Support	Multiple	Multiple	169	0		174	1-4Q	177	1-4Q	Continue	Continue	Continue
c . CSS/TSS Engineering & Technical Support	Various	Multiple	120	0		0		0		0	120	120
d . NTC-OIS	Various	Multiple	10023	2188	1-4Q	2188	1-4Q	2174	1-4Q	Continue	Continue	Continue
e . JRTC-OIS	Various	Multiple	0	0		752	1-4Q	787	1-4Q	Continue	Continue	Continue
f . NTC-MOUT	Various	Multiple	0	0		100	1-4Q	70	1-4Q	Continue	Continue	Continue
g . ABCS Integration	C/FFP	Madison Res Corp, Orlando, FL	4064	0		0		0		0	4064	4512
h . NGATS	T&M	AMCOM, Redstone Arsenal, AL	2472	599	1Q	727	1Q	441	1Q	Continue	Continue	Continue
i . CTIA	Various	Various	4875	1300	1-4Q	1500	1-4Q	1500	1-4Q	Continue	Continue	Continue
j . Concept Exploration	Multiple	Various	1488	0		0		0		0	1488	1488

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev **PROJECT 241**

II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . OneTESS	Multiple	Various	3243	534	1-4Q	1219	1-4Q	1255	1-4Q	Continue	Continue	Continue
l . CMTCC OCCS, RDMS and Sincgars Infrastructure	Multiple	Various	625	0		0		0		0	625	625
m . LVC-IA	Multiple	Various	500	0		0		0		0	500	500
Subtotal:			28522	4813		6830		6590		Continue	Continue	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CBS Test Support	Various	Multiple	139	55	1-4Q	93	1-4Q	95	1-4Q	Continue	Continue	Continue
b . TACSIM Accreditation Testing	Various	Multiple	81	0		87	1-4Q	92	1-4Q	Continue	Continue	Continue
c . OneTESS Development and Test	MIPR	Multiple	0	820	1-4Q	1500	1Q	1400	1-4Q	Continue	Continue	Continue
Subtotal:			220	875		1680		1587		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE **PROJECT**
0604715A - Non-System Training Devices - Eng Dev **241**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CBS Program Management	Various	PEO STRI, Orlando, FL 32826	1433	330	1-4Q	641	1-4Q	701	1-4Q	Continue	Continue	Continue
b . TACSIM Program Management	Various	Multiple	159	0		239	1-4Q	247	1-4Q	Continue	Continue	Continue
c . CSS/TSS Program Management	Various	Multiple	108	0		0		0		0	108	137
d . BEMT program Management	MIPR	PEO STRI/NAVAIR, Orlando, FL	255	0		0		0		0	255	255
e . OneTESS Program Management	Various	PEO STRI, Orlando, FL 32826	1719	341	1-4Q	612	1-4Q	630	1-4Q	Continue	Continue	Continue
Subtotal:			3674	671		1492		1578		Continue	Continue	Continue
Project Total Cost:			207157	47216		59154		122145		Continue	Continue	Continue

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev PROJECT
241

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
(1) BEMT	1				2				3				4				5				6				7				8				9			
(2) NGATS Increment 1MS B, (3) NGATS Increment 1 IOC																																				
(4) NGATS Increment 2 MS B, (5) NGATS Increment 2 IOC, (6) IOC																																				
(7) One TESS MS B, (8) One TESS MS C																																				
(9) NTC OIS Installation/Integration & Fielding																																				
CBS/TACSIM Annual Version Releases for ACTF																																				

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev **PROJECT 241**

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
CBS/TACSIM Annual Version Releases for ACTF	1-3Q	1-3Q	1-3Q	1-3Q				
NTC OIS Installation/Integration & Fielding		2Q						
NTC OIS IOC					4Q			
JRTC OIS Installation/Integration & Fielding			1Q					
JRTC OIS IOC						4Q		
OneTESS Increment 1 MSB/MSB/IOC		4Q		4Q	4Q			
OneTESS Increment 2 MSB/MSB/IOC				4Q		4Q		4Q
OneTESS Increment 3 MSB/MSB						4Q		4Q
OneTESS Increment 4 MSB								4Q
NGATS Increment 1 IOC				2Q				
NGATS Increment 1 Milestone B		2Q						
NGATS Increment 2 IOC							3Q	
NGATS Increment 2 Milestone B					1Q			
NGATS Contract Award	1Q	1Q	1Q	1Q	1Q	1Q	1Q	1Q
CTIA Development Contract Award	1-2Q	1-2Q	1-2Q	1-2Q	1-2Q	1-2Q		
BEMT Equipment Delivery	3Q							
TACSIM Enhancement Development Contract Award	1Q		2Q	1Q				
AWSS Contract Award		2Q						

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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PROJECT
573

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
573 STRICOM/NAWCTSD SUPPORT	1520	2399	1437	1480	1533	1545	1578	1596	Continuing	14309

A. Mission Description and Budget Item Justification: In support of Non-System Training Devices (NSTD), this project funds the US Army Program Executive Officer Simulation, Training and Instrumentation (PEO STRI) core operations supporting development of training devices and simulations by PEO STRI project managers (PM TRADE, PM ITTS, PM CATT, PM Constructive Simulation and PM (Future Force) Simulation. FY06 and 07 project funds labor in support of PEO operations.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
PEO STRI labor in support of project managers PM TRADE, PM ITTS, PM CATT, PM Constructive Simulation and PM (Future Force) Simulation.	1520	2399	1437	1480
Totals	1520	2399	1437	1480

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not Applicable.

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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Dev

PROJECT
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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
587 ARMY DEVELOP CTIA/TENA CAPABILITY	0	0	499	509	509	510	509	508	0	3044

A. Mission Description and Budget Item Justification: Not applicable for this item.

Accomplishments/Planned Program Not applicable for this item.

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

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BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604716A - TERRAIN INFORMATION - ENG DEV					PROJECT 579	
COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
579 FIELD ARMY MAP SYS ED	6662	3152	0	0	0	0	0	0	0	Continuing

A. Mission Description and Budget Item Justification: This Project funds development of the Digital Topographic Support System (DTSS). All DTSS systems use Commercial Off the Shelf (COTS) software. DTSS variants include the: DTSS-Light (DTSS-L) which is shelter mounted on a HMMWV, DTSS-Deployable (DTSS-D) which is mounted in hand carried transit cases), DTSS-Base (DTSS-B) which is garrison based for data generation, and the High Volume Map Production System (HVMP) which reproduces digital maps. Current force DTSS systems provide the commander the ability to rapidly obtain terrain information and produce digital topographic products. The traditional terrain analysis, topographic and reproduction support provided by Army Engineer Terrain Teams was a slow, labor intensive process that does not meet the needs of the digital battlefield. The DTSS provides digital terrain analysis and map updates to commanders and weapons platforms in support of mission planning (e.g., imagery exploitation, Cover and Concealment, other Intelligence Preparation of the Battlespace), rehearsal (e.g., 3D fly through, simulations) and execution (e.g., Common Operational Picture, route planning). The DTSS automates terrain analysis and visualization, data base (development, updating, management, and dissemination), and graphics reproduction. The Combat Terrain Information Systems (CTIS) Modernization Plan emphasizes the development of a combined, integrated, tactically deployable, fully autonomous terrain analysis and graphics reproduction capability. These capabilities are being provided in HMMWV shelterized (DTSS-L) and transit case (DTSS-D) configurations. The DTSS-L is highly mobile and capable of supporting a full range of military operations, as well as peacetime stability and support operations. The DTSS-L has been Type Classified-Standard. The DTSS-D provides a COTS configuration that is capable of operating all of the terrain analysis software. The DTSS-D consists of transportable workstations and peripherals that can be set up to augment the tactical configurations. The DTSS-D does not include tactically deployable shelters and vehicles or tactical communications. The DTSS-D has been Type Classified-Standard. The DTSS-B was procured in response to a US Army Europe (USAEUR) initiative to develop the capability to generate terrain information over sparsely mapped areas to support contingency, mission rehearsal, and training operations. The DTSS-B is designed to augment the National Geospatial-Intelligence Agency (NGA) capabilities at the Echelon above Corps (EAC) level by providing quick response data generation, special purpose mapping, terrain analysis, and theater geospatial data baseing. The DTSS-B includes a component that is capable of handling National Technical Means information in a secure environment. The DTSS-B has been Type Classified-Standard. The HVMP provides a tactical capability to rapidly reproduce large volumes of topographic materiel from digital sources. HVMPs are capable of reproducing information from a variety of digital and hardcopy sources via direct digital interfaces. CTIS systems are deployed from Brigade through Echelon above Corps, Stryker Brigades and Special Forces Groups. Additionally, an institutional training classroom environment has been developed and integrated into the curriculum at the National Geospatial/Intelligence School (NGS). NGS provides critical MOS (Military Occupation Speciality) specific training on the operation and use of CTIS developed systems. Products developed as part of the CTIS RDT&E program (e.g., improved Battle Command Systems interoperability, migration to Joint Technical Architecture - Army (JTA-A) and Common Operating Environment (COE), improved data base management and distribution, automated feature extraction, improved tactical terrain decision aid functionality, rapid terrain visualization, battlefield terrain reasoning awareness (BTRA), migration to Distributed Common Ground Station - Army (DCGS-A) architecture, and improved graphics reproduction) are being incorporated into all of the DTSS hardware and software architectures.

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604716A - TERRAIN INFORMATION - ENG DEV **PROJECT**
579

Additionally, the Current Force Topographic Support System (TSS) found in Engineer Topographic Companies is outdated and must be modernized to keep pace with Army digitization. The modernization associated with the TSS include replacing the Operations, Distribution and Photomechanical Sections with DTSS-L, DTSS-D, and the HVMP. The Survey section will be downsized to a HMMWV configuration and the Drafting section will be updated to include digital cartographic equipment. This system supports the Current-to-Future Force transition path.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Continue P3I development for DTSS - Enhanced 3-D terrain visualization, semi-automated feature extraction, data conflation, Hydrology, Battlefield Terrain Reasoning and Assessment (BTRA) enhancements, Urban(MOUT) TDAs and improved data base design (seamless enterprise database)	6662	0	0	0
Continue P3I development for DTSS - Initiate transition of functionality to DCGS-A, continue investigation of COTS upgrades, continue improvement of coalition/joint interoperability.	0	3152	0	0
Totals	6662	3152	0	0

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	3199	4348	4000
Current Budget (FY 2006/2007 PB)	3152	0	0
Total Adjustments	-47	-4348	-4000
Net of Program/Database Changes			
Congressional Program Reductions	-47		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years		-4348	-4000

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604716A - TERRAIN INFORMATION - ENG DEV

PROJECT
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FY05: (-)\$2766K, Funds realigned to higher priority requirements.
 FY06: (-)\$4348K, Funds realigned to higher priority requirements.
 FY07: (-)\$4000K, Funds realigned to higher priority requirements.

C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA - KA2550 - Digital Topographic Support System (DTSS)	12907	8955	2888	11590	14568	3081	9766	9364	Continue	Continue

D. Acquisition Strategy: The Acquisition Strategy for the Digital Topographic Support System-Light (DTSS-L) Engineering Manufacturing and Development (EMD) phase was to utilize Army standard equipment and the Common Hardware/Software (CHS) computer workstations in conjunction with non-development item (NDI) components to develop an integrated baseline hardware configuration. The previous Combat Terrain Information Systems (CTIS) System Engineering and Integration (SE&I) contractor (Lockheed Martin Corp) executed the EMD phase, performing system integration, and provided units for formal test and evaluation. Milestone III for the DTSS-L was successfully completed in Jan 98. Production of the DTSS-L commenced in February 1999. Funding to support technology refreshment of the DTSS-Heavy (DTSS-H), DTSS-L, and DTSS-Deployable (DTSS-D) was programmed on a 5-yr. cycle. DTSS-L replaced the DTSS-H in FY02/03. Acquisition of the DTSS-D and DTSS-B was completed in FY 1995 and FY 1996, respectively. Based upon Combatant Commanders, TRADOC (Training and Doctrine Command) and PEO C3S (Program Executive Officer Command, Control, Communications, and Computers) User Evaluation approvals, the DTSS-D was Type Classified -Standard and added to the gaining unit's Table of Organization and Equipment. Funding to support a 5-year technology refreshment program for the DTSS-D commenced in FY 2000 and for the DTSS-B commenced in FY 2002. The DTSS-B has also been Type Classified-Standard. The acquisition of the DTSS-D and DTSS-B relied upon existing contracts and commercial-off-the-shelf to the fullest extent possible. The Project Office will continue with this strategy for all technology refreshment programs. The HVMP Acquisition Strategy utilizes COTS and NDI components integrated with Army standard hardware (e.g., trucks, shelters, power equipment) to develop an integrated baseline. The pre-planned product improvement program (P3I) is being executed by the current SE&I contractor (Northrup Grumman, Inc.). The contracting strategy for the DTSS-L program was to execute the EMD phase through the previous SE&I contractor, Lockheed Martin Corporation. A Competitive Cost Plus Fixed Fee (CPFF) contract was awarded for both the previous and existing CTIS SE&I contracts.

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A competitively awarded, Firm Fixed Price (FFP) contract was awarded to Sechan Electronics, Inc. for the Full Rate Production of the DTSS-Light. The HVMP contracting strategy is to execute the System Design and Demonstration (SDD) phase through the current SE&I contractor. A competitively awarded FFP contract was awarded to Sechan Electronics for the Full Rate Production of the HVMP. The computer workstations for CTIS programs were being procured, where appropriate, through the project manager for CHS.

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604726A - Integrated Meteorological Support System

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	3160	2450	0	0	0	0	0	0	0	Continuing
D85 IMETS (TIARA)	3160	2400	0	0	0	0	0	0	0	Continuing
D86 IMETS TADSS (TIARA)	0	50	0	0	0	0	0	0	0	Continuing

A. Mission Description and Budget Item Justification: The Integrated Meteorological System (IMETS) RDT&E program element funds the development of evolving upgrades to the fielded system. It provides the battlefield commander at all echelons with accurate, high resolution, near real time weather data to conduct intelligence preparation of the battlefield (IPB). The IMETS is a mobile tactical automated weather data receiving, processing, and dissemination system designed to provide timely weather and environmental effects, forecasts, observations, and decision aid support to the Army. The IMETS is an Army-furnished system, which is operated by Air Force weather personnel and maintained within Army support channels. IMETS provides weather information overlays for the Common Tactical Picture (CTP), meteorological messages and other tailored products. IMETS provides direct client access to the IMETS meteorological database and to the database of weather impacts on friendly and threat systems. Three different configurations are tailored to the needs of the echelon supported; 1) command post configuration (CPC) for fixed facilities at echelon above corps (EAC) level where the IMETS is permanently integrated into the local area network; 2) vehicle mounted configuration (VMC) for tactical operations where the supported echelon moves frequently; and 3) light configuration (LC) for a small task force, where lightweight, easily deployed core weather functions can be performed without having its own vehicle, shelter, and power source. The weather requirement and effects capability transitions to the Distributed Common Ground Station - Army (DCGS-A). Future weather research and development will be conducted under the DCGS-A program.

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604726A - Integrated Meteorological Support System

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	2485	2369	2772
Current Budget (FY 2006/2007 PB)	2450	0	0
Total Adjustments	-35	-2369	-2772
Net of Program/Database Changes			
Congressional Program Reductions	-39		
Congressional Rescissions			
Congressional Increases			
Reprogrammings	4		
SBIR/STTR Transfer			
Adjustments to Budget Years		-2369	-2772

FY06 and funds realigned (-\$2369K) to higher priority requirements.
 FY07 and funds realigned (-\$2772K) to higher priority requirements.

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BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604726A - Integrated Meteorological Support System					PROJECT D85	
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
D85 IMETS (TIARA)	3160	2400	0	0	0	0	0	0	0	Continuing

A. Mission Description and Budget Item Justification: The Integrated Meteorological System (IMETS) RDTE program element funds the development of evolving upgrades to the fielded system. It provides the battlefield commander at all echelons with accurate, high resolution, near real time weather data to conduct intelligence preparation of the battlefield (IPB). The IMETS is a mobile tactical automated weather data receiving, processing, and dissemination system designed to provide timely weather and environmental effects, forecasts, observations, and decision aid support to the Army. The IMETS is an Army-furnished system, which is operated by Air Force weather personnel and maintained within Army support channels. IMETS provides weather information overlays for the Common Tactical Picture (CTP), meteorological messages and other tailored products. IMETS provides direct client access to the IMETS meteorological database and to the database of weather impacts on friendly and threat systems. Three different configurations are tailored to the needs of the echelon supported; 1) command post configuration (CPC) for fixed facilities at echelon above corps (EAC) level where the IMETS is permanently integrated into the local area network; 2) vehicle mounted configuration (VMC) for tactical operations where the supported echelon moves frequently; and 3) light configuration (LC) for a small task force, where lightweight, easily deployed core weather functions can be performed without having its own vehicle, shelter, and power source.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Improve the IMETS NOWCAST capability to ingest and fuse non-conventional battlefield observations such as UAV and mobile meteorological sensors and additional conventional observations such as Meteorological Satellite imagery and data. Along with the Navy and the Air Force, design, develop, and integrate a joint DOD standard 4-D weather database and common application interfaces to support current and future C4ISR systems. Integrate automated mission inputs into IWEDA from ABCS digital OP-ORD information from the JCDB or other sources. Complete integration of IMETS Weather Analysis Tool into GCCS. Port the entire IMETS baseline software from UNIX to Intel Processor which is the objective IMETS Light processor.	0	0	0	0

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604726A - Integrated Meteorological Support System

PROJECT
D85

Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007
Improve the Weather Feature application on the Common Tactical Picture (CTP). Continue enhancements to TAWS-A. Implement optimization ingest of artillery-met observations into IMETS forecasts. Develop and integrate improved IWEDA military weather effects database that can provide significantly improved weather support capability for Operation Enduring Freedom. The new IWEDA Rules cover: US Army and Air Force aviation systems and operational concepts, Special Operations Forces systems and operational concepts, Army Logistics/Combat Service Support systems and operations, as well as Afghan/Taliban threat systems. Implement automated mission inputs into IWEDA from ABCS digital OP-ORD information archived in the JCDB or other databases. Modify IMETS IWEDA and Contours client applications. Improve the ability for joint sharing of common meteorological forecasts, weather hazards/warnings and weather impact decision aids. Develop new prototype model for weather effects on illumination.	200	0	0	0
Conduct Operational and Developmental testing on IMETS Light Objective and Command Post configurations. Conduct Intra-Army Interoperability and Joint Interoperability Test Command Certification testing; continue test and evaluation support to ABCS 6.4.	1096	0	0	0
Integrate and test required enhancements to the IMETS Weather Analysis Tool software in GCCS. This will include improving the GCCS tools to include EDAs capable of accessing NOWCAST databases hosted either on IMETS and/or Navy/AF weather centers.	400	298	0	0
Complete porting and integration of IMETS software to a laptop configuration with a PC (Intel) processor.	700	0	0	0
Complete development, integration and testing of the initial IMETS NOWCAST capability with the capability to ingest and fuse both conventional and non conventional battlefield observations and increase temporal /spatial resolution. Continue work to enhance the IMETS NOWCAST capability to ingest and fuse non-conventional battlefield observations (UAV/Mobile met sensors) and to increase temporal/spatial resolution. Integrate NOWCAST processing into IMETS Tactical Decision Aid client applications effectively creating a new class of decision aids called Execution Decision Aids (EDAs) in support of FCS Units of Action. Integrate a Joint Meteorological Standard 4-D database and common application interfaces to support current and future C4ISR systems.	764	0	0	0
DT/OT Continuous Evaluation testing of latest IMETS software baseline Conduct Intra-Army Interoperability and Joint Interoperability Test Command Certification testing; continue test and evaluation support to DCGS-A & FCS	0	256	0	0
Develop the capability to utilize high bandwidth Global Information Grid, Global Broadcast System (GBS), and the WIN-T communication technology to "reachback" into weather databases maintained at AF Operational Weather Squadrons and AF/Navy Weather Centers. The objective is to utilize emerging wide bandwidth tactical communications networks to relay battlefield observations to the rear in order to update tactical databases used to drive weather effects EDAs and TDAs.	0	300	0	0

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BUDGET ACTIVITY
5 - System Development and Demonstration

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PROJECT
D85

Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
Investigate and implement new remote sensing technologies and capabilities. Implement soil moisture, and snow cover overlays on the COP to support trafficability predictions. Investigate new sensing technologies to provide real-time film loops depicting the formation and the movement of fog and/or smoke and dust plumes over the battlefield.	0	380	0	0
Develop improvements to the Target Acquisition Weather software to include handling aerosols relevant to Army scenarios such as smoke and dust; improve handling of horizontal path scenarios; and increasing wavelength resolution in the visible to .5um.	0	380	0	0
Test the viability of implementing EDAs at the soldier level by utilizing wireless LAN technology and PDA type processors to "alert" the soldier when changing weather conditions are likely to impact the execution of their missions. The IMETS "Mission Watch" applications would monitor the IMETS NOWCAST database and immediately broadcast appropriate warnings to the soldier when significant changes occur.	0	386	0	0
Integrate and test the new standard meteorological model (WRF) that the AF has mandated for use by the Army. The WRF model will replace the current AF standard meteorological model (MM5) used in IMETS.	0	400	0	0
Totals	3160	2400	0	0

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D85

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA 2 - SSN: BW0021-IMETS	11343	346	0	0	0	0	0	0	Continuing	Continuing

C. Acquisition Strategy: The IMETS development program integrates efforts from the Air Force, Army, and OSD DII COE. It is consistent with the development of the C4I Joint Technical Architecture-Army. The IMETS Non Developmental Item acquisition strategy proved successful in the fielding of Block I IMETS and this strategy is being continued with the Block II program. Current improvement efforts are to incorporate new numerical weather prediction forecasts and products communicated from centralized Air Force Hubs to the individual IMETS. Weather tactical decision aid upgrades and updated forecaster aids are developed to include products from Air Force initiatives. IMETS data and applications are being made accessible to Battlefield Functional Area C4I systems as clients through weather database services within the IMETS; hosted on the ABCS Information Server (AIS) and/or through the Joint Common Data Base (JCDB). Application modules from the Army Research Laboratory will be integrated and fielded as an upgrade to the current software baseline. These include: improvements in generation and display of higher time resolution and higher spatially resolved weather forecast and effects information; inclusion of physics-based weather decision aids and models; development of more versatile weather databases that support a variety of service and allied weather forecast models and environmental databases; development of weather applications consistent with joint METOC data standards; development of weather remote-sensing products from meteorological satellites; and ingest of battlefield sensor data to augment initializing mesoscale forecasts. IMETS functionality has been ported to a laptop computer to respond to requirements for a lighter more flexible IMETS for the highly mobile units. Fielding decision for these Interim IMETS Lights was accomplished in 3QFY02.

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BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604741A - Air Defense Command, Control and Intel - Eng

COST (In Thousands)		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
		Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
Total Program Element (PE) Cost		27974	26343	29012	21028	21046	20320	23543	30536	Continuing	0
126	FAAD C2 ED	14827	13738	15799	10114	9881	9894	11858	15612	Continuing	0
146	AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)	13147	12605	13213	10914	11165	10426	11685	14924	Continuing	0

A. Mission Description and Budget Item Justification: The Air and Missile Defense Planning and Control System (AMDPCS) is an Army Objective Force System with Homeland Defense capabilities that allows for the integration of Air and Missile Defense (AMD) operations for Air Defense Artillery (ADA) Brigades at Corps and Echelons above Corps (EAC), the Army Air and Missile Defense Command (AAMDC) Headquarters, at Army, Joint, or Coalition level forces.

The Forward Area Air Defense Command, Control, and Intelligence (FAAD C2I) System provides continuously tailored situational awareness and situational understanding of the battlespace (including data on threat aircraft, cruise missiles and unmanned aerial vehicles (UAVs) to support the planning and decision process at various levels of command. The mission is to collect, digitally process and disseminate real time target cueing and tracking information, common tactical air picture, and C2I information to all Short Range Air Defense (SHORAD) weapons (Avenger, Bradley Linebacker, Manportable Air Defense System (MANPADS), joint and combined arms). Unique FAAD C2 software will provide this mission capability by integrating FAAD C2 engagement operations software with the Joint Digital Radio (JDR), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced Position Location Reporting System (EPLRS), Global Positioning System (GPS), Airborne Warning and Control System (AWACS), Sentinel and the Army Battle Command System (ABCS) architecture. Provides joint C2 interoperability and horizontal integration with PATRIOT, THAAD, MEADS, JLENS and SHORAD weapon systems by fusing sensor data to create a scalable and filterable single integrated air picture (SIAP) and common operating picture (COP) at Army divisions and below. System software will provide target data and engagement commands/status to the Surface Launched Advanced Medium Range Air-to-Air Missile (SLAMRAAM) air defense system. A small portion of RDTE funding is dedicated to SLAMRAAM C2 threshold requirements. FAAD C2 is the first system to digitize for Army Transformation in the First Digitized Division (FDD), III (Digitized) Corps, the Joint Contingency Force (JCF) and the STRYKER Brigade Combat Teams (SBCTs). The FAAD C2 netted and distributed system architecture has been briefed as the basis for a potential BM/C4I Future Combat Ssystem (FCS).

AMDPCS is the backbone of Army Air Defense, operating through the Battle Management/Command, Control, Communications, Computers, and Intelligence (BM/C4I), and the common tactical and operational air picture, (2) Air Defense System Integrator (ADSI), a communications data link processor and display system, provides real time joint airspace situational awareness and fire direction Command and Control (C2) for AMD, and (3) shelter configurations using computer hardware and tactical communications equipment (e.g., JTIDS 2M Terminals, Commanders Tactical Terminal). The AMDPCS enables Active, Passive and Attack Operations coordination and a correlated single integrated air picture (SIAP) to Army AMD and Joint Forces. The AMDPCS provides the Army Battle Command System (ABCS) architecture and the Army AMD Task Forces (AMDTF) with Joint BM/C4I capability and the Army component of

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5 - System Development and Demonstration

PE NUMBER AND TITLE

0604741A - Air Defense Command, Control and Intel - Eng

interoperable Joint Theater Air and Missile Defense (JTAMD) BM/C4I.

In addition, the AMDWS supports the Surface Launched Advanced Medium Range Air-to-Air Missile (SLAMRAAM) air defense system by providing an automated defense planning capability for deployed units.

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	27376	29948	21308
Current Budget (FY 2006/2007 PB)	26343	29012	21028
Total Adjustments	-1033	-936	-280
Net of Program/Database Changes			
Congressional Program Reductions	-345		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-688		
Adjustments to Budget Years		-936	-280

FY06/07 funding moved to higher Army requirements

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BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intel - Eng				PROJECT 126		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
126 FAAD C2 ED	14827	13738	15799	10114	9881	9894	11858	15612	Continuing	0

A. Mission Description and Budget Item Justification: The Forward Area Air Defense Command and Control (FAAD C2) System provides continuously tailored situational awareness and situational understanding of the battlespace (including data on threat aircraft, cruise missiles and unmanned aerial vehicles) to support the air defense planning and decision process at various levels of command. The FAAD C2 mission is to collect, digitally process and disseminate real time target cueing and tracking information, the common tactical air picture, and C2 information to all Maneuver Air and Missile Defense (MAMD) weapons (e.g. - Avenger, Man-Portable Air Defense System, joint and combined arms systems) and to the Air Defense Airspace Management (ADAM) Cells that are being fielded to Brigade Combat Teams (BCTs), UAs, and UExs. Dynamic FAAD C2 software provides this mission capability by integrating FAAD C2 engagement operations software with the Multifunctional Information Distribution System (MIDS), the Joint Tactical Terminal (JTT), the Global Positioning System (GPS), the Airborne Warning and Control Systems (AWACS), the evolving Joint Tactical Radio System (JTRS). FAAD C2 inputs data to the Army Battle Command System (ABCS) via the Air and Missile Defense Workstation (AMDWS), and is expanding linkage to the Net-centric architecture. By integrating with ABCS, FAAD C2 is able to provide the detailed local air picture to higher echelon Army Air Defense, joint and interagency forces. The FAAD C2 system provides joint C2 interoperability and horizontal integration with PATRIOT, THAAD, MEADS, and JLENS by fusing sensor data to create a scalable and filterable single integrated air picture (SIAP) for joint services and the common tactical air picture at the UEx and UA. The FAAD C2 software is also able to provide target data and engagement commands/status to the Surface Launched Advanced Medium Range Air-to-Air Missile (SLAMRAAM) air defense system. The netted and distributed system architecture fielded with FAAD has been briefed as the basis for a potential BM/C4I Future Combat System (FCS). FAAD C2 also provides the interoperability link to multinational air defense forces IAW the Joint US/NATO Low Level Air Picture Interface (LLAPI).

FAAD C2 software, which has been integrated into the NORAD Architecture, is the principal Army air defense system deployed in support of the Homeland Security Program in the National Capital Region and other locations. In support of the Global War on Terrorism, FAAD C2 systems are in MAMD units and ADAM Cells deployed to Iraq and Afghanistan. These FAAD systems are critical in providing the local air picture to supported units and higher headquarters. FAAD C2 is also the integrating software that provides target track data and weapon system control for the initial Counter-Rocket, Artillery and Mortar (C-RAM) capability being deployed to Iraq in FY05.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intel - Eng

PROJECT
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Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Continue FAAD C2 Block III software development and engineering, including external Beyond Visual Range Engagements (BVRE), SINCGARS Data Looping, IFF/SIF Mode 5/S development, and SIAP Block 0 & 1 implementation. Software is being fielded to active and reserve component MAMB Battalions, to units in support of Homeland Defense, and to ADAM Cells deployed in support of OIF/OEF.	14827	8257	9528	813
Support of FAAD C2 software development for the new AMD Composite Battalions; unique software enhancements in support of Homeland Defense, and security accreditation upgrades. As a complementary Future Combat System (FCS), continue FAADC2 integration and interoperability with FCS Mission Applications. Consistent with DA and DoD Guidance, migrate FAAD C2 Engagement Operations software modules to the Joint Command and Control (JC2) Mission Capability Packages (MCPs).	0	5481	6271	3151
Initiate FAAD C2 Block IV software development and engineering, including Objective BVRE capabilities (e.g. Forward Pass, Engage on Remote), Air Battle Management Control Measures, training software upgrades, further integration and improvement for AMD Composite Battalion engagement operations and interoperability (component of Air and Space Missile Defense System of Systems.)	0	0	0	6150
Totals	14827	13738	15799	10114

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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PROJECT
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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA 2, AD5050 - FAAD C2	24645	12615	26108	31655	28305	30762	32846	34903	Continuing	Continuing
Spares (BS9702) - FAAD C2	734	716	877	895	0	0	0	0	Continuing	Continuing

C. Acquisition Strategy: The acquisition strategy relies heavily on non-development items (NDI) and evolutionary software development to rapidly meet the demands of air defense battle management/command, control, communications, computers, and intelligence (BM/C4I) requirements, and to keep pace with automated information technologies. The concept of evolutionary software development is being followed and will be accomplished in Blocks I, II, III and IV. Blocks I and II have been completed. FAAD C2 Block III is currently being developed for both the Army's Active and Reserve components.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intel
- Eng

PROJECT
126

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Northrop Grumman/TRW, BLK I	C/CPIF	Carson, CA	176461	0		0		0		0	176461	0
b . Northrop Grumman/TRW, BLK II	SS/CPIF	Carson, CA	32206	0		0		0		0	32206	0
c . Northrop Grumman/TRW, BLK III	SS/CPIF	Carson, CA	80975	9535	1Q	10963	1Q	813	1Q	Continue	102286	0
d . Northrop Grumman/TRW, BLK IV	SS/CPIF	Carson, CA	0	0		0		5794	1Q	Continue	5794	0
e . Northrop Grumman/TRW	SS/T&M	Carson, CA	7517	321	1Q	357	1Q	234	1Q	Continue	Continue	0
f . Program Management Administration	MIPR	Various	27219	2301	2Q	2637	2Q	2033	2Q	Continue	34190	0
g . Sentinel GBS	MIPR	Huntsville, AL	3791	0		0		0		0	3791	0
h . JTIDS	MIPR	Ft. Monmouth, NJ	6000	0		0		0		Continue	Continue	0
i . ABCS SE&I	MIPR	Ft Monmouth, NJ	346	0		0		0		0	346	0
j . Software Engineering	Various	Various	13799	1294	1-4Q	1523		1018		Continue	17634	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intel
- Eng

PROJECT
126

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			348314	13451		15480		9892		Continue	Continue	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ADATD	MIPR	Ft Bliss, TX	10166	91		100		81		Continue	Continue	0
b . RTTC	MIPR	WSMR, NM	2710	196		219		141		Continue	Continue	0
Subtotal:			12876	287		319		222		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			361190	13738		15799		10114		Continue	Continue	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604741A - Air Defense Command, Control and Intel
 - Eng**

PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
FAAD Blk III C/A & MR (1) UMR, (2) Materiel Release, (3) Materiel Release Block III Software Deliveries (4) SW Delivery, (5) SW Delivery, (6) SW Delivery Block III Test LUT, JRF V5.4a Test, V5.4b Test, SCT (7) TRR, (8) TRR FAAD C2 Block IV (9) Contract Award, (10) CDR SCT (11) Materiel Release C-RAM C-RAM Demo					1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
UMR SBCT1 V5.4a SW Drop ETRAC LUT V5.4a Thread Test TRR V5.4a C-RAM Demo					V5.2 CMR V5.4b SW Delivery Joint Red Flag V5.4b Thread Test TRR V5.4b C-RAM Demo	MR V5.4 SCT V5.4b	SW Delivery	C/A=Contract Award Blk=Block MR=Materiel Release UMR=Urgent MR CMR=Conditional MR SW=Software LUT=Limited User Test NET=New Equipment Training	CDR SCT V6.0 (Blk IV)	MR V6.0																										

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intel
- Eng

PROJECT
126

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Materiel Releases	4Q	1Q		4Q				1Q
Software Deliveries		2Q	3Q			4Q		
Testing	4Q	1-3Q	3Q			3Q		
Test Readiness Reviews		2Q	3Q					
Critical Design Review					4Q			
Contract Award				4Q				
C-RAM Demo/Test		1Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intel - Eng				PROJECT 146		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
146 AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)	13147	12605	13213	10914	11165	10426	11685	14924	Continuing	0

A. Mission Description and Budget Item Justification: The Air and Missile Defense Planning and Control System (AMDPCS) is an Army Objective Force System with Homeland Defense capabilities that provides the integration of Air and Missile Defense (AMD) operations at Air Defense Artillery (ADA) brigades, Army Air and Missile Defense Commands (AAMDC), and Air Defense and Airspace Management (ADAM) Cells at the UExs and UAs. The development of ADAM Cells is essential in fulfilling the Army's Modularity requirement, and provides air defense interoperability with Joint, multinational and coalition forces. AMDPCS components are also vital to the transformation of ADA units and the activation of the AMD Composite Battalions. AMDPCS, which is the backbone of the Army Air Defense through the Battle Management/Command, Control, Communications, Computers, and Intelligence (BM/C4I) capability, has three major components:

- (1) Air and Missile Defense Workstation (AMDWS), an automated mission (defense and staff) planning and situational awareness tool that provides the common tactical and operational air picture. AMDWS provides the Army Battle Command System (ABCS) with the air component of the Common Tactical Picture at the UA, UEx and UEy, and is the Net-centric interface for all components of the AMD force into ABCS. AMDWS also provides the interoperability link to multinational air defense forces IAW Annex C to a Joint US/NATO Air Defense Agreement;
- (2) Air Defense System Integrator (ADSI), a communications data link processor and display system that provides near-real time joint airspace situational awareness and fire direction command and control for Air and Missile Defense (AMD); and
- (3) Army Air Defense shelter configurations using automated data processing equipment, tactical communications (e.g. Multifunctional Information Distribution System (MIDS), Joint Tactical Terminal (JTT)), Common Hardware Systems, standard vehicles and tactical power). The AMDPCS provides AMD unit commanders and staffs, and the AMD staffs at the UExs and UAs, with the capabilities to plan missions, direct forces, and control the airspace.

In support of the Global War on Terrorism (GWOT), AMDWS and ADSIs are vital components of the AMDPCS shelter systems fielded to ADA units, the AAMDC and ADAM Cells that have deployed to Iraq and Afghanistan. In addition, these components have also been integrated into non-ADA higher headquarters such as the Coalition Forces Land Component Command (CFLCC). AMDWS is a critical component in the integration and fielding of a Counter-Rocket, Artillery and Mortar (C-RAM) capability to Operating Bases in Iraq and elsewhere. In support of Homeland Defense missions, the AMDWS has been integrated as the Force Operations component into the Joint Service/Air Force architecture. These AMDPCS systems provide the common tactical air picture, a major component of the Common Operating Picture (COP), and are critical to the development and planning of offensive and defensive operations.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intel - Eng

PROJECT
146

Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Continue AMDWS development in support of ABCS 6.4 operational testing and release. Complete AMDWS software engineering and development consistent with Software Block II and III requirements, evolving the air and missile defense planning and control requirements to a net-centric environment, and fulfilling the air defense force operations capabilities identified in the AMD "1 to n" requirements list. Continue AMDWS software development and rehost onto emerging light/laptop common hardware computers. Complete integration of the PATRIOT Air Defense system Tactical Planner, and initiate development of SLAMRAAM and MEADS Tactical Planners. Continue supporting the Air Force Joint Tactical Air and Missile Defense (JTAMD), and support the evolving development of the Force Operations portion of the Air and Space Missile Defense (ASMD) System of Systems. As a complementary Future Combat System (FCS), initiate AMDWS integration and interoperability with FCS command and control system development. Begin migration of AMDWS software modules to the Joint Command and Control (JC2) Mission Capability Packages (MCPs).	13147	6948	7410	6179
Continue ADSI software engineering and development in software versions 13 and 14, including JRE 3011 implementation, development of a Common Message Format Interface Implementation, the Single Integrated Air Picture (SAIP), JTRS interfaces, and evolution to a net-centric environment.	0	1814	1873	1543
Continue software system certification testing, accreditation, and approval of Authority-to-Operate for the various software systems; continue Army and Joint integration and interoperability assessments.	0	1077	1125	889
Continue engineering, development, test and evaluation of the AMDPCS shelter subsystem Objective configurations; continue evaluation and definitization of the AMDPCS tactical communications, data processing and vehicle/shelter/power generation/environmental system block upgrade program for fielded systems.	0	2766	2805	2303
ABCS SE&I	0	0	0	0
Totals	13147	12605	13213	10914

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA, AD 5070 - AMDPCS	8613	6272	3668	10934	11143	16289	65078	14392	Continuing	Continuing

C. Acquisition Strategy: The acquisition strategy relies on non-development items (NDI) and evolutionary software development to rapidly meet the demands of air defense battle management command, control, communications, computers, and intelligence (BM/C4I) requirements and to keep pace with automated information technologies. The concept of evolutionary software development will be accomplished in a series of AMDWS and ADSI Block releases and upgrades. AMDPCS is being developed for both the Army's Active and Reserve components.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intel
- Eng

PROJECT
146

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Northrop Grumman/TRW	SS/CPIF	Huntsville, AL	27557	6756	1Q	7108	1Q	5860	1Q	Continue	47281	0
b . APC, ADSI	SS/CPIF	Austin, TX	4626	379	1Q	361	1Q	274	1Q	Continue	Continue	0
c . Program Management Administration	Various	Various	14879	3954	2Q	4095	2Q	3603	2Q	Continue	26531	0
d . ABCS SE&I	MIPR	Ft Monmouth, NJ	619	0		0		0		0	619	0
e . Software Engineering	Various	Various	3321	1253	2-3Q	1392	2-3Q	1040	2-3Q	Continue	7006	0
Subtotal:			51002	12342		12956		10777		Continue	Continue	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intel
- Eng

PROJECT
146

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Certification	MIPR	JITC, Ft Huachuca, AZ	432	85	1Q	81	1Q	49	1Q	Continue	Continue	0
b . Interoperability Assessment	MIPR	Various	618	178	1Q	176	1Q	88	1Q	Continue	Continue	0
Subtotal:			1050	263		257		137		Continue	Continue	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			52052	12605		13213		10914		Continue	Continue	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intel - Eng

PROJECT
146

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
AMDWS Materiel Release & C/As (1) C/A, (2) C/A (3) MR, (4) MR, (5) MR AMDWS Software Deliveries & Certs (6) SW Build, (7) SW Drop, (8) SW Drop, (9) SW Drop (10) V1.1D, (11) V6.4 B6, (12) SW Cert, (13) SW Cert AMDWS Tests UFL, 6.4 IAIC Test, 6.4 OT 6.4 Test, JRF ADSI V12 SLT, JITC Cert/SW Drop, JITC, SW Cert, SW, SW AMDPCS Sheltered Systems (14) MS C C-RAM Demo FCS Mission Applications (MAs) JC2 Mission Capability Packages (MCPs)	Block III C/A ▲1 V6.3 CMR ▲3 V6.4 B5 ▲6 V1.1D ▲10 V6.4 B6 ▲11				V6.4 UMR ▲4 V6.4 UMR ▲5 SW Drop ▲7 Software Certification ▲12				Block IV C/A ▲2 V6.4 CMR ▲5 SW Drop ▲8 SW Certification ▲13				SW Drop ▲9				B = Build C/A = Contract Award JITC = Joint Interoperability Test Command MR = Materiel Release CMR = Conditional MR UMR = Urgent MR SLT = Service Level Test SW = Software UFL = Ulchi Focus Lens JRF = Joint Red Flag															
6.4 IAIC UFL ■ 6.4 Baseline ■ JITC Cert ■ SLT ■ JIT 04-03 ■					ABCS 6.4 Op Eval ■ JRF ■ AMDPCS MS C ▲14 C-RAM Demo ■				SW Certification ■ Software Release ■				SW Certification ■ Software Release ■								Migration to FCS MAs ■ Migration to JC2 MCPs ■											

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intel
- Eng

PROJECT
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Materiel Release-AMDWS		2Q	1-2Q					
Software Deliveries-AMDWS	1-3Q	4Q		4Q		4Q		
Software Certification-AMDWS			2Q		2Q			
Testing-AMDWS	3-4Q	1-3Q						
Testing ADSI	1-3Q		4Q		4Q			
Software Certification-ADSI	2Q			1-3Q		1-3Q		
Software Drops-ADSI	2Q		3Q		3Q			
Contract Awards		2Q	4Q					
MS C- AMDPCS		4Q						
C-RAM		1Q						
Mission Applications						1Q	4Q	
Mission Capability Packages							1Q	4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	16475	41153	40572	38818	31446	26888	23317	24116	Continuing	Continuing
361 INTELLIGENCE SIMULATION SYSTEMS	2202	1155	5909	6948	6029	5549	4111	4698	Continuing	Continuing
362 WARFIGHTER SIMULATION	14273	39998	34663	31870	25417	21339	19206	19418	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element funds the development of constructive and wargame simulations used to realistically train commanders and their battlestaffs on today's complex battlefield conditions. Project D361 funds the development of the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) that provides Warfighting Commanders at all echelons the ability to train with Intelligence, Surveillance, and Reconnaissance (ISR) products based on realistic ISR assets, people (including the maneuver commander, G-2, G-3, collection manager, analyst/operator) and processes. IEWTPT provides embedded training capability for Future Combat Systems (FCS) ISR systems. IEWTPT will interface/stimulate ISR systems including Tactical Unmanned Aerial Vehicle (TUAV), Joint Surveillance Target Attack Radar System-Common Ground Station (JSTARS-CGS), Aerial Common Sensor (ACS), Tactical Exploitation System/Distributed Tactical Exploitation System (TES/DTES), Guardrail, Counter Intelligence/Human Intelligence Management Systems (CHIMS), Prophet and Distributed Common Ground Station-Army (DCGS-A). IEWTPT is the only Army Simulation System supporting ISR training from the Warfighter to the Military ISR Analyst/System Operator. The FY06 and FY07 funding continues product improvements with annual spiral releases of the IEWTPT. Project 362, Warfighters' Simulation (WARSIM) develops the Army's premier wargame simulation for training leaders and Battle Staffs at Brigade, Division, Corps, and echelons above Corps. WARSIM will provide functionality not currently available (digital operations, stability and support operations, information ops), link to unit organizational Command, Control, Communications, Computers and Integration (C4I) equipment, improve exercise generation and after-action reporting. WARSIM will interoperate with One Semi Automated Forces (OneSAF) and other simulations as an integral part of Army Constructive Training Federation (ACTF), so that a warfighter training exercise can represent in simulation all Army echelons and in a Joint environment. ACTF pulls together current constructive simulation systems and future constructive simulations and uses a comprehensive strategy to ensure interoperability among all of those systems. This strategy will allow ACTF to meet current and future user needs. ACTF leverages the best pieces of current systems to meet current training needs and evolves to meet the training needs of the future force.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	42869	33576	24750
Current Budget (FY 2006/2007 PB)	41153	40572	38818
Total Adjustments	-1716	6996	14068
Net of Program/Database Changes			
Congressional Program Reductions	-663		
Congressional Rescissions			
Congressional Increases	39		
Reprogrammings			
SBIR/STTR Transfer	-1092		
Adjustments to Budget Years		6996	14068

FY06 increase (\$6996K) and FY07 increase (\$14068K) support the Intelligence Electronic Warfare Tactical Proficiency Trainer and Warfighters' Simulation.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT				PROJECT 361		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
361 INTELLIGENCE SIMULATION SYSTEMS	2202	1155	5909	6948	6029	5549	4111	4698	Continuing	Continuing

A. Mission Description and Budget Item Justification: Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) provides Warfighting Commanders at all echelons the ability to train with Intelligence, Surveillance, and Reconnaissance (ISR) products based on realistic ISR assets, people (including the maneuver commander, G-2, G-3, collection manager, analyst/operator) and processes. IEWTPT provides embedded training capability for Future Combat Systems (FCS) ISR systems. IEWTPT interoperates with the Army's constructive simulation training systems and actual operator level field equipment identified as Target Signature Arrays. IEWTPT will interface/stimulate ISR systems including Tactical Unmanned Aerial Vehicle (TUAV), Joint Surveillance Target Attack Radar System-Common Ground Station (JSTARS-CGS), Aerial Common Sensor (ACS), Tactical Exploitation System/Distributed Tactical Exploitation System (TES/DTES), Guardrail, Counter Intelligence/Human Intelligence Management Systems (CHIMS), Prophet and Distributed Common Ground Station-Army (DCGS-A). IEWTPT is the only Army Simulation System supporting ISR training from the Warfighter to the Military ISR Analyst/System Operator. The FY06 and FY07 funding continues product improvements with annual spiral releases in the 4th Quarter of each year of the IEWTPT.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
FY04-FY07: Continues IEWTPT development, systems engineering support, documentation, security accreditation, and improvements with interoperability testing with system Target Signature Arrays (TSA) and constructive simulations.	1547	967	5088	6102
FY04-FY07: Continues IEWTPT Program Management support	221	188	394	413
FY04 and FY06-FY07: Continues IEWTPT Test planning and execution.	434	0	427	433
Totals	2202	1155	5909	6948

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604742A - CONSTRUCTIVE SIMULATION
 SYSTEMS DEVELOPMENT**

PROJECT
361

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA3, Appropriation NA0102, NSTD Intelligence	0	0	3716	4895	3961	1262	1282	2147	Continuing	Continuing

C. Acquisition Strategy: Competitive development based on performance specifications.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT

PROJECT
361

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IEWTPT System Dev & Demo	CPIF	Gen Dynamics C4 Systems, Orlando, FL	13790	637	1-3Q	4694	1-3Q	5561	1-3Q	Continue	Continue	Continue
b . IEWTPT System Dev & Demo	multiple	various	0	330	1-4Q	394	1-4Q	541	1-4Q	Continue	Continue	Continue
Subtotal:			13790	967		5088		6102		Continue	Continue	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IEWTPT Engineering & Technical Support	Multiple	Various	1943	0		0		0		0	1943	1943
Subtotal:			1943	0		0		0		0	1943	1943

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT

PROJECT
361

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IEWTPT TEMP Support	Various	Multiple	319	0		0		0		0	319	319
b . IEWTPT Operational Test Event Support	Various	Multiple	359	0		0		0		0	359	359
c . Test Engineer Support	various	Multiple	324	0		427	1-4Q	433	1-4Q	Continue	Continue	Continue
Subtotal:			1002	0		427		433		Continue	Continue	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IEWTPT Program Management	Various	Multiple	860	188	1-4Q	394	1-4Q	413	1-4Q	Continue	Continue	Continue
Subtotal:			860	188		394		413		Continue	Continue	Continue

Project Total Cost:			17595	1155		5909		6948		Continue	Continue	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT

PROJECT
361

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TCC Development /Integration/Improvements	[Redacted]																															
Operational Test Event	[Redacted]																															
(1) MS C	[Redacted]																															
MR/IOC Ft. Huachuca	[Redacted]																															
Annual Security Accreditation & Test Event (TE) Dec/Jan each year	[Redacted]																															
Production Contract Award (option awarded Jan each year starting in FY05)	[Redacted]																															
Field - Ft. Hood, TX	[Redacted]																															
Field - Ft. Bragg, NC and Ft. Lewis, WA	[Redacted]																															
Field - Ft. Irwin, CA (NTC) and Ft. Polk, LA (JRTC)	[Redacted]																															
Field V Corps, GE & CMTC, GE	[Redacted]																															
Technology Refresh	[Redacted]																															
Annual Spiral Release	[Redacted]																															

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE **PROJECT**
0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT **361**

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
IEWTPT CONTRACT AWARD	1-4Q	1-3Q	1-3Q	1-3Q	1-3Q	1-3Q	1-3Q	1-3Q
IEWTPT Operational Test	3Q							
IEWTPT Milestone C		1Q						
IEWTPT Annual spiral releases		4Q	4Q	4Q	4Q	4Q		
IEWTPT Material Release		1Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT					PROJECT 362		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
362 WARFIGHTER SIMULATION	14273	39998	34663	31870	25417	21339	19206	19418	Continuing	Continuing

A. Mission Description and Budget Item Justification: This Project funds the development of Warfighter Simulation (WARSIM), the Army's premier wargaming simulation for training leaders and Battle Staffs at Division, Corps, and echelons above Corps. WARSIM will interoperate with One Semi Automated Forces (OneSAF) and other simulations as an integral part of Army Constructive Training Federation (ACTF), so that a warfighter training exercise can represent in simulation all Army echelons and in a joint environment. WARSIM will provide functionality not currently available (digital operations, stability and support operations, information ops), link to unit organic Command, Control, Communications, Computers and Intelligence equipment, improve exercise generation and after-action reporting. The FY06 and FY07 funding continues the development of the Army training system, integration and system evaluation. ACTF leverages the best pieces of current systems to meet current training needs and evolves to meet the training needs of the future force.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Verify and Validate ACTF software models	1342	3200	2773	2550
Continue integration of WARSIM and ACTF components for interoperability.	8433	23998	20798	19122
Develop and integrate user interface enhancements for Army training applications.	2811	8000	6932	6374
Develop and evaluate system performance and conduct system test events.	1687	4800	4160	3824
Totals	14273	39998	34663	31870

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Competitive development based on performance specifications.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT

PROJECT
362

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . WARSIM Development of Army Training System	C/CPAF	Lockheed Martin Info Systems, Orlando, FL	18462	23712	1-3Q	17717	1-3Q	16097	1-3Q	Continue	Continue	Continue
b . Integration of ACTF	Multiple	Various	1281	7199	1Q	9246	1Q	6957	1Q	Continue	Continue	Continue
Subtotal:			19743	30911		26963		23054		Continue	Continue	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering & Tech Spt	Multiple	Various	5164	445	1-4Q	420	1-4Q	473	1-4Q	Continue	Continue	Continue
Subtotal:			5164	445		420		473		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT

PROJECT
362

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Verification, Validation and Accreditation	Multiple	Various	3409	2724	1-3Q	1951	1-3Q	3040	1-3Q	Continue	Continue	Continue
b . WARSIM System Evaluation and Test	Multiple	Various	7229	2207	1-3Q	1828	1-3Q	1940	1-3Q	Continue	Continue	Continue
Subtotal:			10638	4931		3779		4980		Continue	Continue	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	Multiple	Various	9493	3711	1-2Q	3501	1-2Q	3363	1-2Q	Continue	Continue	Continue
b . Cost Analysis Support	T&M	Northrup Grumman-TASC, Orlando FL	414	0		0		0		0	414	493
Subtotal:			9907	3711		3501		3363		Continue	Continue	Continue

Project Total Cost:			45452	39998		34663		31870		Continue	Continue	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT

PROJECT
362

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) Army Constructive Training Federation (ACTF) V1	1																															
(2) ACTF V2									2																							
(3) WARSIM Initial Capabilities Event									3																							
(4) WARSIM integrated into ACTF Version 3, (5) ACTF V3, (6) ACTF V4													5				6															
(7) ACTF V5																	7															
(8) ACTF V6																					8											
(9) ACTF V7																									9							
(10) ACTF V8																													10			

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE **PROJECT**
0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT **362**

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Award WARSIM System Development Contract	1-3Q	1-3Q	1-3Q	1-3Q	1-3Q	1-3Q	1-3Q	1-3Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604746A - Automatic Test Equipment Development

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	11777	8748	54	7912	4909	11605	11824	11963	Continuing	Continuing
L59 DIAGNOST/EXPERT SYS DE	10765	7661	54	5268	1449	8054	8217	8282	Continuing	Continuing
L65 TEST EQUIPMENT DEVELOPMENT	1012	1087	0	2644	3460	3551	3607	3681	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element (PE) provides for development and testing of general-purpose test equipment; advanced technology test and measurement techniques, standards, and systems; and state-of-the-art diagnostics and prognostics technology, software, and systems to support the increasingly complex electronic components of the Army's new and upgraded weapon systems. It focuses on implementation of commercial test and diagnostic technologies across multiple weapon platforms to minimize the cost of troubleshooting and maintenance of Army equipment in the field.

This PE funds development and evolution of general-purpose automatic test and diagnostic equipment and the enhancements required to overcome deficiencies and voids in organic test and diagnostic capabilities and to ensure the operational readiness, accuracy, effectiveness, and safety of Army combat and combat support systems. Modular, reconfigurable automatic and semi-automatic systems are developed under this program to satisfy weapon system test and diagnostics requirements. The Next Generation Automatic Test System (NGATS), also known as the Base Shop Test Facility (BSTF) (V)6, currently under development will provide state-of-the-art test and diagnostic capabilities to support current and future weapon systems. The NGATS will replace several aging automatic test systems which are becoming prohibitively expensive to operate and maintain. This program also provides for continued development and improvement of calibration and measurement equipment with emphasis on incorporation of digital electronics and tailoring of configurations to improve deployability, mobility, and survivability of the support equipment and to reduce the logistics burdens associated with maintaining Army combat systems in wartime and contingency operations. Artificial intelligence and anticipatory maintenance applications are being developed to support the integration of self-diagnostic capabilities in Army weapons and support systems. The goal of these efforts is to reduce logistics burdens and improve readiness by minimizing the need for external testers and improving the troubleshooting abilities of soldiers in the field.

The Army's participation in the Agile Rapid Global Combat Support (ARGCS) Advanced Concept Technology Demonstration (ACTD) is being funded under this PE. The ARGCS ACTD is developing a common automatic test systems architecture that will enhance portability of all Services' test program sets and reduce Defense expenditures for test equipment and personnel.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	4713	7514	7893
Current Budget (FY 2006/2007 PB)	8748	54	7912
Total Adjustments	4035	-7460	19
Net of Program/Database Changes			
Congressional Program Reductions	-128		
Congressional Rescissions			
Congressional Increases	4400		
Reprogrammings			
SBIR/STTR Transfer	-237		
Adjustments to Budget Years		-7460	19

FY06 - Funds realigned (\$7.460M) to higher Army priority requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604746A - Automatic Test Equipment Development				PROJECT L59		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L59 DIAGNOST/EXPERT SYS DE	10765	7661	54	5268	1449	8054	8217	8282	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project funds development of and system enhancements for the Next Generation Automatic Test System (NGATS). The NGATS, also known as the Base Shop Test Facility (BSTF) (V)6, is a general-purpose automatic test system that will provide test and diagnostic capabilities required to support current and future weapons and combat support systems and will facilitate retirement of aging and obsolete test equipment that is imposing increasing logistics and operations and support cost burdens. This project provides for continuing efforts to upgrade and improve general-purpose automatic test equipment to satisfy test and diagnostic requirements of the Army's new and upgraded weapon systems; development and adaptation of automatic test equipment required to overcome existing deficiencies and voids in organic test and diagnostic capabilities; development and testing of common procedures utilizing existing test program sets and software applications; and market surveys of commercially available test equipment, methods, and procedures to determine applicability to Army requirements. The test and diagnostic systems and procedures developed under this project are essential for ensuring the operational readiness, accuracy, and effectiveness of the Army's warfighting systems. This project also funds the Army's participation in the Agile Rapid Global Combat Support (ARGCS) Advanced Concept Technology Demonstration (ACTD) which is developing a common automatic test systems architecture that will enhance portability of all Services' test program sets and reduce Defense expenditures for test equipment and personnel.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Develop and test a rapidly deployable automatic test system	10401	5069	54	3907
Provide technical input and evaluate proposals/specifications for ARGCS ACTD	250	500	0	500
Develop and evaluate new software applications for the IFTE	114	2092	0	861
Totals	10765	7661	54	5268

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development

PROJECT
L59

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA3, MB4000, Integrated Family of Test Equipment (IFTE)	28519	10613	21605	48300	80447	88037	77890	85086	Continuing	Continuing

C. Acquisition Strategy: This developmental project consists of cooperative in-house and competitive and sole-source contractual actions. When the necessary expertise and capability are available within the Department of Defense, services required for the individual development projects are ordered from the government source; otherwise commercial contracts are used. Equipment required for developmental projects is obtained by contract from the commercial supplier. Developmental efforts for the Next Generation Automatic Test System are being completed under a sole-source contract awarded to the prime contractor for the Integrated Family of Test Equipment off-platform testers.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development **PROJECT L59**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prototype Development	SS/CPFF	Northrop Grumman, Rolling Meadows, IL	9420	2092	2Q	54	2Q	974	2Q	Continue	Continue	Continue
b . Hardware Development	Various	Various	45954	1046	1-4Q	0		861	2Q	Continue	Continue	Continue
c . Software Development - IFTE	Various	Various	2147	2092	2Q	0		861	2Q	Continue	Continue	Continue
Subtotal:			57521	5230		54		2696		Continue	Continue	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management		Various	41250	1810	1-4Q	0		1398	1-4Q	Continue	Continue	Continue
b . Other Direct		Various	888	505	1-4Q	0		446	1-4Q	Continue	Continue	Continue
Subtotal:			42138	2315		0		1844		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development **PROJECT L59**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Operational Testing	Various	Various	2814	0		0		200	2Q	Continue	Continue	Continue
b . Developmental Testing	Various	Various	481	116	2Q	0		528	2Q	Continue	Continue	Continue
Subtotal:			3295	116		0		728		Continue	Continue	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			102954	7661		54		5268		Continue	Continue	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development PROJECT
L59

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
BSTF (V) 6 PROTOTYPE DEVELOPMENT	[Red]				[Red]				[Red]				[Red]				[Red]				[Red]				[Red]							
BSTF (V) 6 SYSTEM DEVELOPMENT AND DEMONSTRATION (SDD), CONTINUED IN FY07	[Red]				[Red]				[Red]				[Red]				[Red]				[Red]				[Red]							
BSTF (V) 6 TESTING	[Red]				[Red]				[Red]				[Red]				[Red]				[Red]				[Red]							
BSTF (V) 6 TPS COMPATIBILITY TESTING, CONTINUED IN FY07	[Red]				[Red]				[Red]				[Red]				[Red]				[Red]				[Red]							

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE **PROJECT**
0604746A - Automatic Test Equipment Development **L59**

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
BSTF (V)6 PROTOTYPE DEVELOPMENT	1-4Q	1-4Q	1-4Q	1-4Q				
BSTF (V)6 SYSTEM DEV AND DEMO (SDD)	1-4Q	1-4Q		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
BSTF (V)6 TESTING					4Q	1-4Q		
BSTF (V)6 TPS COMPATIBILITY TESTING	1-4Q	1-4Q		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604746A - Automatic Test Equipment Development				PROJECT L65		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L65 TEST EQUIPMENT DEVELOPMENT	1012	1087	0	2644	3460	3551	3607	3681	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports development and demonstration of state-of-the-art general-purpose test, measurement, and diagnostic equipment (TMDE), and it provides for feasibility studies, market research, inventory analyses, bid sample testing, and prototyping to support TMDE acquisitions. Primary efforts under this project include improvement of test and measurement equipment performance envelopes via preplanned product improvements (P3I), development and validation of test procedures, evaluation of commercial and nondevelopmental TMDE with potential to meet weapon system maintenance requirements, and development and evaluation of advanced technology and higher reliability electronic test equipment. Preplanned product improvements are underway to current test and measurement systems to overcome deficiencies and voids in existing organic capabilities and to ensure the operational readiness, accuracy, effectiveness, and safety of Army weapons and combat support systems. These improvements will employ reconfigurable open electronics architecture and computer-based instrumentation wherever feasible and will be focused on reducing test equipment footprints to improve deployability and mobility in the area of operations.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Develop hardware via preplanned product improvements to enhance TMDE systems' performance capabilities.	270	236	0	541
Test and integrate hardware developed for preplanned product improvements.	130	320	0	733
Develop, evaluate, and integrate test and measurement equipment.	462	361	0	980
Develop and evaluate test and calibration procedures.	50	70	0	160
Perform market research and evaluation of commercial equipment and develop performance specifications for acquisitions.	100	100	0	230
Totals	1012	1087	0	2644

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604746A - Automatic Test Equipment
 Development**

PROJECT
L65

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA3, N10000, Calibration Sets Equipment	17525	0	0	2048	0	0	0	0	0	19573
OPA3, N11000, Test Equipment Modernization	14091	5194	471	12314	20903	21632	22764	21492	Continuing	Continuing

C. Acquisition Strategy: Projects are focused on use of commercial and nondevelopmental item technologies. When programmatic and engineering expertise and capability are available within the Department of Defense, services required for the individual development projects are acquired from the government source; otherwise, commercial services contracts are used to provide these capabilities. Equipment required for development projects is obtained from the commercial supplier. Candidate commercial equipment and nondevelopmental items are identified and evaluated through market research and government testing and evaluation.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development **PROJECT L65**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Systems Engineering	Various	Various	5573	375	1-2Q	0		1012	1-2Q	Continue	Continue	Continue
b . Procedures Development and Evaluation	Various	Various	1848	70	1-3Q	0		160	1-3Q	Continue	Continue	Continue
c . Government Engineering		Various	1196	145	1-4Q	0		332	1-4Q	Continue	Continue	Continue
Subtotal:			8617	590		0		1504		Continue	Continue	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Technical Support Services	Various	Various	638	100	2Q	0		229	2Q	Continue	Continue	Continue
Subtotal:			638	100		0		229		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development **PROJECT L65**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Testing	Various	Various	802	250	1-2Q	0		573	1-2Q	Continue	Continue	Continue
Subtotal:			802	250		0		573		Continue	Continue	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Personnel		Various	397	147	1-4Q	0		338	1-4Q	Continue	Continue	Continue
Subtotal:			397	147		0		338		Continue	Continue	Continue

Project Total Cost:			10454	1087		0		2644		Continue	Continue	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development PROJECT
L65

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
P3I - TMDE DEVELOPMENT																																
P3I - TESTING																																
P3I - INTEGRATION																																
TEST & MEASUREMENT EQUIPMENT - DEVELOPMENT, CONTINUED IN FY07																																
TEST & MEASUREMENT EQUIPMENT - TESTING, CONTINUED IN FY07																																
MARKET RESEARCH & EVAL OF COMMERCIAL EQUIPMENT; DEVELOPMENT OF PERF SPECS, CONTINUED IN FY07																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development **PROJECT L65**

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
CALSET 2000 Initial Operational Capability								
P3I - TMDE Development	1-3Q							
P3I - TESTING	1-4Q							
P3I - INTEGRATION	1-4Q							
Test and Measurement Equipment - Development		1-4Q		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Test and Measurement Equipment - Testing		1-4Q		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Market research and evaluation of commercial equipment; development of performance specifications	1-4Q	1-4Q		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

This is a continuing program of developmental activities to provide a means for satisfying test and diagnostic support requirements of Army weapons and support systems. It consists of a number of similar and related efforts, many of which do not entail distinct major milestones.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

**0604760A - Distributive Interactive Simulations (DIS) -
Engin**

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	24192	25477	22057	20945	21804	20712	15133	14913	Continuing	184011
C73 SYNTHETIC THEATER OF WAR	1293	1474	2190	2311	2384	2504	0	0	0	13950
C74 DEVEL SIMULATION TECH	3133	2352	1869	2235	4000	3951	849	448	0	18987
C77 INTERACTIVE SIMULATION	0	1246	1167	1190	1191	1194	1049	1074	0	8111
C78 ONE SEMI-AUTOMATED FORCES (ONESAF)	19766	20405	16831	15209	14229	13063	13235	13391	Continuing	142963

A. Mission Description and Budget Item Justification: This program element supports the Army's Advanced Simulation Program which enables operational readiness and supports the development of concepts and systems for Stryker and Future Force through the application of new simulation technology and techniques. This development and application of simulation technology will provide the tools to electronically link all subcomponents together in a manner that is transparent to the user. The synthetic environment is used to verify the scenarios, tactics/techniques and procedures, train testers on new hardware/software and conduct trial test runs before costly live field tests. The tools developed are available for reuse by developers and users of simulations throughout the Army. Project C73, Synthetic Theater of War-Army (STOW-A), provides innovative applications of current systems (live, virtual and constructive, Command, Control, Communications, Computers and Integration (C4I) Surveillance and Reconnaissance) to meet the urgent training requirements until availability of the next generation systems. STOW-A provides direct support to the Training, Exercises and Military Operations (TEMO) domain and the Advanced Concepts Requirements (ACR) domain. TEMO support derives from the demonstrated, low cost training capabilities that are provided by the toolkit. ACR support derives from the demonstrated capability of the kit to support battle lab and Army Warfighting Experiments (AWE) exercises and the development of Tactics, Techniques and Procedures (TTP) to support digital operations. Project C74 provides the resources necessary to perform the formally chartered mission of the Army's Simulation to C4ISR Interoperability Overarching Integrated Product Team (SIMCI OIPT). Project C77, Interactive Simulation, focuses on development of advanced simulation technology and tools to provide a reusable synthetic environment. This program will benefit the Army and DOD by providing standards for interoperability and software. The project also develops and enhances reconfigurable simulators which are used as Advanced Concepts Research Tools (ACRT) that will allow the battlelabs to accomplish their mission in support of the ACR, Research, Development and Acquisition (RDA), and TEMO domains. Project C78 develops the One Semi-Automated Forces (OneSAF) program that will combine and improve the functionality and improve behaviors of several current semi-automated forces to provide a single SAF for Army use in simulations.

The FY06 and FY07 STOW-A, C73 project line will continue the development of the software to link entity-based simulations and simulators to live tactical command and control systems and incorporate live simulations through the instrumented operating systems at the Combat Training Centers (CTCs). The FY06 and FY07 C74 Project line provides for Simulation-to-C4I interoperability (SIMCI) effort between the models and simulations and tactical C4I Systems. The FY06 and FY07 C78 Project funding will continue development of the software to provide OneSAF initial operational capability

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS) - Engin

functionality for Army evaluation and test.

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	26985	25860	24302
Current Budget (FY 2006/2007 PB)	25477	22057	20945
Total Adjustments	-1508	-3803	-3357
Net of Program/Database Changes			
Congressional Program Reductions	-3730		
Congressional Rescissions			
Congressional Increases	3000		
Reprogrammings			
SBIR/STTR Transfer	-778		
Adjustments to Budget Years		-3803	-3357

FY05 Congressional plus-up of \$1.7M for Commander's Rock Drill was transferred to Project C78 for execution in FY05. The FY05 Congressional plus-up of \$1.3M for Dynamic Re-Addressing and Management for Army was transferred to Project C77 for execution in FY05. Funds in FY06 (\$3.803M) and FY07 (\$3.357M) were realigned to higher priority programs.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604760A - Distributive Interactive Simulations (DIS) - Engin				PROJECT C73		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
C73 SYNTHETIC THEATER OF WAR	1293	1474	2190	2311	2384	2504	0	0	0	13950

A. Mission Description and Budget Item Justification: This program supports development and integration activities for the Synthetic Theater Of War-Army (STOW-A) Digital Sustainment Training (DST) software baseline that includes integration of fielded simulations and simulators with C4ISR systems. The development and integration to be accomplished will result in the capability to provide a seamless synthetic environment which will support digital training, test and mission rehearsal requirements. Specific efforts will include integration of a ground maneuver simulation into the Fire Support Simulation Tools (FSST) architecture and enhancement of the extant intelligence capability of FSST. Additionally, better representation and fidelity of other battlefield operating systems functionality will be gained. Development focuses on leveraging existing and emerging technology in a manner that produces substantial and continual improvements in combat readiness through the use of full spectrum, high fidelity, distributed simulation capability to support a large scale user-based exercise/experiment for JOINT VENTURE training and analytical needs. The Digital Battlefield Sustainment Trainer (DBST) program is a strategic agility program designed to meet the Operational Needs and other critical initiatives from the field. It will do this through the application of available current and emerging technologies. This project develops innovative applications of current systems (live, virtual, constructive, C4ISR) to meet urgent needs across the domains (e.g., training shortfalls) until the next-generation systems are available. The FY06 and FY07 funding will continue development of software and hardware interfaces to provide the required digital training capability to the field, helping to overcome unique digital training challenges that currently exist in the U.S. Army at the brigade level. DBST is part of the Army Constructive Training Federation (ACTF).

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY04-FY07: Continue development of integration software to link simulation with tactical command and control systems in support of Constructive Simulation. (Software Blocking)	585	336	249	260
FY05-FY07: Initiate development of software to support Joint Venture and Joint Contingency Force Simulation - Simulation Integration	0	280	386	410
FY04-FY07: Continue verification and validation of software integration to include DOD Information Technology Security Certification and Accreditation Process (DITSCAP).	345	140	170	202
FY04-FY07: Continue integration of Tactical Simulation Interface Unit in support of Army Constructive Training Federation	363	718	1385	1439
Totals	1293	1474	2190	2311

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604760A - Distributive Interactive Simulations
 (DIS) - Engin**

PROJECT
C73

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OMA, 121014	2889	2975	2761	2901	3048	3223	0	0	0	17797

C. Acquisition Strategy: Development is accomplished through delivery orders to competitively selected contractors based on performance specifications via PEO STRI Ominibus Contract (STOC) and General Services Administration (GSA) contracts.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS)
- Engin

PROJECT
C73

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Enhanced Tactical Simulation Interface Unit(ETSIU)/Enhanced Protocol Interface Unit(EPIU) Interface	C/CPFF	AEGIS, Orlando, FL	3173	256	1-2Q	1385	1-2Q	1439	1-2Q	Continue	Continue	Continue
b . STOW-A/DBST Software Development	Various	Multiple	6925	196	1-2Q	0		0		0	7121	7121
c . Architecture Development	C/CPIF	Multiple	939	177	1-2Q	0		0		0	1116	1116
Subtotal:			11037	629		1385		1439		Continue	Continue	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engr & Technical Support	Various	Multiple	2165	207	1Q	593	1-4Q	616	1-4Q	Continue	Continue	Continue
Subtotal:			2165	207		593		616		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS)
- Engin

PROJECT
C73

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DBST Integration, Evaluation and Test	C/CPFF	Multiple	1769	500	1-3Q	0		0		0	2269	2269
Subtotal:			1769	500		0		0		0	2269	2269

Remarks: Required for evaluation of annual version release. There are system tasks that are performed as part of the annual version release.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	Various	Multiple	3459	138	1-4Q	212	1-4Q	256	1-4Q	Continue	Continue	Continue
Subtotal:			3459	138		212		256		Continue	Continue	Continue

Project Total Cost:			18430	1474		2190		2311		Continue	Continue	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS) - Engin

PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
(1) Ft. Wainwright/Ft. Richardson	▲ 1 Ft. Wainwright/Ft. Richardson				▲ 2 Ft. Lewis				▲ 3 Hawaii - New SBCT																											
(2) Ft. Lewis - New SBCT																																				
(3) Hawaii - New SBCT																																				
DITSCAP	DITSCAP																																			
Battle Command Training Center (BCTC) Fielding General Support Team (GST)	MSTF Fielding																																			
Live-Virtual-Constructive Integration	LVC Integration																																			
DBST Baseline Validation (ACTF) & ACTF Constructive Training Migration	Validation (ACTF)																																			
Software Block 1 Test	Software Blocking																																			

Previous Fieldings:
 Ft Hood 4th QFY99
 Ft Irwin 3rd QFY00
 Ft Lewis 3rd QFY01
 2ID 2nd QFY01
 USAREUR 4th QFY01
 -- CMTC and 7th ATC
 Ft. Campbell 4th QFY02
 Ft. Stewart 4th QFY02
 JRTC 4th QFY02
 Ft. Drum 1st QFY03
 Ft. Bragg 2nd QFY03
 Ft. Carson 2nd QFY03

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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0604760A - Distributive Interactive Simulations (DIS)
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Award Engineering & Technical Support	1-2Q	1-2Q	1-2Q	1-2Q	1-2Q	1-2Q		
Annual SW Version Release	3Q	3Q	3Q	3Q	3Q	3Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations
(DIS) - Engin

PROJECT
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COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
C74 DEVEL SIMULATION TECH	3133	2352	1869	2235	4000	3951	849	448	0	18987

A. Mission Description and Budget Item Justification: The funding in this project line supports the chartered mission of the Simulation to C4I Interoperability (SIMCI) Overarching IPT. This effort provides recommendations to Senior Army Leadership on strategies, methods, and changes in Army Policy resulting in improved interoperability between the Modeling and Simulation (M&S) community, the Battle Command community, and the Weapons System / Platform community as well. SIMCI Investments include a System of Systems focus on Architectures, Data, Standards, and strategies to influence the acceptance of Interoperability Common components. SIMCI also invests in limited processes to foster Army level collaboration and problem solving strategies on Interoperability issues at the System of Systems level. A stated requirement of the SIMCI OIPT is to establish and facilitate communication with the Future Combat System (FCS) Lead Systems Integrator (LSI) to provide them with Interoperability issues encountered by the Current Force implementation, for the expressed purpose of influencing the FCS program to more interoperable solutions. Nearly all SIMCI investments are made as cost sharing opportunities with others who require access to SIMCI sponsored / endorsed technologies and capabilities.

Interoperability is the ability of systems, units, or forces to provide data, information, materiel, and services to and accept the same from other systems, units, or forces, and to use the data, information, materiel, and services that are exchanged to enable them to operate effectively together. To achieve interoperability in the Army's System of Systems approach toward Army Transformation, components based architectures are critical to successful integration of current and future M&S and tactical systems.

SIMCI's requirement is to tie interoperability and top level warfighter tasks to the Future Force to enable the soldier to train while at the institution, at homestation, at the Combat Training Centers, or at a deployed location with a fully integrated and interoperable training environment. This requires the development and distribution of SIMCI solutions for design and utilization of common components for the Army future Battle Command and the various applicable systems and platforms that are essential for Army Transformation.

Digital Integration Lab (DIL) provides a centrally controlled digital integration laboratory to conduct program development, integration and the mandated Intra-Army Interoperability activities in support of PEO STRI integration of interoperability with the Army's System and Non-System Training Aides, Devices and Simulation and Simulators (TADSS) with existing and emerging Army Battle Command Systems.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0604760A - Distributive Interactive Simulations
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Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
FY04-FY07: Provided Army level synchronization of SIMCI-related and software blocking related initiatives (development, configuration, management, certification, and distribution). Developed an M&S data model to align the Army's integrated core data model. Provided recommendations on DA level policy to improve interoperability between M&S and tactical C4I systems. Managed the SIMCI efforts between the M&S and tactical C4I systems. Provided ABCS Software License management to all SIMCI related programs. Provided architectural support and effective liaison to PM Future Combat Systems (FCS), Defense Modeling and Simulation Office (DMSO), Defense Information Systems Agency (DISA) and other Services. Collaborated on the stand up of a fully enabled and feature rich SIMCI Requirements Synchronization & Assessment Enterprise Tool Set (RS&A ETS). Develop and manage the Simulation-to-C4I interoperability (SIMCI) initiatives between the models and simulations (M&S) and tactical C4I Systems in a components based architectures approach. Develop C4I support plans to align the Army's operational, systems, and technical architectures to define and enable interoperable solutions between the M&S and the C4I community. Funding line zeroed out beginning in FY 05 due to funds being realigned under VMSO.	267	0	0	0
FY04-FY07: Continue management of the SIMCI efforts(7 Government WYs FY 05). Provide support of the SIMCI Overarching Integrated Product Team's (OIPT) approach to interoperability which includes architecture alignment, data model alignment, promotion of common standards & the development, baseline control & distribution of common interoperability. Objectives are: Develop components for existing Battle Command/C4ISR and simulation systems; conduct experimentation and standardization with Battle Management Language (BML) Prototype; develop specification for a standard interface to facilitate interoperability between communications effects simulations and C4I systems; develop a SIMCI Component Architecture to provide seamless interoperability between Army Battle Command and Army M&S components; further develop and increase user awareness of the Requirements Synchronization and Assessment Enterprise Tool Set (RS&A ETS); and align all initiatives with the Army's Software Blocking Policy. Continue transition of SIMCI knowledge and Proof of Principle(POP)Products to Army and Joint Programs of Record. Manage and sustain the PEO STRI Digital Integration Lab as the single point access to Army Battle Command Systems.	2866	2352	1869	2235
Totals	3133	2352	1869	2235

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY

5 - System Development and Demonstration

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**0604760A - Distributive Interactive Simulations
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B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: SIMCI OIPT resources are allocated to multiple organizations and contracts to procure and execute approved functions and projects to support the SIMCI and components based architecture alignment efforts. Majority of funding is reflected in the Management Services line.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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- Engin

PROJECT
C74

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . C4I Interoperability - Tng in the System of Systems Architecture (TSOSA)	C/CPAF	MITRE, CECOM, Ft Monmouth, NJ	230	0		0		0		0	230	230
b . C4I Interoperability - SIMCI OIPT/Digital Integration Lab (DIL)	T&M	COLSA Corporation, Huntsville, AL	531	1961	1-3Q	0		0		0	2492	2492
c . C4I Interoperability - SIMCI Battle Management Language (BML)	C/CPAF	Northrop Grumman Information Technology, McLean, VA	0	250	1-4Q	0		0		0	250	250
Subtotal:			761	2211		0		0		0	2972	2972

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BUDGET ACTIVITY
5 - System Development and Demonstration

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- Engin

PROJECT
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Facility Support for Digital Integration Lab (DIL)	In-House	PEO STRI (formerly STRICOM), Orlando, FL	60	350	1-3Q	350	1-3Q	350	1-3Q	Continue	Continue	Continue
Subtotal:			60	350		350		350		Continue	Continue	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	Multiple	Various	5060	2821	1-4Q	1519	1-4Q	1885	1-4Q	Continue	Continue	Continue
Subtotal:			5060	2821		1519		1885		Continue	Continue	Continue
Project Total Cost:			5881	5382		1869		2235		Continue	Continue	Continue

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS) - Engin

PROJECT
C74

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Deliverable (Reusable Common Components)																																
Deliverable - SIMCI OIPT Process																																
Deliverable - SIMCI Data Representation Tasks																																
Deliverable - SIMCI Standardization Tasks																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
M&S Services for GIG					1Q			4Q
Integration of Training into Army Enterprise and Joint C4I Architectures		1Q				4Q		
C4I-M&S Reference Object Model (CROM)	1Q					4Q		
Army C4I and Simulation Initialization System (ACSIS)	1Q			4Q				
Standardize Battle Management Language	1Q					4Q		
Representation of Communication Effects (CE) for Experimentation, Training and Operations		1Q						4Q
Transition of Common Components/Services to Applications		1Q						4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604760A - Distributive Interactive Simulations (DIS) - Engin					PROJECT C77		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
C77 INTERACTIVE SIMULATION	0	1246	1167	1190	1191	1194	1049	1074	0	8111

A. Mission Description and Budget Item Justification: This project supports the development and maintenance of the Army Geospatial Data Integrated Master Plan (AGDIMP). The ADGIMP is a Chief of Staff, Army approved document that provides the framework for future decisions and direction to generate, manage, analyze, and distribute geospatial data for battle management operations, training, and mission rehearsal. The AGDIMP also provides the processes and procedures to identify and refine Army geospatial resource requirements. Geospatial Information and Services provide the basis for situational awareness on the battlefield. Geospatial data provides Soldiers with the framework and background for displaying the location of friendly and enemy forces, and the location of critical features on the battlefield. Geospatial data, used in Army simulators and simulations as well as its command and control systems, also provides insights on how the physical environment will impact combat operations. The Army's Future Force will include unmanned aerial and ground vehicles that require a greater degree of resolution in both terrain and enhanced feature data to navigate and move on the battlefield to minimize exposure of Soldiers to hostile environments and enemy force that will depend on a common set of geospatial data that is continually upgraded and made available on a network of information that is accessible to all involved. The purpose of the AGDIMP is twofold. First, this plan describes a concept of operations for a complete, integrated, end-to-end, network-centric process for collecting, managing, distributing, and updating geospatial data in the Army's Future Force. Although this plan encompasses most of the issues of an end-to-end solution for geospatial needs and concerns, it does not contain the total level of detail or complexity to be considered a complete end-to-end solution. It does, however, contain a foundation of issues necessary to develop a concept of operations for a complete, integrated, end-to-end, network-centric process for collecting, managing, distributing, and updating geospatial data. Second, this plan identifies activities and funding needed to execute the basic concept of operations described in the AGDIMP. The scope of the AGDIMP includes all activities starting with data acquisition from multiple sources, to include raw sensor feeds from national sensors to soldier/platform level, and culminating with accurate, robust, and timely geospatial (terrain-related) data and data conversion tools that support multiple battle command, training, and mission-rehearsal applications. The AGDIMP does not include the algorithms and functions used by the applications themselves to produce finished battle command or intelligence products. The AGDIMP is intended to become part of a much larger effort that will integrate geospatial activities across all Services, while documenting the complex framework for a "net ready" geospatial information and services architecture, an environment in which the Army's current and future forces must operate to achieve information dominance within the total battle space. This larger effort is the Joint Geospatial Enterprise Service (JGES). An Initial Concepts Document (ICD) for the JGES has been developed in conjunction with the Joint Forces Command and the other Services (including Special Operations Command, and currently, this document is being staffed within Department of the Army Headquarters. The Army Requirements Oversight Council (AROC) will approve the JGES ICD. Subsequent to that approval, the Joint Requirements Oversight Council (JROC) will also staff, review and approve the ICD.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations
(DIS) - Engin

PROJECT
C77

Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Supports the development of the Dynamic Readdressing and Management for Army (DRAMA) 2010.	0	1246	0	0
Develop an integrated, end-to-end, geospatial process that can be used for network-centric operations. The network-centric, integrated geospatial process must include a process to identify requirements for new geospatial data, assemble the components of needed data, archive the data in a distributed network of storage facilities (or warehouses), and ensure the data are available to all authorized users.	0	0	507	0
Develop policy, procedures, and standards for geospatial data management, including fusion/integration (e.g., fusion and conflation), transformation, filtering, and dissemination of data across all echelons of command. This includes the timely distribution of appropriate data from the Top Secret network – the Joint Worldwide Intelligence Communications System	0	0	660	0
Develop common, analytical, geospatial services among the Battle Command, topographic engineering, and training elements. Establish a Joint geospatial data dictionary. Establish a Joint geospatial data model. Develop common analytical, geospatial services between BC and M&S. Define the requirements for metadata standards to determine the fitness of use (FoU) of existing and planned services and applications as a function of varying quality geospatial data. Provide the FoU data to the user as part of the analysis product metadata. Establish a distributed, Joint Geospatial Enterprise Service Test Bed (JGES(T)) to support the experimentation; evaluation; and verification, validation, and accreditation (VV&A) of geospatial services and applications. Establish a Joint geospatial system and organization at the Joint level that supports the combatant commander.	0	0	0	1190
Totals	0	1246	1167	1190

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: The Army G-3/5/7 is the lead for the AGDIMP. The Army G-3/5/7 and G-2 will establish authority, research development, test, and evaluation (RDTE) and operation and maintenance (O&M) policies and requirements for Army geospatial data enhancement and/or augmentation and associated geospatial data warehouse(s), facilities, nodes, and staffing. Resources will be allocated to multiple organizations and contracts to obtain and execute approved functions and projects to support the AGDIMP.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS) - Engin

PROJECT
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Dynamic Readdressing and Management for Army (DRAMA) 2010	C/CPAF	Various	0	1246	2Q	0		0		0	1246	0
b . Army Geospatial Data Integrated Master Plan (AGDIMP)	C/CPAF	Various	0	0		860	2Q	870	2Q	Continue	1730	0
Subtotal:			0	1246		860		870		Continue	2976	0

Remarks: Dynamic Readdressing and Management Army (DRAMA) 2010 is a Congressional Add project in FY 2005.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS)
- Engin

PROJECT
C77

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Army Geospatial Data Integrated Master Plan (AGDIMP)	C/CPAF	Various	0	0		307	2Q	320	2Q	Continue	627	0
Subtotal:			0	0		307		320		Continue	627	0

Project Total Cost:			0	1246		1167		1190		Continue	3603	0
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Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS)
- Engin

PROJECT
C77

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Plan for a Joint, Integrated, Network Centric End-to-End Geospatial System			2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Collect and Update Geospatial Data			2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Catalog, Assess, Develop, and Disseminate Current Geospatial Data Integration Tools			3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Verify, Manage, and Distribute Geospatial Data			3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Develop and exploit fitness of use metadata				1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

The roadmap to implement the Army Geospatial Data Integrated Master Plan (AGDIMP) is divided into five sections, each one corresponding to one of the five trade study groups that developed plans for developing future Army geospatial operations to support the Army's Future Force. Of particular importance is the time period for which action is required. The roadmap identifies the activities that need to be funded to execute the AGDIMP.

The roadmap is based on the implementation of two concepts:

1. A Joint Geospatial Enterprise Service (JGES): an overarching set of capabilities to collect, develop, analyze, and distribute geospatial data from national to platform level.
2. A Joint Geospatial Enterprise Service Testbed (JGES(T)): a distributed prototyping environment within which new geospatial enterprise concepts will be designed, prototyped, tested, and evaluated. Results from the JGES(T) will become the basis for the operational JGES capability.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604760A - Distributive Interactive Simulations (DIS) - Engin				PROJECT C78		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
C78 ONE SEMI-AUTOMATED FORCES (ONESAF)	19766	20405	16831	15209	14229	13063	13235	13391	Continuing	142963

A. Mission Description and Budget Item Justification: This project develops and delivers software systems to realistically represent activities of units and forces in simulation. This representation is used to support the concept evaluation, experimentation, materiel acquisition and training communities. Initiatives include the systems engineering and design for development and evolution of the architecture and software tools for a universal Army computer generated forces system, One Semi-Automated Forces (OneSAF). OneSAF is a next generation higher fidelity Brigade and below SAF that will represent a full range of operations, systems and control processes in support of stand alone and embedded training and research, development and acquisition simulation applications. OneSAF will be fully interoperable with the Army's emerging virtual, live and division and above constructive simulations and will provide next generation simulation products. OneSAF will replace a variety of simulations currently used within the Army to support analytic and training simulation activities. This project is a component of the Army Constructive Training Federation (ACTF).

The FY06 and FY07 programs will continue the development of the software required to provide OneSAF final operational capability for Army evaluation and test.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY04-FY07: Continues development of functionality to provide architectural services, components, synthetic environment and infrastructure capable of supporting initial model development.	7135	5154	5527	3923
FY04-FY06: Continue to develop life cycle applications and infrastructure enhancements for OneSAF Full Operational Capability Version 1.0.	818	962	500	0
FY04-FY07: Continue to develop functionality to represent behaviors, physical models, and communication models for OneSAF	10444	11403	6804	6786
FY04-FY07: Continue verification & Validation of newly developed and integrated software.	1369	1256	2000	2000
FY04-FY05 Commander's Rock Drill	0	1630	0	0
FY06-FY07: Initiate NETT	0	0	2000	2500
Totals	19766	20405	16831	15209

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604760A - Distributive Interactive Simulations
 (DIS) - Engin**

PROJECT
C78

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OMA, 121014	1900	2007	5616	5450	6146	5892	5718	5860	Continuing	Continuing

OMA funding provides for OneSAF life cycle software maintenance of existing software.

C. Acquisition Strategy: Development based on performance specifications via multiple Task Orders on competitively selected contracts.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS)
- Engin

PROJECT
C78

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Architecture Dev & System Integration	CPFF	Science Applications International Corp, Orlando, FL	29086	8409	1-2Q	4238	1-2Q	3923	1-2Q	Continue	Continue	Continue
b . Integrated Environment Dev	CPFF	Advanced Systems Technology, Inc., Orlando FL	4911	1030	1-2Q	1500	1-2Q	1500	1-2Q	Continue	Continue	Continue
c . Synthetic Environment Dev	CPFF	Science Applications International Corp, Orlando, FL	4017	1375	1-2Q	500	1-2Q	500	1-2Q	Continue	Continue	Continue
d . Knowledge Acquisition/Knowledge Engineering	CPFF	Aegis Technologies Group, Huntsville, AL	3819	1015	1-2Q	500	1-2Q	500	1-2Q	Continue	Continue	Continue
e . OneSAF System Development	CPFF	Various	5385	1734	1-2Q	1463	1-2Q	416	1-2Q	Continue	Continue	Continue
f . Model Development	CPFF	Acusoft/Various	11365	1807	1-2Q	840	1-2Q	1000	1-2Q	Continue	15012	Continue
g . NETT	CPFF	To be determined	0	0		2000	2-3Q	2500	1-2Q	Continue	Continue	4500
h . Commander's Rock Drill			0	1630		0		0		0	1630	1600
Subtotal:			58583	17000		11041		10339		Continue	Continue	Continue

Remarks: Each contract award is a Delivery Order on a competitively selected contract.

Each Delivery Order will be recompeted in FY06 to award for post-FOC activities.

Product Development:

Item h. FY04 Commander's Rock Drill funding was moved to another funding line for execution.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS)
- Engin

PROJECT
C78

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Analysis	Various	Multiple	2777	500	1-2Q	600	1-2Q	600	1-2Q	Continue	Continue	Continue
b . Domain Analysis	Various	Multiple	2587	500	1-2Q	600	1-2Q	600	1-2Q	Continue	Continue	Continue
c . Architecture Engr & Tech Spt	C/CPFF	MITRE FFRDC	1676	200	1-2Q	260	1-2Q	270	1-2Q	Continue	Continue	Continue
Subtotal:			7040	1200		1460		1470		Continue	Continue	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . OneSAF integration, evaluation and test	C/CPAF	TBD	1050	402	1-3Q	2000	1-3Q	1000	1-3Q	Continue	Continue	Continue
b . OneSAF Verification, Validation & Accreditation	Various	Multiple	1418	613	1-3Q	1000	1-3Q	1000	1-3Q	Continue	Continue	Continue
Subtotal:			2468	1015		3000		2000		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS)
- Engin

PROJECT
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program management	Various	Multiple	4875	1190	1-4Q	1330	1-4Q	1400	1-4Q	Continue	Continue	Continue
Subtotal:			4875	1190		1330		1400		Continue	Continue	Continue

Project Total Cost:			72966	20405		16831		15209		Continue	Continue	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS) - Engin

PROJECT
C78

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Block C	Block C																																			
Block D					Block D																															
P3I									P3I																											
(1) Full Operational Capability									▲ 1																											
(2) OOS V1.0															▲ 2																					

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS)
- Engin

PROJECT
C78

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Award OneSAF Development Task Orders for individual components to meet block requirement	1Q	1Q	1Q	1Q	1Q	1Q	1Q	1Q
Block C		1Q						
Block D		4Q						
OneSAF FOC (Version 1.0)			1Q					
Deliver Block D		4Q						
OneSAF FOC (Version 1.0)			1Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604766A - Tactical Exploitation System/DCGS (TIARA)					PROJECT 957		
COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
957 TACTICAL EXPLOITATION SYSTEM (TES)/DCGS-A (TIARA)	23869	21505	0	0	0	0	0	0	0	102073

A. Mission Description and Budget Item Justification: This project supports the engineering development/enhancement of the Tactical Exploitation System (TES), Division TES (DTES), and the related Distributed Common Ground System - Army (DCGS-A) capability. TES brings a common inter-service, multi-discipline ISR capability together for the first time, enabling theater commanders to better use assigned ISR assets in support of operations. TES interfaces with numerous satellite and aircraft tactical sensors and processors to exploit their data, imagery, and information. TES provides commanders with maximum flexibility to satisfy intelligence needs under a wide range of operational scenarios. TES operators can perform multiple imagery intelligence (IMINT), signals intelligence (SIGINT), cross-intelligence, or dissemination functions from any workstation. TES provides extensive communication capabilities, including UHF, S, X, C and Ku radio frequency band communications. TES interfaces with and serves as a preprocessor for the All Source Analysis (ASAS), Common Ground Station (CGS), and the Digital Topographical Support System (DTSS). TES incorporates the standards and protocols dictated by the Common Imagery Ground/Surface System (CIG/SS) program. TES brings all of the existing and emerging capabilities of the Advanced Electronic Processing Dissemination System (AEPDS), Modernized Imagery Exploitation System (MIES) and Enhanced Tactical Radar Correlator (ETRAC) into an integrated common baseline that is downsized, modular and scaleable to meet a wide range of contingency requirements. DCGS-A will incorporate the capabilities of TES, Guardrail/Information Node (GR/IFN), and Common Ground Station (CGS). TES, as an integral part of DCGS-A will continue to incorporate emerging theater and national intelligence, surveillance, and reconnaissance (ISR) capabilities. Specific details are provided in the Tactical Intelligence and Related Activities (TIARA) Congressional Budget Justification Book and the Joint Military Intelligence Programs (JMIP) Congressional Budget Justification Book. ASPO program management support costs for these efforts are funded under PE 0603766 Project 907 in FY02 and out. In FY 04, funding ends for TES technical evolution and operational currency.

Increase in FY05 is intended to devise a TES Forward (MINUS) derivation of the TES baseline for two gaining commands. These two systems are required to replace defielded TENCAP Equipment (AEPDS) which is scheduled to occur NLT 1st QTR FY05. An additional \$1M of RDTE was provided to do engineering and development work for the TES Lite prototype which will be the technical foundation for procuring 21 TES-Lites with SSN BZ7317 Procurement Funds (FY05).

On January 13, 2005, the Program Executive Office (PEO), Air, Space and Missile Defense (ASMD) merged with the PEO, Tactical Missiles to become the PEO, Missiles and Space.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604766A - Tactical Exploitation System/DCGS (TIARA)	PROJECT 957
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<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
TES Forward (MINUS) for Korea. (EUSA)	0	10500	0	0
TES Forward (MINUS) for I-Corps.	3600	10500	0	0
TES Lite development, integration and evaluation. Starts engineering effort that produces baseline on which SSN BZ7317 Procurement for FY05-06 fielding occurs.	0	505	0	0
Field Motivated Fixes, Baseline Builds, and Configuration Control Board	5495	0	0	0
Advance Planning and Engineering for Future Requirements and Studies to include DCGS transformation, Future Combat Systems (FCS) and National Imagery projects.	2327	0	0	0
Continue TES/DCGS-A development through Army Topographic Engineering Center (TEC) and FFRDC (Aerospace).	3465	0	0	0
Ensures Interoperability across the services and other programs for evolving sensors, data links, platform integration, COMMS, and multilevel security engineering efforts.	1958	0	0	0
System engineering and technical assistance, IPT participation across programs and Services, Roadmaps, and DCGS Transformation Plans	6234	0	0	0
Broadband Intelligence Training System	790	0	0	0
Totals	23869	21505	0	0

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	21821	0	0
Current Budget (FY 2006/2007 PB)	21505	0	0
Total Adjustments	-316	0	0
Net of Program/Database Changes			
Congressional program reductions	-316		
Congressional rescissions			
Congressional increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604766A - Tactical Exploitation System/DCGS (TIARA)

PROJECT
957

FY04 funding rescinded because Battlefield Intelligence Training system Prototype effort terminated in March 04.

C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PE 0305208A Project 956 (JMIP)	13654	0	0	0	0	0	0	0	Continue	Continue
BZ7316 CIG/SS (JMIP)	2667	0	0	0	0	0	0	0	Continue	Continue
BZ7317 Tactical Surveillance System (TIARA)	0	14792	0	0	0	0	0	0	0	14792

D. Acquisition Strategy: As pioneers in streamlined acquisition, ASPO's success in delivering TENCAP systems (as those described above) to warfighters is directly attributed to an environment emphasizing space funding, low density acquisition, minimal use of MILSPECS, and managed competition. ASPO minimizes risk while maximizing efficiency and accelerated system production cycles (less time for first Unit of Issue (FUI) and subsequent productions) by tailoring existing technology, leveraging the best commercial practices, and using commercial and government-off the shelf software. Government and contractor personnel and facilities accomplish dedicated cradle to grave Integrated Logistics Support (ILS) for all systems through a coordinated effort.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604778A - Positioning Systems Development (SPACE)					PROJECT 168	
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
168 NAVSTAR GPS EQUIP	1558	1962	0	0	0	0	0	0	0	3606

A. Mission Description and Budget Item Justification: The Navstar Global Positioning System (Navstar GPS) is a passive, space-based, radio positioning and navigation system providing precise, three dimensional position, navigation, velocity and timing information to warfighters. The Navstar GPS program is designated as a DoD Space Program and the United States Air Force (USAF) is the executive agent. The Joint Program Office develops GPS User Equipment (PE 35164F) with Army management and oversight. NAVSTAR GPS is composed of three segments: Space, Control, and User Equipment. Project 168 provides for initial and sustained participation in the research and development of Army unique requirements that enhance the Position Navigation capabilities of Army weapons systems and platforms. These funds will be used to identify/support the means to increase the functionality and performance of GPS receivers.

The Defense Advanced GPS Receiver has been designated a Horizontal Technology Integration (HTI) program and provides essential capabilities to numerous weapon systems and platforms.

No funding in FY06/07

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Leverage, demonstrate, and transition of Urban Situational Awareness improvements and solutions into GPS receivers.	1558	1962	0	0
Totals	1558	1962	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604778A - Positioning Systems Development
(SPACE)

PROJECT
168

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	2048	2233	0
Current Budget (FY 2006/2007 PB)	1962	0	0
Total Adjustments	-86	-2233	0
Net of Program/Database Changes			
Congressional Program Reductions	-86		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years		-2233	

FY2006: -\$2233 Funding redirected to higher priority programs.

<u>C. Other Program Funding Summary</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
K47800, Other Procurement, Army, NAVSTAR GPS	45951	42990	44730	38871	51457	28889	54525	54881	Continue	Continue

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

**0604778A - Positioning Systems Development
(SPACE)**

PROJECT

168

D. Acquisition Strategy: Leverage commercial technology investments and Communication and Electronics Research, Development, and Engineering Center (CERDEC) initiatives that will improve and enhance functionality of GPS receivers to include unique Army requirements for time of arrival augmentation, GPS reception in a low signal environment, and providing GPS referenced position data deep inside buildings, tunnels and caves. This leveraging will be accomplished by using the contractor of the affected GPS receiver to transition software data into the desired platform. The DAGR contract was awarded in 2QFY04 on a competitive basis.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604780A - COMBINED ARMS TACTICAL TRAINER (CATT)

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	3817	18316	37471	40134	44796	32476	21777	25503	Continuing	Continuing
571 CLOSE CBT TACT TRAINER	3817	5361	6247	3160	2831	2907	0	0	0	29084
577 SOLDIER - COMBINED ARMS TACTICAL TRAINER	0	0	0	2557	2559	575	585	477	0	6753
582 SYNTHETIC ENVIR CORE	0	9792	21200	22664	26419	27466	19665	23500	Continuing	Continuing
585 AVIATION COMBINED ARMS TACTICAL TRAINER	0	3163	10024	11753	12987	1528	1527	1526	Continuing	42508

A. Mission Description and Budget Item Justification: The Combined Arms Tactical Trainer (CATT) is a family of combined arms simulation systems designed to support the Army's simulation-based Combined Arms Training Strategy. The initial CATT system is the Close Combat Tactical Trainer (CCTT), which provides the underlying baseline (architecture, terrain databases, After Action Review [AAR], Semi-Automated Forces [SAF], and models/algorithms) for future CATT expansions, pre-planned product improvements and system enhancements. Synthetic Environment (SE) Core provides for the expansion of the Synthetic Environment baseline to include enhanced interoperability and the products and infrastructure to support Mission Rehearsal for operations currently required by the Global War on Terror (GWOT). The first synthetic environment to be expanded is the Aviation Combined Arms Tactical Trainer (AVCATT) for both Active and Reserve components. CATT enables units, from crew to the battalion task force level, to conduct a wide variety of combat tasks on a realistic, interactive synthetic battlefield. CATT's combination of manned simulators and staff officer workstations enables units to train as a combined arms team in a cost effective manner. CATT reinforces the successes and corrects the shortcomings of the Simulator Network (SIMNET) and Aviation Network (AIRNET) Demonstration Programs executed by the Defense Advanced Research Projects Agency (DARPA). Soldier CATT is a dismount-centric collective virtual training system designed to train dismounted soldiers, leaders and units (platoon through battalion). Soldier-CATT provides light infantry, Stryker Brigade Combat Team (SBCT), Ranger, SOF and Land Warrior equipped Brigade Combat Team (BCT) commanders a highly tolerable, deployable, collective combined arms training and mission rehearsal system with an AAR capability. It provides the soldier/leader a virtual link into the Live, Virtual, and Constructive training environment and provides the core architecture that will enable dismounted infantry for Future Combat System (FCS) equipped Unit of Action units. By practicing skills in CATT, units are able to make more effective use of scarce resources and costly live fire and maneuver exercises as well as train tasks deemed too hazardous to conduct in the field. Fielded in both fixed site and mobile/transportable versions, CATT enables both Active and Reserve component units to prepare for real world contingency missions. By being able to process a wide array of terrain databases and modify the behavior of the computer generated opposing forces, CATT offers a virtually unlimited array of training options to support the Army's many regional contingency missions. The combination of tough field and live fire training and realistic simulation training in CATT is the catalyst to prepare soldiers and their leaders for the uncertainties they will face in an unpredictable world, especially in support of GWOT operations.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604780A - COMBINED ARMS TACTICAL TRAINER (CATT)

The FY06/07 funding for CCTT will provide the U.S. Army with weapons concurrency upgrades and begin Generic Reconfigurable Manned Modules. These improvements allow CCTT the opportunity to enhance capabilities as a tactical trainer and maintain concurrency to communication system with the structural changes the current battle force is experiencing. FY07 funds for Soldier CATT will provide the U.S. Army with a proof of concept with key components (Virtual Warrior, Master Control/After Action Review Console and Semi-Automated Forces Interface) for a Virtual Collective Combined Arms Virtual Training System supporting dismounted/mounted leader and Soldier training tasks at the squad level. FY06/07 funds for SE Core will provide the U.S. Army with a Standardized and Dynamic Terrain Database generation process, Objective OneSAF Integration and Common Virtual Components (CVCs). FY06/07 funds nonsystem weapons concurrency upgrades and initiates Engineering Change Proposals (ECPs) for refinements to the AVCATT system. These efforts will improve readiness by providing more realistic collective training in support of GWOT and the flexibility to support Army modularity.

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	23849	33674	40153
Current Budget (FY 2006/2007 PB)	18316	37471	40134
Total Adjustments	-5533	3797	-19
Net of Program/Database Changes			
Congressional Program Reductions	-4740		
Congressional Rescissions	-279		
Congressional Increases		3797	
Reprogrammings			
SBIR/STTR Transfer	-514		
Adjustments to Budget Years			-19

FY05 changes - Congressional Program Reductions (-\$4.740 Million) resulted from Comanche termination. FY06 funding was increased to support the AVCATT program (\$2.594 Million) to support concurrency ECPs, CCTT (\$.676 Million) for obsolescence changes and SE Core (\$.527 Million) for modularity/database generation.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER (CATT)

PROJECT
571

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
571 CLOSE CBT TACT TRAINER	3817	5361	6247	3160	2831	2907	0	0	0	29084

A. Mission Description and Budget Item Justification: This program provides for System Development and Demonstration (SDD) and Pre-Planned Product Improvements (P3I) for the Close Combat Tactical Trainer (CCTT), which will enhance readiness for both Active and Reserve component forces to support execution of the Global War on Terror (GWOT). The program develops a networked system of interactive computer driven simulators, emulators and semi-automated forces that replicate combat vehicles and weapon systems, combat support systems, combat service support systems, and command and control systems to create a fully integrated real-time collective task training environment. This trainer will allow soldiers to practice, repetitively, tactics, techniques and procedures that, if performed on real equipment, would be too hazardous, time-consuming and expensive. These trainers enhance realism and allow soldiers and units to learn tactical combat lessons on maneuver, command and control, and improved teamwork for increased survivability. The pre-planned product improvements provide CCTT an opportunity to enhance its capabilities as a tactical trainer and maintain concurrency with the structural changes the current battle force is experiencing. These improvements will provide the interoperability with Aviation Combined Arms Tactical Trainer, Force XXI Battle Command Brigade and Below (FBCB2), Army Tactical Command and Control System (ATCCS) and other simulation systems needed to execute training on GWOT.

The FY06/07 funding for CCTT will provide the U.S. Army with weapons concurrency upgrades and begin Generic Reconfigurable Manned Modules. These improvements allow CCTT the opportunity to enhance capabilities as a tactical trainer and maintain concurrency to communication system with the structural changes the current battle force is experiencing.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
FY06-FY07: Develop product improvements for Generic Manned Module, Communication Upgrades for Advanced System Improvement Program (ASIP) Sincgars Radio, Trainer Unique Display, Improved Mortar Ballistic Computer and other prioritized items.	0	0	6030	2939
FY04-FY07: Support government program management, engineering, technical contract, and continue operational evaluation support	658	781	217	221
FY04-FY05: Complete refinements to digital capabilities, enhanced After Action Review (AAR), enhanced Dismounted Infantry Manned Modules, and nonsystem weapons concurrency upgrades. Begin development efforts for generic reconfigurable Manned modules, and Mobile Theater AAR capability.	3159	4580	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604780A - COMBINED ARMS TACTICAL TRAINER (CATT)	PROJECT 571
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<u>Accomplishments/Planned Program (continued)</u>	FY 2004	FY 2005	FY 2006	FY 2007								
Totals	3817	5361	6247	3160								
<u>B. Other Program Funding Summary</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost		
OPA3, Appropriation NA0170 SIMNET/CCTT	58740	61572	63746	16678	32750	33983	33863	6574	Continuing	Continuing		

C. Acquisition Strategy: Competitive cost plus award fee contract for System Development and Demonstration (SDD) phase.

Competitive procurement against performance specifications as part of basic contract.

Engineering Change Proposal's were Sole Source, Cost Plus Fixed Fee.

FY05 procurement award was a Firm Fixed Price option executed thru PEO STRI Omnibus Contract (STOC) which was competitively awarded.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER
(CATT)

PROJECT
571

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CCTT Pre Planned Product Improvements (P3I)	C/TBS	TBS	3059	4580	2Q	6030	1Q	2939	1Q	5233	21841	Continue
Subtotal:			3059	4580		6030		2939		5233	21841	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering and Technical Support	MIPRs/T&M	Various activities	32062	0		0		0		0	32062	0
Subtotal:			32062	0		0		0		0	32062	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER
(CATT)

PROJECT
571

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Office Support	MIPR	PEO STRI/NAVAIR, Orlando, FL	14912	781	1-4Q	217	1-4Q	221	1-4Q	500	16631	0
Subtotal:			14912	781		217		221		500	16631	0

Project Total Cost:			50033	5361		6247		3160		5733	70534	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604780A - COMBINED ARMS TACTICAL TRAINER
 (CATT)**

PROJECT
571

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
P3I																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER
(CATT)

PROJECT
571

<u>Schedule Detail</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
P3I Software/Hardware Insertions Award			1Q	1Q	1Q	1Q		
P3I Software/Hardware Insertions Delivery			4Q	4Q	4Q	4Q		
Mobile Theater After Action Review (AAR) Award	2Q							
Mobile Theater AAR Delivery		2Q						
Enhanced-After Action Review Award	2Q							
Enhanced-After Action Review Delivery	3Q							
Enhanced-Dismounted Infantry Manned Module Award	2Q							
Enhanced-Dismounted Infantry Module Delivery	3Q							
Joint Close Air Support Improvements Award	4Q							
Joint Close Air Support Improvements Delivery		2Q						
Generic Reconfigurable Manned Module Award		2Q						
Generic Reconfigurable Manned Module Delivery			1Q	1Q				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604780A - COMBINED ARMS TACTICAL TRAINER (CATT)				PROJECT 577		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
577 SOLDIER - COMBINED ARMS TACTICAL TRAINER	0	0	0	2557	2559	575	585	477	0	6753

A. Mission Description and Budget Item Justification: This project supports Soldier Combined Arms Tactical Trainer (CATT) which is a collective combined arms virtual training system supporting dismounted/mounted leader and soldier training tasks. It will enable more frequent, repetitive, standards-based training to build and sustain readiness at home station. Soldier CATT combines immersive soldier and leader simulators called "Virtual Warrior" with PC-based Reconfigurable Vehicle Simulators, Dismounted Soldier Multifunctional Workstations, and high fidelity convoy trainers to support training of leaders and Soldiers from squad/crew to company with extensions to individual Soldier and battalion echelons. Soldier CATT will enable training on the full-spectrum of operations required by the Global War on Terror (GWOT) in urban and complex terrain environments.

FY07 funds for Soldier CATT will provide the U.S. Army with a proof of concept with key components (Virtual Warrior, Master Control/After Action Review Console and Semi-Automated Forces Interface) for a Virtual Collective Combined Arms Virtual Training System supporting dismounted/mounted leader and Soldier training tasks at the squad level training to support GWOT.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
FY07: Initiate development of squad test suite (proof of concept).	0	0	0	2313
FY07: Initiates program office support.	0	0	0	244
Totals	0	0	0	2557

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Planned for competitive cost type contract.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER
(CATT)

PROJECT
577

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . S-CATT Development	C/CPFF	TBS	0	0		0		2313	2Q	3594	5907	0
Subtotal:			0	0		0		2313		3594	5907	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Support	C-FFP-TM	Morgan Research Corporation, Orlando, FL	0	0		0		100	2Q	250	350	0
Subtotal:			0	0		0		100		250	350	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER
(CATT)

PROJECT
577

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Office Support		PEO STRI/NAVAIR, Orlando, FL	0	0		0		144	1-4Q	277	421	0
Subtotal:			0	0		0		144		277	421	0

Project Total Cost:			0	0		0		2557		4121	6678	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER (CATT)

PROJECT
577

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) Soldier-CATT Program Approval Development																	▲ Milestone A/B															

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER
(CATT)

PROJECT
577

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
S-CATT development and squad level capability (proof of concept) Award				2Q				
S-CATT development and squad level capability (proof of concept) Delivery					3Q			
Test at multiple squad level					4Q			
Develop a platoon level capability with system upgrades/enhancements.					3Q			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604780A - COMBINED ARMS TACTICAL TRAINER (CATT)				PROJECT 582		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
582 SYNTHETIC ENVIR CORE	0	9792	21200	22664	26419	27466	19665	23500	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports the Synthetic Environment Core (SE Core) and is the Army's Common Virtual Environment (CVE) to link virtual training simulations into an integrated and interoperable training system with fair fight capability that is sufficient for Mission Rehearsal and Global War on Terror (GWOT) training. This CVE will link to the live and constructive environments for an integrated Live/Virtual/Constructive LVC capability to support Army Transformation and Combined Arms Training Strategy. SE Core is a key element in the Army's Training Transformation Plan to link the Future Combat Systems' (FCS) embedded multi-mode LVC training capability with Current and Stryker Forces and Joint Interagency Intergovernmental Multinational (JIIM) simulations.

Under SE Core, current and future virtual training devices will enable the Army to execute combined arms and joint training, mission planning and rehearsals at home station, en route and deployed locations critical to training for GWOT operations. SE Core consists of a series of interoperable software components that will be integrated into virtual simulations, enabling the Army's CVE and facilitating interoperability in a LVC Training Environment (TE). The components are Objective OneSAF (OOS) integration, standard rapid terrain database (TDB) generation process, master TDB open format, standard visual models, dynamic terrain, atmospheric effects, Chemical, Biological, Radiological, Nuclear and High Explosive (CBRNE) effects, common After Action Review (AAR), a long haul networking capability, Command, Control, Communications, Computers, Intelligence Surveillance and Reconnaissance (C4ISR) interfaces, training support packages and exercise management tools. The standard TDB generation process uses automated tools, processes and standard source data to create Master Database (MDB). Utilizing a read tool and application program interface, the MDB open format is developed into correlated runtime databases to support the LVC TE and for mission planning/ rehearsal/execution in an operational environment. Once developed, SE Core's Common Virtual Components (CVCs) will reduce redundancy, increase realism and facilitate an integrated LVC TE.

FY06/07 funds for SE Core will provide the U.S. Army with a Standardized and Dynamic Terrain Database generation process, Objective OneSAF integration and CVCs.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY05-FY07: Provides program management, engineering, technical, contract, and test support for development of SE Core.	0	1832	2070	2157
FY05-FY07: Architecture and Integration (integration of OOS into AVCATT and CCTT, development of a Virtual Simulation Architecture (VSA), Atmospheric effects for a Common Virtual Environment, Net Ready Capabilities, Exercise Management Tools, Long Haul Networking Component, Training Support Packages to support Combined Arms Training in AVCATT and CCTT). Integrated capabilities support GWOT training requirements.	0	4313	9616	13706

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604780A - COMBINED ARMS TACTICAL TRAINER (CATT)	PROJECT 582
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Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
FY05-FY07: Master Database (MDB)& Facilities (Standardized Terrain Database, MDB, Urban Operations Insets and Visual Models for a Common Virtual Environment).	0	3647	9514	6801
Totals	0	9792	21200	22664

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA3, Appropriation NA0173 Aviation Combined Arms Tactical Trainer	19786	54591	71301	81713	72082	29422	16486	16845	Continuing	Continuing
OPA3, Appropriation NA0170 Close Combat Tactical Trainer (CCTT)	58740	61572	63746	16678	32750	33983	33863	6574	Continuing	Continuing

C. Acquisition Strategy: Development and demonstration competitive contracts against performance specifications.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER
(CATT)

PROJECT
582

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Architecture and Integration	C/CPFF	TBS	0	4313	2Q	9616	1Q	13706	1Q	Continue	27635	21377
b . Master Database (MDB) & Facilities	C/CPFF	TBS	0	3647	2Q	9514	1Q	6801	1Q	Continue	19962	3006
Subtotal:			0	7960		19130		20507		Continue	47597	24383

Remarks: Raytheon Systems Co. has sold this part of their company to L-3Com.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering Services & Technical Support	C/FFP/T&M	Morgan Research Corporation, Orlando, FL	0	172	2Q	367	1Q	383	1Q	Continue	Continue	6421
Subtotal:			0	172		367		383		Continue	Continue	6421

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER
(CATT)

PROJECT
582

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:												

Remarks: Not Applicable

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Office Support	MIPR	PEO STRI/NAVAIR Orlando	0	1660	1-4Q	1703	1-4Q	1774	1-4Q	Continue	Continue	0
Subtotal:			0	1660		1703		1774		Continue	Continue	0

Project Total Cost:			0	9792		21200		22664		Continue	Continue	30804
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER (CATT)

PROJECT
582

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) SE CORE Program Approval Architecture and Integration Master Database (MDB) & Facilities					▲ Milestone A/B																											

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER
(CATT)

PROJECT
582

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Architecture and Integration Award		2Q	1Q	1Q	1Q	1Q		
Architecture and Integration Spiral Deliveries			3-4Q	4Q	4Q	4Q		
MDB & Facilities Award		2Q	1Q	1Q	1Q	1Q	1Q	1Q
MDB & Facilities Spiral Deliveries			2-3Q	4Q	4Q	4Q	4Q	4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL
TRAINER (CATT)

PROJECT
585

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
585 AVIATION COMBINED ARMS TACTICAL TRAINER	0	3163	10024	11753	12987	1528	1527	1526	Continuing	42508

A. Mission Description and Budget Item Justification: This project supports the Aviation Combined Arms Tactical Trainer (AVCATT) and is an Army aviation training system for both the Active and Reserve Component to provide mission rehearsal and training in support of the Global War on Terrorism (GWOT). AVCATT completed Initial Operational Test & Evaluation (IOT&E) on 1 August 2003 and received Full Rate Production Decision on 19 December 2003. A single suite of equipment consists of two (2) mobile trailers housing six (6) reconfigurable networked simulators that support the AH-64A/D, UH-60A/L, CH-47D, and OH-58D platforms. Supporting roleplayer, semi-automated forces (SAF), and after action review (AAR) workstations are also provided as part of each suite. AVCATT is a fully mobile system, capable of utilizing shore and generator power and is transportable worldwide. AVCATT fully supports Army modularity. The AVCATT system will permit various aviation units to conduct collective task training on a real-time, computerized battlefield in a combined arms scenario. Other required elements that are present on the modern, high intensity battlefield, such as the combat support and combat service support elements are an integral part of the simulation database. AVCATT is designed to provide realistic, high intensity collective and combined arms training to aviation units as well as the full spectrum of operations in support of GWOT. AVCATT supports the Aviation Transformation Plan and the Aviation Combined Arms Training Strategy.

FY2006/2007 funding will initiate Engineering Change Proposals (ECPs) for refinements to the system to include: Classified Operations, Objective OneSAF and Mission Rehearsal capabilities. Funding will also support interoperability with other combined arms simulators, life cycle baseline enhancements to the AVCATT infrastructure and technical obsolescence.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY05-FY07: Initiate ECPs for refinements to the system to include: Classified Operations, Objective OneSAF and Mission Rehearsal capabilities. Funding will also support interoperability with other combined arms simulators, life cycle baseline enhancements to the AVCATT infrastructure and technical obsolescence.	0	3013	9868	11591
FY05-FY07: Initiate government program management, engineering, technical, contract, and test support for AVCATT refinements.	0	150	156	162
Totals	0	3163	10024	11753

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604780A - COMBINED ARMS TACTICAL
 TRAINER (CATT)**

PROJECT
585

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA3, Appropriation NA0173 Aviation Combined Arms Tactical Trainer	19786	54591	71301	81713	72082	29422	16486	16845	Continuing	Continuing

C. Acquisition Strategy: System Development and Demonstration (SDD) competitive contract against performance specification.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER
(CATT)

PROJECT
585

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . AVCATT	C/CPAF/FPI F/FFP	L3 Communications Corporation, Arlington, Texas	0	3013	2Q	9868	1Q	11591	1Q	Continue	Continue	Continue
Subtotal:			0	3013		9868		11591		Continue	Continue	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER
(CATT)

PROJECT
585

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Office Support		PEO STRI, Orlando, Florida	0	150	1-4Q	156	1-4Q	162	1-4Q	Continue	Continue	Continue
Subtotal:			0	150		156		162		Continue	Continue	Continue

Project Total Cost:			0	3163		10024		11753		Continue	Continue	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER (CATT)

PROJECT
585

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Classified Ops (primarily software changes)																																				
Objective OneSAF Integration																																				
Mission Rehearsal Capability																																				
Required Interoperability with other combined arms simulators																																				
Life cycle baseline enhancements to the infrastructure & technical obsol.																																				

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - COMBINED ARMS TACTICAL TRAINER
(CATT)

PROJECT
585

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Classified Ops (primarily software changes)		2Q	1Q					
Objective OneSAF		2Q	1Q	1Q	1Q			
Mission Rehearsal Capability			1Q	1Q				
Required Interoperability with other combined arms simulators			1Q	1Q	1Q	1Q	1Q	1Q
Life cycle baseline enhancements to the AVCATT infrastructure and technical obsolescence			1Q	1Q	1Q	1Q	1Q	1Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604783A - JOINT NETWORK MANAGEMENT SYSTEM				PROJECT 363		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
363 JOINT NETWORK MANAGEMENT SYSTEM	9088	10279	5092	5182	2919	836	0	0	Continuing	0

A. Mission Description and Budget Item Justification: This program element supports the Joint Network Management System (JNMS) RDTE development effort. The JNMS is a Combatant Commander and Commander, Joint Task Forces (CJTF), joint communications planning and management tool. JNMS is an automated software system. It will provide communication planners with a common set of tools to conduct high level planning (war planning), detailed planning and engineering, monitoring, control and reconfiguration, spectrum planning and management, and security of communications and data systems used to support a Joint Task Force (JTF). These systems include circuit switches, data switches, message switches, single channel networks, transmission systems and satellite systems. It will promote force level situational awareness; provide enhanced flexibility to support the commander's intent; improve management of scarce spectrum resources; and provide increased security of these critical systems and networks. This development effort entails development of the JNMS architecture, software development and integration of Government-Off-the-Shelf and Commercial-Off-the-Shelf software, functional and operational testing, and development of Integrated Logistics Support data and documentation. Multiple software baselines are to be developed with the first increment to provide base capability to the user, with subsequent baselines each providing additional functionality and capability.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Software Development (System Design, Software Integration, and Functional Qualification Testing) for Combined Build	900	0	0	0
Baseline Software Development (System Design, Software Integration, and Functional Qualification Testing) for Baseline 1.2/1.3	3393	2214	0	0
Software Development (System Design, Software Integration, and Functional Qualification Testing) for Baseline 1.2/1.3	2361	6772	2390	0
Plan and Conduct Developmental Test for Baseline 1.3	2100	1293	0	0
Software Development (System Design, Software Integration, and Functional Qualification Testing) for Baseline 3	334	0	2702	5182
Totals	9088	10279	5092	5182

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604783A - JOINT NETWORK MANAGEMENT SYSTEM

PROJECT
363

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	10726	5347	5334
Current Budget (FY 2006/2007 PB)	10279	5092	5182
Total Adjustments	-447	-255	-152
Net of Program/Database Changes			
Congressional Program Reductions	-156		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-291		
Adjustments to Budget Years		-255	-152

FY06/07 funds realigned to higher Army requirement

<u>C. Other Program Funding Summary</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
B95700 JOINT NETWORK MGT SYSTEM	9382	12587	11885	5222	3974	781	0	0	0	43831

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604783A - JOINT NETWORK MANAGEMENT SYSTEM

PROJECT

363

D. Acquisition Strategy: TRADOC approved Revision 2 to the JNMS Operational Requirements Document (ORD). Milestone A/B approval led to two contract awards to SAIC on 14 May 2001. The first contract, a cost-plus-fixed-fee (CPFF) and firm fixed price (FFP) contract, is for software integration/development, non-recurring engineering efforts, and optional hardware and software procurement for limited and full rate production quantities. This development contract provides the vehicle for the phased development of the JNMS operational baselines, combined build Key Performance Parameter (KPP) Threshold Baselines and subsequent Baselines. The second contract, a time-and-materials contract, covers tasks such as fielding, training, technical assistance, and an option for Post Deployment/Post Production Software Support (PD/PPSS). The SAIC contracts were awarded based on a competitive, best value source selection process. The IOT&E was conducted in 2QFY04. The Milestone C decision review was held in 3QFY04 resulting in Low Rate Initial Production (LRIP) approval. The Milestone Decision Authority is the Program Executive Officer, Command, Control, and Communications - Tactical (PEO C3T). A Limited User Test is scheduled for 4QFY05 to support a Full Rate Production Decision (FRPD) in 1QFY06 and the start of fieldings in 2QFY06.

The SAIC contract option for the development of software Build 3 will be awarded 1QFY06, and is scheduled to be completed by 4QFY07. Software Build 4 will begin 1QFY07 and completed in FY08.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604783A - JOINT NETWORK MANAGEMENT SYSTEM

PROJECT
363

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . JNMS Software Development	CFFF	SAIC - San Diego, CA	22369	7640	1-3Q	3389	2-3Q	3587	2-3Q	Continue	Continue	0
b . Hardware/Software Suites	FFP	SAIC - San Diego, CA	1972	0		0		0		0	1972	0
Subtotal:			24341	7640		3389		3587		Continue	Continue	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Integrated Logistics Support	Various	Misc	148	77	2Q	81	2Q	85	2Q	Continue	Continue	0
b . Software Development Support	Various	Misc	682	896	2Q	453	2Q	432	2Q	Continue	Continue	0
c . Contractor Engineering	MIPR	Various	1563	150	1-2Q	158	1-2Q	165	1-2Q	Continue	Continue	0
d . Government Engineering	MIPR	Various	3768	312	2Q	273	2Q	292	2Q	Continue	Continue	0
Subtotal:			6161	1435		965		974		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604783A - JOINT NETWORK MANAGEMENT SYSTEM

PROJECT
363

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Developmental Test Support	T&M	SAIC - San Diego, CA	1279	350	2Q	0		0		0	1629	0
b . Operational Test Support	T&M	Misc	3868	0		0		0		0	3868	0
c . Initial Operational Test & Evaluation (IOTE)		SAIC, San Diego Ca & Piscataway, NJ	478	0		0		0		0	478	0
Subtotal:			5625	350		0		0		0	5975	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Support	Various	Ft Monmouth, NJ	1523	578	1-4Q	545	1-4Q	528	1-4Q	Continue	Continue	0
b . JNMS MITRE Support	PWD	Eatontown, NJ	336	276	2Q	193	2Q	93	2Q	Continue	Continue	0
Subtotal:			1859	854		738		621		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604783A - JOINT NETWORK MANAGEMENT SYSTEM

PROJECT

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Project Total Cost:			37986	10279		5092		5182		Continue	Continue	0
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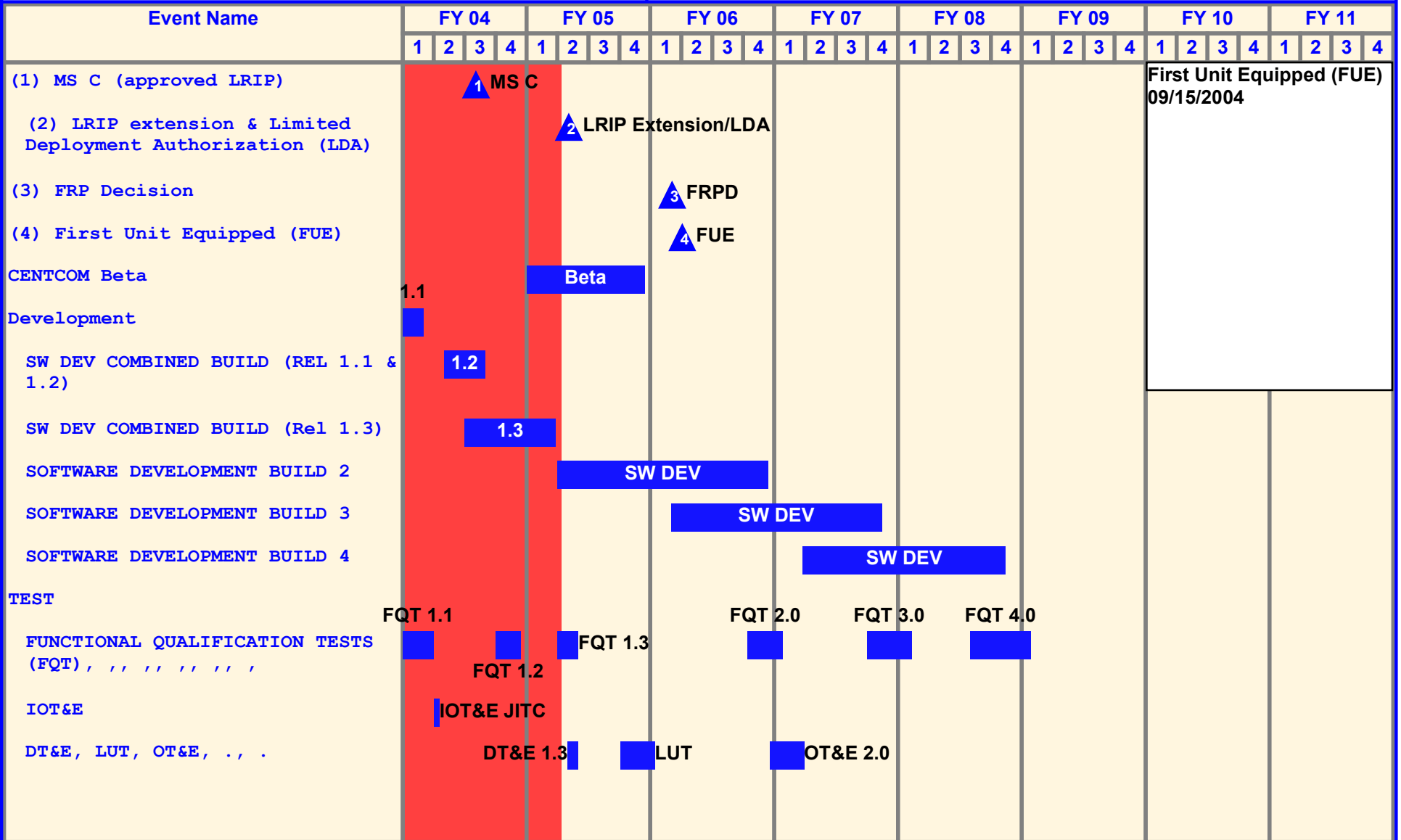
Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604783A - JOINT NETWORK MANAGEMENT SYSTEM

PROJECT
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Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604783A - JOINT NETWORK MANAGEMENT SYSTEM

PROJECT
363

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone C	3Q							
Build Rel 1.2/1.3	2-4Q	1Q						
SW Dev Build 2.0		1-4Q	1-4Q					
FQT 1.3		2Q						
DT 1.3		2Q						
OT 1.3		4Q						
SW Dev Build 3.0			1-4Q	1-4Q				
Full Rate Production Decision			1Q					
Material Release 1.3			1Q					
FUE			2Q					
Build 2.0 Release				2Q				
FQTBuild 2.0			3-4Q	1Q				
Build 3.0 release					2Q			
FQT Build 3.0				3-4Q	1Q			
SW Dev Build 4.0				2-4Q	1-4Q			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604801A - Aviation - Eng Dev					PROJECT C45	
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
C45 AIRCREW INTEGRATED SYS-ED	3227	3239	0	0	0	0	0	0	0	9445

A. Mission Description and Budget Item Justification: Project DC45 - Aviation Engineering Development: This project provides Engineering Development programs with improved aviator safety, survivability, and human performance that amplify the warfighting effectiveness and facilitates full-spectrum dominance of the Army aircraft including the AH-64 Apache/Longbow, CH-47 Chinook, UH/HH-60 Blackhawk, Light Utility Helicopter, and Armed Reconnaissance Helicopter. These programs include soldier systems and equipment which are unique and necessary for the sustainment, survivability, and performance of Army aircrews and troops on the future integrated battlefield. The Air Warrior program will provide the aircrew with a systems approach to noise protection, three-dimensional audio and external audio capability, microclimate conditioning, crash and post-crash survivability, concealment and environmental protection, ballistic protection, night vision capability and heads-up display, directed energy eye protection and flame/heat protection. Air Warrior will enable the Army Aviation Warfighter to meet the approved Operational Requirements Document mission length of 5.3 hours with aviators in full chemical/biological protective gear. Preplanned block improvements integrating new technologies into the Air Warrior ensemble will continue to enhance and maximize aircrew mission performance, comfort, aircrew station interface, safety, and survivability. These funds also resource improved laser protection against emerging new threat systems and product improvement of existing helmets to improve performance and increased commonality. Maximum advantage will be taken of simulation to reduce program technical risk through early user evaluation and to reduce program design and test cost and schedules. This program does not duplicate any aircraft platform program efforts. Both joint and service independent efforts continue to be pursued under the scope of this program.

Beginning in FY06 this funding will be under ACIS Engineering Development, PE 0604601A, Project S61.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue the integration of preplanned Air Warrior Block 2 improvements.	3227	2239	0	0
Evaluate integrated technologies for the development of high level ballistic protection for aviators.	0	1000	0	0
Totals	3227	3239	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604801A - Aviation - Eng Dev

PROJECT
C45

B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	2378	2292	2290
Current Budget (FY 2006/2007 PB)	3239	0	0
Total Adjustments	861	-2292	-2290
Net of Program/Database Changes			
Congressional Program Reductions	-48		
Congressional Rescissions			
Congressional Increases	1000		
Reprogrammings			
SBIR/STTR Transfer	-91		
Adjustments to Budget Years		-2292	-2290

FY 2006/2007: New PE 0604601A, Proj S61 assigned.

C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, A PE 0604601A PROJ S61 - EMD	0	0	2248	2291	2523	2620	2706	2805	Continue	Continue
RDTE, A PE 0603801A PROJ DB45 - ACIS AD	7101	6176	0	0	0	0	0	0	0	13277
RDTE, A PE 0603827, PROJ S51 - ACIS AD	0	0	3374	3443	3525	3619	4044	4040	Continue	Continue
Aircraft Procurement, Army SSN AZ3110 - ACIS	32848	29694	29352	34821	42127	38873	56594	42268	Continue	Continue

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)**February 2005**

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604801A - Aviation - Eng Dev

PROJECT

C45

D. Acquisition Strategy: Funds are under PE 0604601A – S61 after FY 2005. System Development and Demonstration efforts include the completion of the Air Warrior Electronic Data Manager (EDM) qualification testing to transition into Full Rate Production, the Aircraft Wireless Intercom System (AWIS), and integration of the Microclimate Cooling System onto the Army’s HH-60L Medivac Helicopter. The EDM is a kneeboard computer that provides aviators a moving map display, performance planning data, a digital note pad, and other capabilities to replace the paper data in the cockpit. The AWIS is a hands-free telecommunication device using radio signals for aircrew communication. Development efforts are awarded through competitive cost plus fixed fee contracts, or by Military Interdepartmental Purchase Requests (MIPRs) to other government agencies. High Level Ballistic Protection is congressionally funded for development of improved body armor. Funds are available only in the year of execution. A cost plus fixed fee contract is awarded as funds are received.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

COST (In Thousands)		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to	Total Cost
		Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
Total Program Element (PE) Cost		149661	154356	87034	99760	68334	50797	25308	14919	Continuing	Continuing
134	OBJ IND CBT WPN ENG DE	0	15762	0	0	0	0	0	0	0	15762
613	MORTAR SYSTEMS	34984	30884	2115	4009	13452	11374	935	0	0	108022
705	ADV PRECISION KILL WEAPON SYSTEM (APKWS) - SD&ED	45224	15296	10779	8696	17483	15966	5803	0	0	140613
AS1	SMALL ARMS IMPROVEMENT	8089	10895	0	0	0	0	0	0	0	27373
AS5	ARTILLERY MUNITIONS ENGINEERING DEVELOPMENT	22396	15052	1501	0	0	0	6108	6093	0	57163
AS6	COMMON REMOTELY OPERATED WEAPONS STATION (CROWS)	2865	3356	0	0	0	0	0	0	0	8802
AS8	XM395 PRECISION GUIDED MORTAR MUNITION (PGMM)	0	0	28259	47745	26202	18368	10943	8826	Continuing	Continuing
S23	SURF LNCH ADV MED RNG AIR-TO-AIR MSL (SLAMRAAM)	36103	63111	36102	29200	0	0	0	0	0	166191
S36	COURSE CORRECTING FUZE (CCF)	0	0	8278	10110	11197	5089	1519	0	0	36193

A. Mission Description and Budget Item Justification: This program element funds multiple efforts for engineering development of weapons and munitions systems.

Starting in FY06, funds have been realigned from Project 134 (Objective Individual Combat Weapon (OICW)), Project AS1 (Small Arms Improvements), and Project AS6 (Common Remotely Operated Weapons Station (CROWS)) to PE 0604601 Infantry Support Weapons, Projects S62, S63, and S64 respectively, to streamline the management, development, and testing of infantry support weapons and associated equipment.

Project 134 (OICW) funds the spiral development of the XM-29 Integrated Air Burst Weapons System, and is comprised of two increments. Increment one is the XM-8 Modular Assault Weapon, and increment two is the XM-25 Air Burst Assault Weapon.

FY06 Mortar Systems (613) completes the RDTE effort for the Mortar Fire Control System (MFCS), a revolutionary improvement in mortar capability seamlessly linking mortar fires in the future digital battlefield.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604802A - Weapons and Munitions - Eng Dev

Starting in FY07, funds provide for the System Development and Demonstration of the Lightweight Dismounted 81mm Mortar System (LDMS) enhancing the mobility of 81mm mortar users. LDMS will be compatible with all 81mm mortar rounds in production and development. Additionally, FY04/FY05 funds support Precision Guided Mortar Munition (PGMM) and FY 04 funds support the XM982 Short Range Practice Cartridge.

Project 705, the Advanced Precision Kill Weapon System (APKWS), is a highly accurate weapon that will complement the HELLFIRE missile in precision strikes against soft point targets and provide improved accuracy over the current 2.75-inch munition used on the AH-64 Apache, and OH-58 Kiowa Warrior.

Project AS1 (Small Arms Improvements) funds the development of technology to enhance lethality, target acquisition, fire control, training effectiveness, and reliability for current small arm weapons and ammunition systems. Funds for this project include several FY05 New Starts: Platform Integration of Crew Served Weapons; High Cap Feed Systems for the M240H Machine Gun (Aviation Variant); 5.56mm Light Weight Ammo; E50 Enhanced Cal. 50 Machine Gun Kit; and Enhance Optics for Rifles and Carbines.

FY06 Artillery Munitions Engineering Development (AS5) funds the Advanced Cannon Artillery Ammunition Program (ACA2P) Pre Production Engineering, a product improvement program for 105mm and 155mm families of extended range artillery munitions using common airframes for various payloads. FY05 funds ACA2P and Hybrid Propellant for the Future Combat System (FCS). ACA2P munitions have ballistic similitude intended to meet FCS and Force Entry range and ballistic requirements. Hybrid Propellant is a unique propellant under development for future application in small, medium and large caliber munitions. Hybrid propellant releases energy more efficiently than conventional propellants and provides future FCS munitions with: the highest possible muzzle velocity for extended ranges/lethality; the prospect of lighter barrels with less recoil, extended wear characteristics; and the ability to use heavier projectiles at standard muzzle velocities for greater lethality.

Project AS6 (CROWS) funds pre-production prototype remote mounting systems for heavy, medium, and light machine guns mounted on top of a variety of vehicles. These remote mounting systems reduce the Soldier's exposure to enemy fire by giving the Soldier the ability to acquire, track, and fire at targets from behind armor during day and night conditions. Funds for CROWS efforts include an FY05 New Start called CROWS Light, a smaller, lighter version of the current system.

In FY06, Project AS8 funds Increment 1 PGMM. The PGMM will be a precision strike round with advanced sensors, guidance systems and enhanced lethal mechanism technology. It will be capable of a first round defeat of high-value, hard-point targets such as bunkers, command and control centers and stationary lightly armored vehicles. The FY04/FY05 PGMM program was funded under Project 613 and is, therefore, not considered a new start.

Project S23, the Surface Launched Advanced Medium Range Air-To-Air Missile (SLAMRAAM), is the initial kinetic energy component of the Enhanced Area Air Defense System (EAADS), and AMD Objective Force system. SLAMRAAM's force protection mission is to engage the low-altitude aerial threats out to 18km.

In FY06, funds are provided in Course Correcting Fuze (CCF) (S36) for design, development, assembly and test.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

CCF is a low-cost, fuze-sized module that is intended to replace a NATO standard fuze on legacy and future artillery projectiles. CCF will effectively reduce target delivery error of conventional artillery munitions and reduce the number of projectiles per fire mission. The FY04 CCF program was funded under Project AS5 and is, therefore, not considered a new start.

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	125885	94190	80507
Current Budget (FY 2006/2007 PB)	154356	87034	99760
Total Adjustments	28471	-7156	19253
Net of Program/Database Changes			
Congressional Program Reductions	-2308		
Congressional Rescissions			
Congressional Increases	35200		
Reprogrammings			
SBIR/STTR Transfer	-4451		
Adjustments to Budget Years		-7156	19253

FY 2005: Congressional increases (+35.2M). Project 613 (+\$12.5M) for PGMM. Project AS5 (+\$13.0M) for ACAAP. Project AS5 (+\$2.7M) for Hybrid Propellant. Project 705 (+\$3.5M) for APKWS. Project AS6 (+\$3.5M) for CROWS.

FY 2006: Funds realigned (+\$8.3M) for CCF - Project S36. Funds realigned (+\$1.5M) for ACAAP - Project AS5. Funds increased (+\$4.6M) for APKWS - Project 705. Funds realigned (-\$6.3M) from Project AS1 to PE 0604601, S63, Small Arms Improvements. Funds realigned (-\$14.5M) from Project 134 to PE 0604601 (S62), Objective Individual Combat Weapon (+\$5.1M) and to other high priority DA requirements (\$9.4M).

FY 2007: Funds realigned (+\$10.1M) for CCF - Project S36. Funds increased (+\$9.2M) for PGMM - Project AS8. Funds increased (+\$3.5M) for APKWS - Project 705. Funds realigned (-\$3.5M) to higher priority requirements.

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
613 MORTAR SYSTEMS	34984	30884	2115	4009	13452	11374	935	0	0	108022

A. Mission Description and Budget Item Justification: Mortar Fire Control System (MFCS) - This program provides funds to complete development and type classify items that will enhance the effectiveness, lethality, versatility, mobility, and accuracy of mortar systems. Current mortar systems include conventional ammunition with a variety of fuzing, weapons that range from man-portable 60mm to vehicle-mounted 120mm mortars, and related equipment such as fire control systems, mortar ballistic computers, training devices, and ammunition. Current funding for this project continues development of the M95/M96 digital Mortar Fire Control System-Heavy (MFCS-H) and the Lightweight Handheld Mortar Ballistic Computer (LHMBC). The MFCS is a revolutionary improvement in mortar capability, seamlessly linking mortar fires in the future digital battlefield. The MFCS (Heavy) provides an on-board fire control system that includes a fire control computer, position navigation system, and gun pointing system. The MFCS allows mortar crews to set-up and fire in one minute or less, down from the current eight minutes and accuracy is increased by a factor of four. Shorter exposure times increase crew survivability. The MFCS is fully compatible with the Advanced Field Artillery Tactical Data System (AFATDS), increasing situational awareness and reducing the probability of fratricide. The LHMBC will provide dismounted mortar users with a lightweight, handheld ruggedized mortar ballistic calculator that will be digitally linked to the fire control network. The LHMBC consists of the Army's Ruggedized Personal Digital Assistant loaded with Mortar Fire Control System Software that has been modified for use on that platform. The LHMBC is intended to replace the antiquated M23 MBC on dismounted mortars. The M23 is no longer logistically supportable.

Precision Guided Mortar Munition (PGMM) - This program provides funds to perform system and technical development that will enhance the effectiveness, lethality, versatility, mobility, and accuracy of mortar systems. FY 2004-FY 2008 funds provide for start and completion of System Development & Demonstration (SDD) of a Increment 1 PGMM. The PGMM will be a precision strike round using advanced sensors, guidance systems and enhanced lethal mechanism technology. It will be capable of a first round defeat of high-value, hard-point targets such as bunkers, command and control centers, and stationary lightly armored vehicles. The capability to hit point targets in built-up areas makes this especially valuable in Military Operations in Urban Terrain (MOUT) and Military Operations Other Than War/Stability and Support Operations (MOOTW/SASO) situations. First round hit capability reduces the overall logistical burden, a critical goal for early entry forces. Beginning in FY 2006 funding for PGMM will be reported under project AS8, XM395 Precision Guided Mortar Munition.

The 120mm XM932 Short Range Practice Cartridge (SRPC) will allow mortar crewmen to practice 120mm mortar firing techniques on ranges with limited impact areas.

Lightweight Dismounted 81mm Mortar System: This program provides funds for System Development and Demonstration of the Lightweight Dismounted 81mm Mortar System (LDMS). The LDMS will greatly enhance the mobility of 81mm mortar users. The LDMS is intended to weigh 40% (T) to 60% (O) less than the current M252 81mm Mortar system. The new system, which will be developed using requirements developed jointly by the Army and USMC, will be

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compatible with all 81mm mortar rounds in production and in development. The new LDMS will greatly enhance the effectiveness and mobility of dismounted mortar users, a need demonstrated during OEF and OIF.

Mortar Anti-Personnel Anti-Material (MAPAM) - The XM1061 (M734A1 Multi-option Fuze), and the XM1046 (M783 Point Detonating Fuze) cartridges are for use with the 60mm M224 Lightweight Company Mortar System (LWCMS). This improved ammunition provides the soldier with as much as a 70% increase in lethality over conventional US ammunition due to a pre-fragmented Ball Bearing Matrix Body. The FY05 Congressional plus up will be utilized to type classify two 60mm MAPAM cartridges and begin evaluation of the 81mm MAPAM cartridge. There is interest in these cartridges from the Rangers at Ft. Benning and the USMC.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
MFCS: Hardware Development	1369	1595	1167	0
MFCS: Software Development	633	1973	540	0
MFCS: Test & Evaluation	1955	266	280	0
MFCS: Program Management	161	121	128	0
MFCS: Development Engineering	470	860	0	0
PGMM: SD&D Subsystem Test and System Integration	25000	15765	0	0
PGMM: System Engineering	2240	3140	0	0
PGMM: Program Management	1331	1711	0	0
PGMM: Development Test & Evaluation	659	1620	0	0
LDMS SDD Subsystem Test and Test Integration	0	0	0	2803
LDMS Systems Engineering	0	0	0	971
LDMS Program Management	0	0	0	235
120mm SRPC: Development	715	0	0	0
120mm SRPC: Test and Evaluation	400	0	0	0
120mm SRPC: Program Management	51	0	0	0
MAPAM: Systems Engineering & Development	0	3833	0	0
Totals	34984	30884	2115	4009

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Other Procurement, Army-2-: K99300 (MFCS)	38029	14341	18877	38452	0	0	0	0	0	109699
0604802 AS8 Precision Guided Mortar Munition (PGMM)	0	0	28259	47745	26202	18368	10943	8826	184300	249250

C. Acquisition Strategy: The acquisition strategy for Mortar Fire Control System includes product development efforts performed by the government and industry. ARDEC, Picatinny, NJ will develop all versions of Mortar Fire Control software for all platforms, and will also provide post deployment software support. Most hardware and integration efforts will be performed by Honeywell Defense and Space Electronic Systems. However, hardware for the light weight handheld computer, as required by the MFCS Operational Requirements Document (ORD) for dismounted operations, will be procured through the PM Common Hardware/Software Task contract.

The Precision Guided Mortar Munition (PGMM) program had a successful Milestone B program review to begin the Systems Development and Demonstration (SDD) phase. Joint Requirements Oversight Council (JROC) approval of the Operational Requirements Document (ORD) occurred on 27 April 2004. The SDD contract was awarded 1 December 2004.

The 120mm XM932 Short Range Practice Cartridge is being developed by the government at ARDEC, Picatinny, NJ.

LDMS is being developed by the government and industry. Initial Scientific & Technical Objective (STO) work will be followed by further concept refinement and proveout. The program will move toward Milestone B and award an SDD contract in FY07 utilizing full and open competition to select a prime contractor.

The FY05 MAPAM Congressional plus up will be utilized to type classify two 60mm MAPAM cartridges and begin evaluation of the 81mm MAPAM cartridge.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MFCS: Software Development Lightweight Handheld Mortar Ballistic Computer (LHMBC)	MIPR	ARDEC, Picatinny, NJ	4323	900	2Q	600	2Q	0		0	5823	0
b . MFCS: Hardware Development	C/FP	Honeywell Defense Electronics Systems, Albuquerque, NM	857	0		0		0		0	857	0
c . MFCS: Fire Direction Center Hardware Development	MIPR	ARDEC, Picatinny, NJ	800	0		0		0		0	800	0
d . LHMBC: Hardware Development	MIPR	ARDEC, Picatinny, NJ	473	0		0		0		0	473	0
e . LHMBC: Hardware	MIPR	Common Hardware Software, Ver 2 (CHS2) Fort Monmouth, NJ	400	26	2Q	0		0		0	426	0
f . MFCS Hardware Product Improvement	C/FP	Honeywell Defense Electronics Systems, Albuquerque, NM	0	859	3Q	615	2Q	0		0	1474	0
g . MFCS Software Development		MTA	0	500	2Q	0		0		0	500	0

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
h . MFCS Software Development	T&M	HTPI, Picatinny, NJ	0	573	3Q	0		0		0	573	0
i . PGMM: SD&D - Subsystem Test & System Integration	C/CPIF/AF	Alliant Techsystems, Plymouth, MN	25000	15765	1Q	0		0		0	40765	0
j . 120mm SRPC: Development	MIPR	ARDEC, Picatinny, NJ	335	0		0		0		0	335	0
k . 120mm SRPC: Development	SS/FP	Pocal Industries, Moscow, PA	380	0		0		0		0	380	0
l . LDMS: Subsystem Test & System Integration	C/CPIF	TBS	0	0		0		2803	1Q	0	2803	0
m . MAPAM: Developmental Engineering	FFP	RUAG Munitions, Switzerland	0	2189	2Q	0		0		0	2189	0
Subtotal:			32568	20812		1215		2803		0	57398	0

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MFCS: Development Engineering	MIPR	ARDEC, Picatinny, NJ	5145	0		300	2Q	0		0	5445	0
b . MFCS: Logistics Support	MIPR	TACOM-RI, Rock Island, Ill	676	252	2Q	0		0		0	928	0
c . MFCS: Development Support	T&M	TBS	0	0		200	2Q	0		0	200	0
d . MFCS: Development Support	T&M	CSC, El Segundo, CA	400	0		0		0		0	400	0
e . LHMCB: Development Engineering	MIPR	ARDEC, Picatinny, NJ	496	710	2Q	0		0		0	1206	0
f . LHMCB: Development Engineering	T&M	Robbins Gioia, Alexandria, VA	40	0		0		0		0	40	0
g . LHMCB: Development Engineering	FFP	Camber, Huntsville, AL	130	0		0		0		0	130	0
h . MFCS Camber Eng Spt	T&M	Camber, Huntsville, AL	0	320	2Q	0		0		0	320	0
i . MFCS EVM Task	T&M	MTS	0	38	2Q	0		0		0	38	0
j . MFCS ARDEC ILS	MIPR	ARDEC	0	250	2Q	0		0		0	250	0

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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . PGMM: Systems Engineering	MIPR	ARDEC, Picatinny, NJ	2240	3140	2Q	0		0		0	5380	0
l . LDMS: Systems Engineering	MIPR	ARDEC, Picatinny, NJ	0	0		0		971	1Q	0	971	0
m . MAPAM: Engineering Support	MIPR	ARDEC, Picatinny, NJ	0	759	2Q	0		0		0	759	0
Subtotal:			9127	5469		500		971		0	16067	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MFCS: Development Test & Evaluation	MIPR	ATEC, Alexandria, VA	3635	100	3Q	0		0		0	3735	0
b . LHMCB: Development Test & Evaluation	MIPR	ATEC, Alexandria, VA	1371	0		0		0		0	1371	0
c . MFCS: Information Assurance	MIPR	CECOM, Ft Monmouth, NJ	178	0		0		0		0	178	0

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III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
d . LHMCB: Information Assurance	MIPR	CECOM, Ft Monmouth, NJ	150	126	3Q	100	2Q	0		0	376	0
e . MFCS: Development Test	MIPR	ARDEC, Picatinny, NJ	100	0		200	2Q	0		0	300	0
f . LHMCB: Development Test (PQT)	MIPR	ARDEC, Picatinny, NJ	434	40	3Q	0		0		0	474	0
g . PGMM: Development Test and Evaluation	MIPR	ATEC, Alexandria, VA	659	1620	2Q	0		0		0	2279	0
h . 120mm SRPC: Test and Evaluation	MIPR	Yuma Proving Ground, Yuma, AZ	400	0		0		0		0	400	0
i . MAPAM: Test and Evaluation	MIPR	Yuma Proving Ground, Yuma, AZ	0	684	2Q	0		0		0	684	0
Subtotal:			6927	2570		300		0		0	9797	0

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Mortar Fire Control System: Program Management	In-House	PM Mortars, Picatinny, NJ	2033	121	2Q	100	2Q	0		0	2254	0
b . PGMM: Program Management	In-House	PM Mortars, Picatinny, NJ	1331	1711	2Q	0		0		0	3042	0
c . 120mm SRPC	In-House	PM Mortars, Picatinny, NJ	50	0		0		0		0	50	0
d . LDMS: Program Management	In-House	PM Mortars, Picatinny, NJ	0	0		0		235	1Q	0	235	0
e . MAPAM: Program Management	In-House	PM Mortars, Picatinny, NJ	0	201	2Q	0		0		0	201	0
Subtotal:			3414	2033		100		235		0	5782	0
Project Total Cost:			52036	30884		2115		4009		0	89044	0

Schedule Profile (R4 Exhibit)

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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) PGMM SDD Contract Award					▲1																											
SYSTEM DEVELOPMENT & DEMONSTRATION-Increment I	PGMM Increment 1																															
(2) PGMM MILESTONE B, Increment One																																
MFCS (LHMBC) System Development and Demonstration Phase	MFCS (LHMBC)																															
(3) LHMBC - PQT&E																																
(4) LHMBC - IOT&E																																
(5) LHMBC Type Classification																																
(6) LHMBC FUE																																
(7) Lightweight Dismounted 81mm Mortar System (LDMS) - Start Increment 1																																
(8) Short Range Practice Cartridge-Contract Award																																
(9) MAPAM Contract Award																																

Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
LHMBC Production Qualification Test	3Q							
LHMBC IOT&E	4Q							
LHMBC Type Classification		4Q						
LHMBC First Unit Equipped		4Q						
PGMM Milestone B/Start SDD, Increment 1	3Q							
LDMS Award SDD Contract				1Q				
LDMS Systems Integration					1Q			
SRPC Contract Award	4Q							
SRPC XM932 Cartridge Deliveries		4Q						
SRPC Perform Firing Tables Tests			1Q					
MAPAM Contract Award		2Q						
MAPAM Type Classification			4Q					

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
705 ADV PRECISION KILL WEAPON SYSTEM (APKWS) - SD&ED	45224	15296	10779	8696	17483	15966	5803	0	0	140613

A. Mission Description and Budget Item Justification: The Advanced Precision Kill Weapon System (APKWS) is a family of precision-guided rockets that combines a newly designed guidance section with existing 2.75-inch munition components and launch equipment. The APKWS is a highly accurate weapon that will complement the HELLFIRE missile in a precision strike against soft point targets. The APKWS will provide improved accuracy over the current 2.75-inch munition used on the AH-64 Apache, OH-58 Kiowa Warrior and armed reconnaissance helicopters. The APKWS Block 1 program will develop, test and qualify a laser guided 2.75-inch munition. FY06/07 funding supports development/qualification of an insensitive warhead and a more insensitive compliant rocket motor. The APKWS is expected to provide a substantial increase in the number of kills over the unguided Hydra 70 rocket and a reduction in collateral damage to minimize fratricide.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Define and develop system requirements and preliminary design for precision guided rocket including hardware and software.	45224	10692	0	0
Develop test plans, test support equipment, and testing	0	2966	3291	2840
Perform government engineering support.	0	1638	1289	1152
Define and develop system requirements and design an insensitive warhead and rocket motor for APKWS	0	0	6199	4704
Totals	45224	15296	10779	8696

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
C70301 APKWS (Advanced Precision Kill Weapon System)	0	6852	27931	88362	98248	113065	105743	105580	1145300	1691081
0203802, project 786 (APKWS Simulator Upgrade)	0	4659	4879	5227	5462	5656	6049	4789	0	36721

C. Acquisition Strategy: Development of the APKWS will be sole source. The APKWS Block 1 development program is a 30-month effort. The Low Rate Initial Production (LRIP) and Full Rate Production will be sole source. The U.S. Army Aviation and Missile Command (AMCOM) will provide assistance and technical expertise during the development effort.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prime Contract	CPIF/AF	General Dynamics Armament and Technical Products, Inc.	62880	5443	2Q	4350	2Q	2614	2Q	20111	95398	0
b . Support Costs	Various	Various	391	792	1-4Q	789	1-4Q	908	1-4Q	4052	6932	0
c . Development Engineering	Various	Various	1197	957	1-4Q	1062	1-4Q	1185	1-4Q	3148	7549	0
d . Development Engineering -Distributed Aperture Semi-Active Laser Seeker (DASALS)		BAE	0	3500		0		0		0	3500	0
Subtotal:			64468	10692		6201		4707		27311	113379	0

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Support	Various	Various	1353	2966	1-4Q	3276	1-4Q	2887	1-4Q	7678	18160	0
Subtotal:			1353	2966		3276		2887		7678	18160	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support	Various	Various	769	1638	1-4Q	1302	1-4Q	1102	1-4Q	4263	9074	0
Subtotal:			769	1638		1302		1102		4263	9074	0

Project Total Cost:			66590	15296		10779		8696		39252	140613	0
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Schedule Profile (R4 Exhibit)

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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11																							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																				
APKWS																																																				
(1) MS C									▲ MS C																																											
(2) RFP Guided	▲ RFP																																																			
System Design & Development	SDD																																																			
(3) CDR	▲																																																			
System Qualification Test (SQT), Limited User Tests (LUT)									SQT				LUT																																							
First-Article Test (FAT)									FAT																																											
Initial Operational Test (IOT)													IOT																																							
(4) IPF/LLI/LRIP Contract Award									▲																																											
LRIP													LRIP																																							
(5) FRP DR																	▲																																			
FRP																	FRP																																			
IM Warhead Development													Warhead Dev																																							
(6) IM Warhead ECP																	▲																																			
IM Motor Development																	Motor Dev																																			
(7) IM Motor ECP																					▲																															

Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
APKWS Critical Design Review (CDR)	2Q							
APKWS Testing (SQT,LUT, IOT)		1-3Q	1-2Q	3Q				
Milestone C		4Q						
IM Warhead Contract Award			1Q					
IM Warhead CDR			4Q					
IM Warhead Testing				1Q				
IM Warhead ECP				3Q				
IM Rocket Motor Contract Award				1Q				
IM Rocket Motor CDR					2Q			
IM Rocket Motor Testing					3Q			
IM Rocket Motor ECP						3Q		
IPF/LLI/LRIP Contract Award		3Q						
FRP Design Review/Contract Award					1Q			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
AS5

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
AS5 ARTILLERY MUNITIONS ENGINEERING DEVELOPMENT	22396	15052	1501	0	0	0	6108	6093	0	57163

A. Mission Description and Budget Item Justification: This project funds multiple efforts; the Course Correcting Fuze (CCF), the Advanced Cannon Artillery Ammunition Program (ACA2P), the Dual Purpose Integrated Conventional Munitions (DPICM) and the Hybrid Propellant.

The CCF is a low cost, fuze-sized module that is intended to replace a "NATO standard" fuze on existing stockpile and future conventional cannon artillery projectiles. The CCF corrects the ballistic trajectory of the projectile to reduce delivery errors and thus improves projectile accuracy. CCF will effectively reduce target delivery error of conventional artillery munitions and reduce the number of projectiles required to execute a fire mission. The CCF will benefit 155mm projectiles as well as the family of 105mm projectiles. The increase in effectiveness offered by the CCF gives commanders the operational capability to defeat more targets with the same basic load, while reducing the logistical burden associated with the current mission requirements.

ACA2P is a product improvement program for 105mm and 155mm families of extended range artillery munitions using common airframes for various payloads. The munitions have ballistic similitude intended to meet the Future Combat System (FCS) and Force Entry range and ballistic requirements. The common carrier designs have a re-configurable base, provide additional capability not in the current inventory, i.e. multi-spectral smoke, IR- Illumination and IR Obscurant Smoke, have increased lethality through Pre-formed Fragments (Pff) technology and are interoperable with multiple US howitzer platforms. The common carrier permits quickly field future cargo needs, i.e. Non-Lethal.

The DPICM program will develop an integrated package for Integrated Chip technology to enhance safety, performance, producibility of all electronic self-destruct fuzes for DPICM.

Hybrid Propellant is a unique propellant under development for future application in small, medium and large caliber munitions. It combines the advanced chemistry used in BALL POWDER Propellants with the optimum geometry of perforated propellants - resulting in the highest possible performance, which can be tailored to meet specific gun applications. Hybrid propellant releases energy more efficiently than conventional propellants and provides future FCS munitions with: the highest possible muzzle velocity for extended ranges/lethality; the prospect of lighter barrels with less recoil, extended wear characteristics; and the ability to use heavier projectiles at standard muzzle velocities for greater lethality. Hybrid propellant is also more environmentally friendly, and unlike conventional propellants, can be produced with 100% of the raw materials from the US. Hybrid propellant has the potential to drastically reduce gun barrel heat input thus increasing tube life and rates of fire for FCS applications. Under this effort, two deliverables (one 10,000 lb. lot and one 60,000 lb. lot of Hybrid propellant) will be manufactured and delivered for the 155mm Howitzer application. Both lots will be subjected to Ballistic Uniformity testing, Burning Embers/Residue testing, and Ballistic Temperature Sensitivity

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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Assessment. A sample of Hybrid propellant, on the order of a few hundred pounds, will also be manufactured, delivered, and ballistically tested for Proof of Principle on a 105mm Howitzer platform.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
CCF Design and develop inductive data link	500	0	0	0
CCF Design, develop and integrate gun-hardened system and components	11773	0	0	0
ACA2P Safety Assessment and Gun Qualification	8199	12468	0	0
ACA2P Pre Production Engineering	0	0	1501	0
Develop Integrated Chip Technology for DPICM electronic self-destruct fuzes	962	0	0	0
Hybrid Propellant initial ballistic temperature assessment	150	0	0	0
Fabricate and Characterize Hybrid Propellant	250	0	0	0
Hybrid Propellant heat input assessment	562	0	0	0
Hybrid Propellant: Manufacture and Test (Ballistic and Insensitive Munitions)	0	2584	0	0
Totals	22396	15052	1501	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
0604802A - Weapons and Munition - Eng Dev Project S36 Course Correcting Fuze (CCF)	0	0	8278	10110	11197	5089	1519	0	0	36193

C. Acquisition Strategy: The Army plans to leverage the Navy Guidance Integrated Fuze (GIF) Technology Development (TD) program. The Army is cooperatively working with the Navy to include an Army System Development and Demonstration (SDD) option as part of the Navy TD contract. This option will be executed and transferred to the Army upon successful completion Army Milestone B in FY06. Milestone C is planned for FY08 allowing Low Rate Initial Production to continue for two years. Full Rate Production will begin in FY10.

The ACA2P acquisition fills artillery capability gaps (Bi-Spectral smoke and IR Illumination). Program objectives are to modernize the inventory through replenishment buys in order to meet FCS and Force Entry requirements for extended range, ballistic similitude, insensitive munitions and lethality. 155mm XM0121 IM HE, XM2002 Multi-Spectral Smoke and 105mm XM0125 IM HE Pff entered Safety Assessment in FY04.

The current DPICM SDF contract was modified.

Hybrid Propellant was added to the existing Defense Ordnance & Warheads Technology Consortium (DOTC) contract through a contract modification.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
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0604802A - Weapons and Munitions - Eng Dev

PROJECT
AS5

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CCF Contracts	Various	Various	8738	0		0		0		0	8738	0
b . ACA2P System Integrator	SS/FFP	GD-OTS, St Petersburg FL	9620	5200	2Q	0		0		0	14820	0
c . ACA2P Pre Production Engineering	SS/FFP	GD-OTS, St Petersburg FL	0	0		1501	2Q	0		0	1501	0
d . Hybrid Propellant Fabricate and Characterize	SS/CPAF	GD-OTS, St Marks Powder, St Marks FL	205	1150	2Q	0		0		0	1355	0
e . Hybrid Propellant: Combustable Cases	SS/CPAF	Armtec, Coachella, CA	0	100	2Q	0		0		0	100	0
f . Hybrid Propellant: Igniter Assemblies	SS/CPAF	GATP, Camden, AR	0	50	2Q	0		0		0	50	0
g . Hybrid Propellant Data Collection and Analysis	SS/CPAF	Veritay, East Amherst NY	200	0		0		0		0	200	0
h . DPICM Contract	SS/FFP	KDI, Cincinnati OH	822	0		0		0		0	822	0
i . Future Fuze Improvements			0	0		0		0		12201	12201	0
Subtotal:			19585	6500		1501		0		12201	39787	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
AS5

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Government Support-CCF	In House/MIP R	PM CAS/ARDEC, Picatinny NJ	4345	0		0		0		0	4345	0
b . Product Manager's Office-ACA2P	In House	PM CAS, Picatinny NJ	500	868	1-4Q	0		0		0	1368	0
c . Government IPT Support-ACA2P	MIPR	ARDEC, Picatinny, NJ	1200	2000		0		0	1Q	0	3200	0
d . Government IPT Support-DPICM	MIPR	ARDEC, Picatinny NJ	140	0		0		0		0	140	0
e . Government IPT Support-Hybrid Propellant	MIPR	ARDEC, Picatinny NJ	307	384	2Q	0		0		0	691	0
f . Hybrid Propellant: 155mm gun tubes	MIPR	Watervliet Arsenal, Watervliet, NY	0	300	2Q	0		0		0	300	0
g . Hybrid Propellant: Government IPT Support-Projectiles	MIPR	Rock Island, IL	0	600	2Q	0		0		0	600	0
Subtotal:			6492	4152		0		0		0	10644	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CCF Testing	Various	Various	500	0		0		0		0	500	0
b . ACA2P Performance & Long Range Testing	MIPR	Yuma Proving Grounds, Yuma AZ	300	2400	3Q	0		0		0	2700	0
c . ACA2P Flight Simulation Testing	MIPR	Aberdeen Proving Ground, Aberdeen MD	300	500	3Q	0		0		0	800	0
d . ACA2P Smoke & Illumination Testing	MIPR	Dugway Proving Ground, Dugway UT	300	1000	3Q	0		0		0	1300	0
e . ACA2P Static Illumination Testing	MIPR	Crane Army Ammunition Activity, Crane IN	200	500	4Q	0		0		0	700	0
f . Hybrid Propellant Testing	MIPR	ARDEC, Picatinny, NJ	50	0		0		0		0	50	0
g . Hybrid Propellant Testing	MIPR	Yuma Proving Grounds, Yuma, AZ	200	0		0		0		0	200	0
Subtotal:			1850	4400		0		0		0	6250	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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PROJECT
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:												
Project Total Cost:			27927	15052		1501		0		12201	56681	0

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
AS5

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ACA2P	Gun Qualification/Safety Assessment																															
DPICM																																
Hybrid Propellant																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
AS5

<u>Schedule Detail</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
CCF Critical Design Review	3Q							
CCF Testing	4Q							
ACA2P Contract Award	4Q	2Q						
ACA2P Testing	3-4Q	3-4Q						
ACA2P Analysis		3Q						
ACA2P Pre Production Engineering			1-4Q					
DPICM Contract Award	2Q							
Hybrid Propellant Contract Awards	2Q	2Q						
Hybrid Propellant Testing	3-4Q							

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
AS8

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
AS8 XM395 PRECISION GUIDED MORTAR MUNITION (PGMM)	0	0	28259	47745	26202	18368	10943	8826	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program provides funds to perform system and technical development that will enhance the effectiveness, lethality, versatility, mobility, and accuracy of mortar systems. FY 2006-FY 2008 funds provide for the continuation and completion of System Development & Demonstration (SDD) of an Increment 1 PGMM. The PGMM will be a precision strike round with advanced sensors, guidance systems and enhanced lethal mechanism technology. It will be capable of a first round defeat of high-value, hard-point targets such as bunkers, command and control centers and stationary lightly armored vehicles. The capability to hit point targets in built-up areas makes this especially valuable in Military Operations in Urban Terrain (MOUT) and Military Operations Other Than War/Stability and Support Operations (MOOTW/SASO) situations. First round hit capability reduces the overall logistical burden, a critical goal for early entry forces. This program is initially funded in FY 2004 and FY 2005 under PE 654802A Project D613. Beginning in FY 2006 funding for PGMM has been transferred to project AS8. This project is therefore not considered a new start.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
PGMM: SD&D Subsystem Test and System Integration	0	0	20087	39277
PGMM: System Engineering	0	0	3553	3643
PGMM: Program Management	0	0	2429	2715
PGMM: Development Test & Evaluation	0	0	2190	2110
Totals	0	0	28259	47745

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
AS8

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
0604802A 613	37069	30884	0	0	0	0	0	0	0	67953
Procurement, Army Ammunition- E86200 (CTG, Mortar, 120mm, PGMM)	0	0	0	0	23028	19964	9734	12224	184300	249250

C. Acquisition Strategy: PGMM program Acquisition Decision Memorandum (ADM) and Acquisition Program Baseline (APB) were approved on 21 May 2004. The PGMM SDD contract was awarded 1 December 2004. The FY 2006 and FY 2007 funds are provided as a continuation of the SDD contract that was initiated with FY 2004 Funds.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
AS8

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . SD&D- Subsystem Test & System Integration	CPIF/AF	Alliant Techsystems, Plymouth, MN	0	0		20087	1Q	39277	1Q	Continue	Continue	0
Subtotal:			0	0		20087		39277		Continue	Continue	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Systems Engineering	MIPR	ARDEC, Picatinny, NJ	0	0		3553	1Q	3643	1Q	Continue	Continue	0
Subtotal:			0	0		3553		3643		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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PROJECT
AS8

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Design Verification Testing (DVT)	MIPR	Yuma Proving Grounds, Yuma. AZ	0	0		1000	3Q	1500	2Q	Continue	Continue	0
b . Training Simulator Testing	MIPR	PEO Simulation, Training, and Instrumentation, Orlando, FL	0	0		120	1Q	100	1Q	0	220	0
c . System Integration Testing	MIPR	Yuma Proving Grounds, Yuma, AZ	0	0		500	2Q	0		0	500	0
d . User Experiment Test	MIPR	Ft. Benning, GA	0	0		200	2Q	200	1Q	0	400	0
e . Misc Test Support	MIPR	Various	0	0		370	1Q	310	1Q	0	680	0
Subtotal:			0	0		2190		2110		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	In-House	PM Mortars, Picatinny, NJ	0	0		1760	1Q	1826	1Q	Continue	Continue	0
b . Program Management Support	T&M	Various	0	0		669	1Q	889	2Q	0	1558	0
Subtotal:			0	0		2429		2715		Continue	Continue	0
Project Total Cost:			0	0		28259		47745		Continue	Continue	0

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
AS8

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
SYSTEM DEVELOPMENT & DEMONSTRATION-Increment I	PGMM Increment 1																															
Design Verification Test	(1) IOT&E																															
(1) IOT&E	(2) MILESTONE C, INCREMENT ONE																															
(2) MILESTONE C, INCREMENT ONE	(3) MATERIEL RELEASE, PGMM Increment 1, (4) IOC																															
PRODUCTION & DEPLOY (PGMM Increment 1)	(5) FUE																															
Full Rate Production (PGMM Increment 1)	SYSTEM DEVELOPMENT & DEMONSTRATION-Increment 2																															
(3) MATERIEL RELEASE, PGMM Increment 1, (4) IOC	(1) IOT&E																															
(5) FUE	(2) MILESTONE C, INCREMENT ONE																															
SYSTEM DEVELOPMENT & DEMONSTRATION-Increment 2	(3) MATERIEL RELEASE, PGMM Increment 1, (4) IOC																															
	(5) FUE																															
	SYSTEM DEVELOPMENT & DEMONSTRATION-Increment I																															
	Design Verification Test																															
	(1) IOT&E																															
	(2) MILESTONE C, INCREMENT ONE																															
	PRODUCTION & DEPLOY (PGMM Increment 1)																															
	Full Rate Production (PGMM Increment 1)																															
	(3) MATERIEL RELEASE, PGMM Increment 1, (4) IOC																															
	(5) FUE																															
	SYSTEM DEVELOPMENT & DEMONSTRATION-Increment 2																															

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
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PROJECT
AS8

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Continue SD&D, Incr 1 (follow-on from Proj 613)			1Q					
Design Verification Test					1-4Q			
Limited User Test (LUT)					3Q			
LRIP					4Q			
Milestone C					4Q			
Start SDD, Increment 2						1Q		
IOTE							3Q	
FUE							4Q	
IOC							4Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
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PROJECT
S23

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S23 SURF LNCH ADV MED RNG AIR-TO-AIR MSL (SLAMRAAM)	36103	63111	36102	29200	0	0	0	0	0	166191

A. Mission Description and Budget Item Justification: Surface Launched Advanced Medium Range Air-To-Air Missile (SLAMRAAM) is the initial kinetic energy component of Integrated Air & Missile Defense (IAMD), an Air and Missile Defense (AMD) Future Force system. The Short Range Air Defense (SHORAD) Project Office merged with Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) Project office on January 11, 2005 to become the Cruise Missile Defense Systems (CMDS) Project Office. On January 13, 2005 the Program Executive Office for Air, Space and Missile Defense and the Program Executive Office for Tactical Missiles merged to become the Program Executive Office for Missiles and Space (PEOMS). SLAMRAAM is a Missiles and Space System of Systems, consisting of a launcher platform, AIM-120 Advanced Medium Range Air-to-Air Missiles (AMRAAM), a common Army vehicle, launch rails, launcher electronics, on-board command, control, communications, computer (C4) components, Sentinel (Enhanced Target Range and Classification) Sensor, other external Sensors, and an Integrated Fire Control Station (IFCS). SLAMRAAM is a lightweight, day or night, adverse weather, non-line-of-sight (NLOS) fire unit for countering cruise missile (CM), low altitude rotary wing (RW), fixed wing (FW), unmanned aerial vehicle (UAV), and reconnaissance, surveillance, and target acquisition (RSTA) platforms. It supports clutter engagements in close combat areas where maneuvering forces and their supporting units operate. SLAMRAAM's force protection mission is to engage the low-altitude aerial threats out to 18km. SLAMRAAM IFCS is the initial incremental System of System (SoS) capability which delivers the command and control fire control and communication connectivity. This initial SLAMRAAM build is critical to SoS, since it supports smart evolution of the follow-on capabilities.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Product Development	23146	47566	22110	9295
Support Cost	773	1004	372	350
Test and Evaluation	4795	9672	9950	15856
Management Services	7389	4869	3670	3699
Totals	36103	63111	36102	29200

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PE 643869, MEADS	236823	251414	0	0	0	0	0	0	0	488237
PE 654869M06, PATRIOT/MEADS CAP	0	0	288785	326352	454511	510672	510389	490441	0	2581150
PE 273801, PATRIOT PIP	45587	32082	16188	10607	10884	11119	12029	12520	0	151016
PE 654865, PAC-3	151318	61482	0	0	0	0	0	0	0	212800
PE C49100, PATRIOT	616942	487364	489700	494754	466004	471770	0	0	0	3026534
PE C50001, PATRIOT/MEADS CAP	0	0	0	0	88425	64338	423209	663557	0	1239529
PE 172419, JLENS	57803	79316	106420	256893	471997	332428	0	0	0	1304857
PE BZ0525, JLENS Prod	0	0	0	0	0	29153	549707	397776	0	976636
PE 654802, SLAMRAAM	36103	63111	36102	29200	0	0	0	0	0	164516
PE C81001, SLAMRAAM Prod	7397	2440	19315	21970	59273	13124	0	0	0	123519
PE 654820, SENTINEL	0	5851	5080	2547	2647	0	0	0	0	16125
PE WK5057, SENTINEL Prod	20646	7337	8393	15373	25074	31572	34473	32552	0	175420
PE 643327, Integrated Fire Control AMD	40275	0	24961	42736	48894	50930	0	0	0	207796

This PE is an integral part of the Missile and Space System of Systems (SoS) including Integrated Fire Control, JLENS, Patriot/MEADS Combined Aggregate Program (CAP), SLAMRAAM, JTAGS, SENTINEL, and on-going initiatives to achieve Single Integrated Air Picture (SIAP).

C. Acquisition Strategy: System Development and Demonstration (SDD) contract award in 2nd Quarter FY04. SDD will be a 41 month effort, culminated by completion of IOT&E in 4th Qtr FY08. Initial Operational Capability (IOC) available in FY08.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
S23

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Contractor Hardware/Software Development	CPIF	Raytheon, Tewksbury, MA	19778	47309	1Q	22110	1Q	9295	1-3Q	0	98492	98492
b . Government Prototype Manufacturing (GFE)	MIPR	SFAE-MSLS-CMDS	3368	257	1Q	0		0		0	3625	0
Subtotal:			23146	47566		22110		9295		0	102117	98492

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Contractor Support Costs	CPIF	Raytheon, Tewksbury, MA	773	1004	1Q	372		350		0	2499	2499
Subtotal:			773	1004		372		350		0	2499	2499

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BUDGET ACTIVITY
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Contractor System Test & Evaluation	CPIF	Raytheon, Tewksbury, MA	488	2243	1Q	4428		5867		0	13026	13026
b . Government System Test & Evaluation	MIPR	CMDS (SFAE-MSLS-CMDS) Redstone Arsenal, AL	1257	3879	1Q	3618		7539		0	16293	0
c . Government Modeling & Simulation	MIPR	CMDS (SFAE-MSLS-CMDS) Redstone Arsenal, AL	3050	3550	1Q	1904		2450		0	10954	0
Subtotal:			4795	9672		9950		15856		0	40273	13026

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Contractor SE/PM	CPIF	Raytheon, Tewksbury, MA	4732	2681	1Q	2058	1Q	1524		0	10995	10995
b . Government SE/PM	MIPR	CMDS (SFAE-MSLS-CMDS) Redstone Arsenal, AL	4332	2188	1Q	1612	1Q	2175	1Q	0	10307	0
Subtotal:			9064	4869		3670		3699		0	21302	10995

Remarks: Government Modeling & Simulation included in Test & Evaluation.

Project Total Cost:			37778	63111		36102		29200		0	166191	125012
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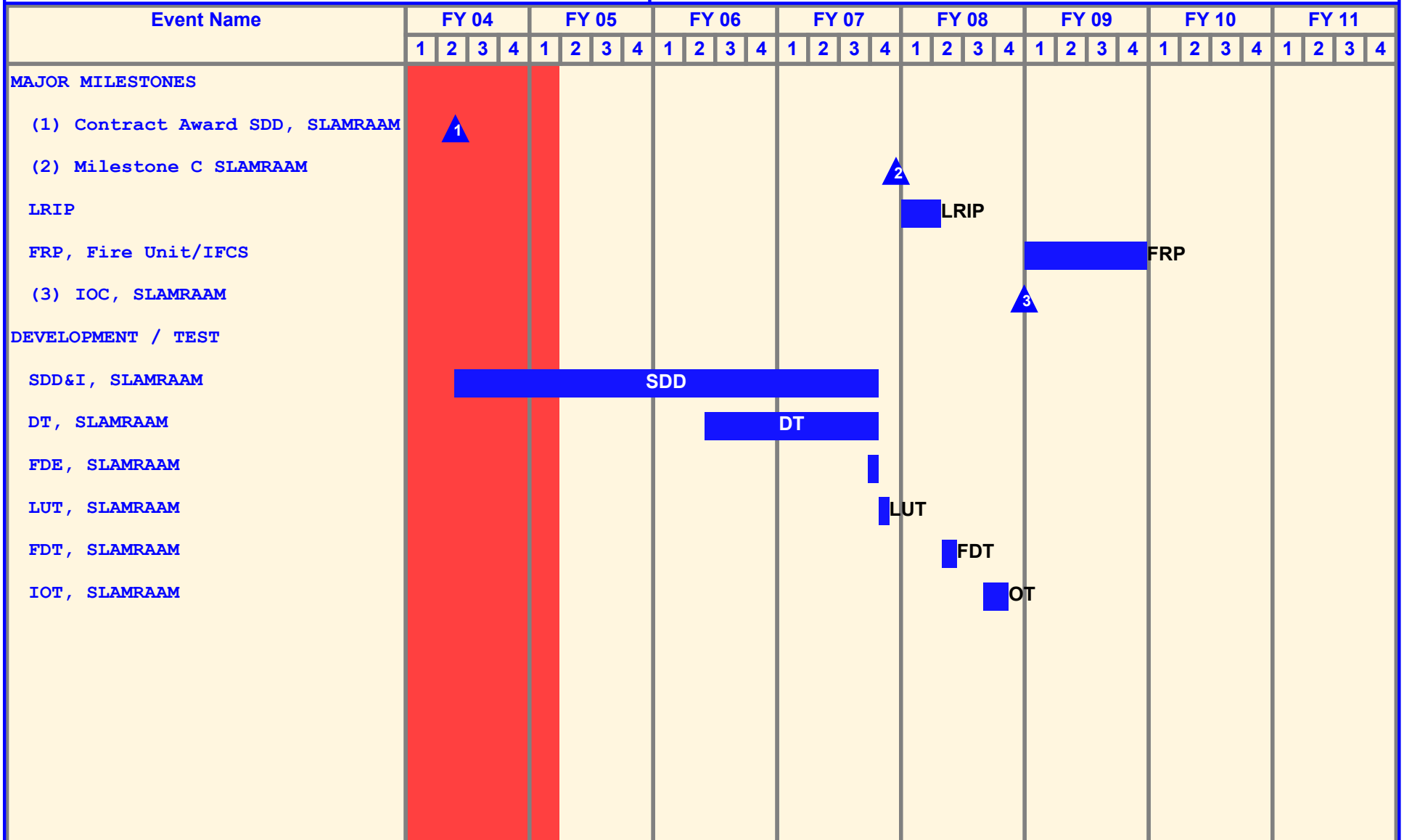
Schedule Profile (R4 Exhibit)

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BUDGET ACTIVITY
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0604802A - Weapons and Munitions - Eng Dev

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Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone C				4Q				
LRIP					1-2Q			
Full Rate Production					4Q	1-4Q		
IOC					4Q			
SDD&I	2-4Q	1-4Q	1-4Q	1-4Q				
DT			2-4Q	1-3Q				
FDE				3-4Q				
LUT				4Q				
FDT					2Q			
IOT					3-4Q			

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S36 COURSE CORRECTING FUZE (CCF)	0	0	8278	10110	11197	5089	1519	0	0	36193

A. Mission Description and Budget Item Justification: The Course Correcting Fuze (CCF) is currently being pursued as a solution to meet the Precision Guidance Kit Capability Development Document requirement. The CCF is adaptable to existing stockpile and future conventional cannon artillery projectiles. The CCF corrects the ballistic trajectory of the projectile to reduce delivery errors and thus improves projectile accuracy. The CCF will effectively reduce target delivery error of conventional artillery munitions and reduce the number of projectiles required to execute a fire mission. The CCF will benefit 155mm projectiles as well as the family of 105mm projectiles. The increase in effectiveness offered by the CCF gives commanders the operational capability to defeat more targets with the same basic load, while reducing the logistical burden associated with the current mission requirements.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Supporting documentation and Milestone B execution	0	0	1174	0
Prepare RFP and conduct evaluation for SDD award	0	0	1600	0
Design and develop inductive data link	0	0	400	500
Design, develop, and integrate gun-hardened system and components	0	0	4904	7860
Testing	0	0	200	1750
Totals	0	0	8278	10110

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
0604802A Weapons and Munitions - Eng Dev Project AS5	12284	0	0	0	0	0	0	0	0	12284
E99250 Course Correcting Fuze (CCF)	0	0	0	0	11202	30661	35855	48083	0	125801

C. Acquisition Strategy: The Army plans to leverage the Navy Guidance Integrated Fuze (GIF) Technology Development (TD) program. The Army is cooperatively working with the Navy to include an Army System Development and Demonstration (SDD) option as part of the Navy TD contract. This option will be executed and transferred to the Army upon successful completion Army Milestone A/B in FY06. Milestone C is planned for FY08 allowing Low Rate Initial Production to continue for two years. Full Rate Production will begin in FY10.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CCF Study Contract	FFP	Altarum, Ann Arbor MI	0	0		0		0		0	0	0
b . CCFStudy Contract	FFP	Ares, Arlington VA	0	0		150	2Q	150	2Q	0	300	0
c . CCF Analysis Contract	FFP	Alion, Rome NY	0	0		200	2Q	200	2Q	0	400	0
d . CCF Contract	CPAF	TBS	0	0		3704	2Q	6710		Continue	Continue	0
Subtotal:			0	0		4054		7060		Continue	Continue	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Product Manager's Office	In House	PM CAS, Picatinny NJ	0	0		3124	1-4Q	360	1-4Q	Continue	Continue	0
b . Government IPT Support	MIPR	ARDEC, Picatinny NJ	0	0		900	1-3Q	940	1-3Q	Continue	Continue	0
Subtotal:			0	0		4024		1300		Continue	Continue	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Safety and Performance Testing	MIPR	Yuma Proving Grounds, Yuma AZ	0	0		0		1450	2-4Q	Continue	Continue	0
b . Wind Tunnel Testing	MIPR	Redstone Arsenal, Redstone AL	0	0		100	3Q	150	2Q	0	250	0
c . Railgun Testing	MIPR	ARDEC, Picatinny NJ	0	0		100	1Q	150	1-2Q	0	250	0
Subtotal:			0	0		200		1750		Continue	Continue	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			0	0		8278		10110		Continue	Continue	0
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Schedule Profile (R4 Exhibit)

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BUDGET ACTIVITY
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PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Course Correcting Fuze (CCF)	CCF Technology Demonstration																															
(1) Milestone C - Increment 1	MS C 																															
CCF Production - Increment 1	CCF Prod - Increment 1																															
(2) Milestone A / B	MS A/B 																															
CCF SDD	CCF SDD																															
(3) Milestone C - Increment 2	MS C 																															
CCF Production - Increment 2	CCF Prod - Increment 2																															

Schedule Detail (R4a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0604802A - Weapons and Munitions - Eng Dev

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Contract Award			1Q					
Milestone A/B			1Q					
Systems Requirement Review			3Q					
Prelinary Design Review				1Q				
Milestone C - Increment 1			2Q					
Critical Design Review					3Q			
Limited Users Test					3Q			
Milestone C - Increment 2						1Q		
Initial Capability - Increment 1						2Q		
Initial Operational Test and Evaluation							2-3Q	
Materiel Release							4Q	
Initial Operational Capability							4Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

COST (In Thousands)		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to	Total Cost
		Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
Total Program Element (PE) Cost		84398	90517	13353	35374	33341	43785	46345	65097	Continuing	Continuing
194	ENGINE DRIVEN GEN ED	7017	5241	6735	10100	3809	4387	1683	1689	0	47954
461	MARINE ORIEN LOG EQ ED	59127	62641	0	0	0	0	0	0	0	151770
H01	COMBAT ENGINEER EQ ED	4000	4054	997	4799	3350	3240	10536	30214	0	66843
H02	TACTICAL BRIDGING - ENGINEERING DEVELOPMENT	1857	2375	997	2859	9262	22991	12039	12404	0	65804
H14	MATERIALS HANDLING EQUIPMENT - ED	471	0	499	509	509	510	509	508	Continuing	Continuing
L39	FIELD SUSTAINMENT SUPPORT ED	8034	4411	1938	8322	10880	6999	6556	6578	0	54699
L41	WATER AND PETROLEUM DISTRIBUTION - ED	1613	8021	2187	7078	3578	3646	3607	3635	0	40833
L42	CAMOUFLAGE SYSTEM ED	637	1536	0	0	0	0	1592	1625	0	5719
L43	ENGINEER SUPPORT EQUIPMENT - ED	1171	1107	0	305	509	510	6515	4883	0	17862
L46	MAINTENANCE SUPPORT EQUIPMENT	471	1131	0	1402	1444	1502	3308	3561	0	12819

A. Mission Description and Budget Item Justification: This Program Element (PE) provides system development and demonstration for various projects. This PE includes the development of military tactical bridging, material handling equipment, construction equipment, engineer support equipment, soldier support equipment (to include shelter systems, environmental control, field service equipment, camouflage systems and aerial delivery equipment), water purification equipment, petroleum distribution equipment, mobile electric power and water craft.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	89151	38534	45332
Current Budget (FY 2006/2007 PB)	90517	13353	35374
Total Adjustments	1366	-25181	-9958
Net of Program/Database Changes			
Congressional Program Reductions	-1366		
Congressional Rescissions			
Congressional Increases	5300		
Reprogrammings			
SBIR/STTR Transfer	-2568		
Adjustments to Budget Years		-25181	-9958

Change Summary Explanation: Funding - FY06 and FY07 funds realigned in support of higher Army requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
194 ENGINE DRIVEN GEN ED	7017	5241	6735	10100	3809	4387	1683	1689	0	47954

A. Mission Description and Budget Item Justification: This project supports the Mobile Electric Power (MEP) program which is established to develop a Modernized, Standard Family of Mobile Electric Power Sources for All Services throughout the Department of Defense. Building on the device/component evaluations conducted in PE 0603804A project G11, this project supports the system development and demonstration of a series of innovative mobile electric power sources that are essential to the development and eventual fielding of modernized mobile electric power sources from 0.5 kW to 920 kW. These sources will ensure compliance with federally mandated environmental statutes and significantly lower noise and thermal signatures (thereby improving battlefield survivability), improve fuel and electrical efficiency, reduce weight, enhance portability, improve reliability and maintainability, and reduce operational and support costs.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Completed testing and began transition of 100/200kW Tactical Quiet Generators (TQG) to production and deployment.	200	0	0	0
Awarded two Phase I contracts for Advanced Medium Mobile Power Sources (AMMPS) and began Phase I testing.	4736	4212	0	0
Continue Phase I test for AMMPS	0	1029	0	0
Initiate Follow-on 2kW Improvement Program	2081	0	0	0
Downselect to 1 contractor/Award Phase II for AMMPS/Develop and assembly of pre-production test models with commensurate engineering and logistics data.	0	0	6735	0
Conduct Developmental Tests (DT) and continue engineering and logistics data deliverables	0	0	0	10100
Totals	7017	5241	6735	10100

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
0603804A - Logistics and Engineer Equipment Adv Dev G11	1409	1449	1846	1980	2158	2353	1130	1138	Continuing	Continuing
OPA3, MA9800, Generators and Associated Equipment	71645	57175	43067	33516	34284	28550	24716	25946	Continuing	Continuing

C. Acquisition Strategy: Perform Developmental Testing (DT)/Operational Testing (OT) for the AMMPS family; perform phase II contract award through a down select. Developmental test and evaluation of technologies that transition into procurement after Milestone C.

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
194

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . AMMPS(5-60kW)	CPFF	Various	9016	3912	2Q	6335	2Q	4825	2Q	Continue	24088	0
b . Follow-on 2kW Improvement Program	CPFF	Various	1800	0		0		0		0	1800	0
Subtotal:			10816	3912		6335		4825		Continue	25888	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . 100/200kW	In-house	CECOM, Ft Belvoir, VA	1335	0		0		0		0	1335	0
b . AMMPS(5-60kW)	In-house	CECOM, Ft Belvoir, VA	1975	200	1Q	200	1Q	200	1Q	Continue	2575	0
c . Follow-on 2kW Improvement Program	In-house	CECOM, Ft Belvoir, VA	65	0		0		0		0	65	0
Subtotal:			3375	200		200		200		Continue	3975	0

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0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . AMMPS(5-60kW)	MIPR	Various	927	953	2Q	0		4825	2Q	Continue	6705	0
b . Follow-on 2kW Improvement Program	MIPR	CECOM, Ft Beloir, VA	216	0		0		0		0	216	0
Subtotal:			1143	953		0		4825		Continue	6921	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . 100/200kW	In-house	CECOM, Ft Belvoir, VA	1122	0		0		0		0	1122	0
b . AMMPS(5-60kW)	In-house	CECOM, Ft Belvoir, VA	1557	176	1-4Q	200	1Q	250	1Q	Continue	2183	0
Subtotal:			2679	176		200		250		Continue	3305	0

Project Total Cost:			18013	5241		6735		10100		Continue	40089	0
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Schedule Profile (R4 Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
AMMPS Program																																				
(1) MS B, (2) Release Solic.	▲1	▲2																																		
Award Phase I / Phase I Test																																				
Award Phase II / Conduct DT & OT																																				
(3) MS C / Production Release, (4) Transition to Production																																				
100/200kW TQG																																				
(5) Complete DT, (6) Complete OT (7) MS C/Production Release																																				
STEP (Small Tact. Electric Power)																																				
(8) Prepare Performance Spec., (9) Award Phase I / Phase I Test / MS B, (10) DT / OT, (11) MS C / Production Release																																				
2kW Follow-on Improvement Program																																				
(12) Publish CBD Announcement, (13) Awd. Cont(s)., 24 Mon. Proto. Dev.																																				
LAMPS (Large Advanced Mobile Power Systems)																																				
(14) Prepare Performance Spec. / MS B																																				

Schedule Detail (R4a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Complete 100/200kW TQG Developmental Test	1Q							
Complete 100/200kW TQG Operational Test	1Q							
AMMPS Milestone B	1Q							
Complete solicitation package for AMMPS/Release Solicitation	2Q							
Publish CBD Announcement requesting White Papers for Follow-on 2kW Improvement Program	2Q							
Transition 100/200kW TQG to Procurement - (Milestone C)	3Q							
Award Follow-on 2kW Improvement Program contract(s)	4Q							
Award two or more Phase I contracts for AMMPS	4Q							
Continue Phase I for AMMPS		2Q						
Downselect to 1 contractor/Award Phase II for AMMPS/develop test model			2Q					
Conduct AMMPS DT & continue engineering & logistics data deliverables				2Q				
Begin preparation of Performance Specification for Small Tactical Electric Power (STEP)					1Q			
Complete DT/OT & documentation in support of Milestone C for AMMPS					1Q			
Transition AMMPS to Milestone C					2Q			
Transition AMMPS to Production					3Q			
Award STEP Phase I contracts/Milestone B						2Q		
DT/OT for STEP							1Q	
Begin Performance Specification for Large Advanced Mobile Power Sources (LAMPS)								1Q
STEP Milestone C/Production Release								4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment -
Eng Dev

PROJECT
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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
461 MARINE ORIEN LOG EQ ED	59127	62641	0	0	0	0	0	0	0	151770

A. Mission Description and Budget Item Justification: This project supports the engineering and pre-production development of equipment for the Army's Logistics-Over-The-Shore (LOTS), In-theatre Port Control, and Riverine logistics missions. Chief among this equipment is the Joint High Speed Vessel (JHSV). The JHSV will operate at speeds up to four times greater than the current fleet. This will provide the Army with the capability to support operational maneuver from standoff distance; bypass land-based chokepoints, and reduce the logistics footprint in the Area of Responsibility. This ability to transport both troops and their equipment, and to provide an Enroute Mission Planning and Rehearsal System, does not exist today.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY04-FY05: Continue Theater Support Vessel (TSV) program.	38474	52194	0	0
FY04: Continue Army support for the High Speed Vessel (HSV) Lease	9000	0	0	0
FY04-FY05: Continue Army support for the TSV Lease.	11653	10447	0	0
Totals	59127	62641	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0604804A - Logistics and Engineer Equipment -
Eng Dev

PROJECT
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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0603804A,526, Marine Oriented Logistics, Advanced Development	4469	284	2992	3052	3056	3056	3054	3052	Continuing	Continuing
OPA 3, M11203, Theatre Support Vessel (TSV)	0	996	15000	15361	299351	301615	154195	154356	Continuing	Continuing

C. Acquisition Strategy: The JHSV Acquisition Strategy calls for evolutionary development of commercially based technology with military adaptations. JHSV will be acquired competitively and production will be based in the United States. The HSV-X1 lease will expire 1st quarter FY06 with an option for 300 additional days. The TSV-1X lease will expire 1st quarter FY06 with the possibility of adding two additional option years on the contract, with Justification and Approval (J&A). Currently fielded Logistics Support Vessels (LSV) will remain the only Army intra-theater capability until TSV is fielded. A JHSV Memorandum of Intent between Army, Navy and Marine Corps has been signed to form a Navy-led Joint Program Office and integrate Army, Navy and Marine Corps requirements. A Memorandum of Agreement (MOA) directed transition of JHSV portion of this effort to Navy NLT 31 Jan 05. TSV Advanced Concept Technology Demonstration (ACTD) effort is maintained by Army through FY05.

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng **PROJECT 461**
Dev

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TSV	MIPR	NSWC, Suffolk, VA	4828	1500	1-2Q	0		0		Continue	6328	0
b . HSV Lease(ARMY portion)/Insurance	Competitive FFP/Requirements Type Contract	Bollinger/INCAT	14869	0	1-2Q	0		0		0	14869	Continue
c . TSV-1X Lease/Insurance	Competitive Fixed Price Contract	Bollinger/INCAT	23305	10447	1-2Q	0		0		0	33752	Continue
d . TSV/HSV Modifications	PWD	TBD	17151	0		0		0		0	17151	Continue
e . TSV Self Defense	PWD/MIPR	TBD	0	6600	1-2Q	0		0		0	6600	0
f . TSV/HSV Operations/Demonstration/Maintenance	PWD/MIPR	Multiple	23774	21257	1-2Q	0		0		0	45031	0
g . HSV Cargo Handling	MIPR	TBD	5200	0		0		0		0	5200	0
h . TSV C4I	PWD/MIPR	TBD	5800	3800	1-2Q	0		0		0	9600	0
i . TSV Helo Operations	MIPR	Ft. Rucker, Alabama	1000	0		0		0		0	1000	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng **PROJECT 461**
Dev

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . HSV Lease Close Out	Competitive FFP/Requirements Type Contract	Bollinger/INCAT	0	1200	2-3Q	0		0		0	1200	0
k . TSV Lease Close Out	Competitive FFP/Requirements Type Contract	Bollinger/INCAT	0	1000	2-3Q	0		0		0	1000	0
l . TSV/HSV Demil Cost	Competitive FFP/Requirements Type Contract	Bollinger/INCAT	0	2634	3-4Q	0		0		0	2634	0
Subtotal:			95927	48438		0		0		Continue	144365	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng
Dev

PROJECT
461

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TSV/Matrix Support	MIPR	TACOM, PSID	0	186	1-2Q	0		0		0	186	0
b . TSV/Matrix Support	MIPR	TACOM, Legal	0	66	1-2Q	0		0		0	66	0
c . TSV/Matrix Support	MIPR	TACOM, Resource Management	0	52	1-2Q	0		0		0	52	0
d . TSV/Matrix Support	MIPR	TACOM, Acquisition Center	0	186	1-2Q	0		0		0	186	0
e . TSV/Matrix Support	MIPR	TACOM Safety Office	65	28	1-2Q	0		0		Continue	93	0
f . TSV	MIPR	DRM, Ft Eustis	90	0		0		0		0	90	0
g . TSV	MIPR	NSWC, West Bethesda, MD	100	0		0		0		0	100	0
h . TSV/Matrix Support	MIPR	TACOM, Environmental	130	28	1-2Q	0		0		0	158	0
i . TSV/Matrix Support	MIPR	TACOM, LCCE	0	60	1-2Q	0		0		Continue	60	0
j . TSV/Matrix	MIPR	TACOM, NET	0	25	1-2Q	0		0		0	25	0
k . TSV/Matrix Support	MIPR	CASCOM, Ft. Lee, VA	0	500	1-2Q	0		0		0	500	0
l . TSV/Matrix Support	MIPR	TACOM, TARDEC	0	28	1-2Q	0		0		0	28	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng **PROJECT 461**
Dev

II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
m . HSV/Matrix Support	MIPR	USAPAC	0	90	1-2Q	0		0		0	90	0
Subtotal:			385	1249		0		0		Continue	1634	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . HCCC	MIPR	TECOM , ATC, Aberdeen, MD	50	0		0		0		0	50	730
b . TSV/Matrix Support	MIPR	LCCE, TACOM, Warren	133	0		0		0		Continue	133	0
c . TSV	PWD	Tirrenia, Napoli, Italy	437	0		0		0		0	437	0
d . TSV	MIPR	ATEC/AEC, Aberdeen, MD	0	200	1-2Q	0		0		0	200	0
Subtotal:			620	200		0		0		Continue	820	730

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng
Dev

PROJECT
461

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . HCCC/Matrix	MIPR	PM Force Projection R&D/TARDEC, TACOM, Warren, MI	212	0		0		0		0	212	0
b . TSV/In-house	MIPR	PM TSV, Warren, MI	3172	2754	1Q	0		0		Continue	5926	0
d . Joint High Speed Vessel Start Up Cost		PEO Ships, Washington Navy Yard, DC	0	10000	2-3Q	0		0		0	10000	0
Subtotal:			3384	12754		0		0		Continue	16138	0
Project Total Cost:			100316	62641		0		0		Continue	162957	Continue

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
461

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
HSV-X1- Lease-Joint Venture	Last Option: 1st-4th qtr FY06																															
TSV-1X - Lease Spearhead - Army	Awarded Sep 02																															

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

**0604804A - Logistics and Engineer Equipment - Eng
Dev**

PROJECT

461

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
High Speed Vessel Lease (HSV X1, Joint Venture)	1-4Q	1-4Q	1-4Q					
Theater Support Vessel Lease (TSV 1X, Spearhead)	1-4Q	1-4Q	1Q					

HSV X1: FY06 an option is available, however, this is not funded in the current budget.

TSV 1X: FY06-08 options are available with Justification and Approval, however, this is not funded in the current budget.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev					PROJECT H01	
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
H01 COMBAT ENGINEER EQ ED	4000	4054	997	4799	3350	3240	10536	30214	0	66843

A. Mission Description and Budget Item Justification: This project supports the System Development and Demonstration (SDD) of military tactical Construction Equipment (CE) used in support of horizontal construction missions in the Current Force and the transformation of engineers into the Brigade Combat Team (BCT) (unit of action) for the Future Force. This project also supports SDD of enabling systems meeting the capabilities of joint interdependence through the Air and Ground (A/G) Line of Communication (LOC), high speed excavation, infrastructure repair, and restoration integrated concept teams. Equipment includes items such as: High Mobility Engineer Excavator (HMEE, Types II and III); Scrapers, Scoop Loaders and Graders. The HMEE Type II will be lighter and tailored to meet the needs of the SBCTs and Light Forces (Airborne and Air Assault). The HMEE Type III will support medium and heavy combat engineer battalions and construction units. All of these systems support the Current Force of Combat Heavy Engineer Battalions, Construction Support Companies, Airborne/Air Assault Units, and the Army's Division Redesign Study (ADRS), which converts National Guard units from Combat to Combat Service Support (CSS) units.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Completed development of non-split rim wheel for construction equipment to address the Army's safety concerns.	400	0	0	0
Completed Test and Evaluation (6 prototypes) for HMEE Type II.	736	0	0	0
Continue SDD Contracts for HMEE Type II.	528	413	0	0
Conduct market research and update specs for future engineer transformation.	813	420	135	445
Continue Cooperative Research with Industry.	500	500	100	400
Continue development of engineer and acquisition documents required for Milestone Decisions.	618	465	140	475
Conduct Test and Evaluation of future engineer equipment.	405	456	150	495
Design Armor Kits for IHMEE, HMEE Type II, DEUCE.	0	1800	0	0
Conduct feasibility study to Armor HMEE Type III and Family of Loaders (FOL).	0	0	472	900
Initiate Systems Development and Demonstration of systems enabling A/G LOC Repair and Construction capabilities	0	0	0	1139
Initiate Test & Evaluation of systems enabling A/G LOC Repair and Construction capabilities.	0	0	0	945
Totals	4000	4054	997	4799

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment -
Eng Dev

PROJECT
H01

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA3, R05900, High Mobility Engineer Excavator	3845	8642	13472	16400	16455	14831	30299	31257	Continuing	Continuing
OPA3, R03801, Grader, Mtzd, Hvy	0	0	0	2904	12634	4201	8738	12863	Continuing	Continuing
OPA3, RA0100, Scrapers, Earthmoving	0	0	0	0	3179	5923	10280	0	0	19382
OPA3, M09900, Pneumatic Tool Compressor Outfit 250cfm Trl	0	0	0	0	352	0	4523	8644	Continuing	Continuing

C. Acquisition Strategy: Construction Equipment- programs will transition into a competitive procurement.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng
Dev

PROJECT
H01

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Non-split rim wheel development	FFP	Hutchinson Tire, Hutchinson, KS	400	0		0		0		0	400	0
b . Continue SDD Contracts for HMEE Type II	FFP	ADI, Australia; JCB, Pooler, GA	4047	413	1-2Q	0		0		0	4460	7341
c . Market Research, Studies, Update Specs for future engineer	various	multiple activities	813	420	1-4Q	135	1-4Q	445	1-4Q	Continue	1813	Continue
d . Continue Cooperative Research with Industry	various	multiple activities	500	500	1-4Q	100	1-4Q	400	1-4Q	Continue	1500	Continue
e . Continue development of engineer and acquisition documents	various	multiple activities	618	465	1-4Q	140	1-4Q	475	1-4Q	Continue	1698	Continue
f . Design Armor Kits for IHMEE, HMEE Type II, DEUCE.	MIPR	TACOM, Warren, MI	0	1338	2-4Q	0		0		0	1338	0
g . Conduct feasibility study to armor HMEE Type III and FOL	TBD	TBD	0	0		197	2-4Q	615	2-4Q	0	812	Continue
h . Initiate SDD for A/G LOC Repair and Construction	TBD	TBD	0	0		0		1139	1-4Q	0	1139	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
H01

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			6378	3136		572		3074		Continue	13160	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	TACOM, Warren, MI	10219	315	1-2Q	135	1-2Q	140	1-2Q	Continue	10809	Continue
b . Engineering Operational Integrator Support	MIPR	DA/Pentagon, Washington, DC	156	0		0		0		0	156	156
c . Construction Equipment Lease Study	MIPR	DA/Pentagon, Washington, DC	200	0		0		0		0	200	200
Subtotal:			10575	315		135		140		Continue	11165	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
H01

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . HMEE Type II (6 prototypes)	MIPR	ATEC, Aberdeen, MD	784	0		0		0		0	784	2048
b . Future Engineer Equipment (various)	MIPR	ATEC, Aberdeen, MD	1696	456	1-4Q	150	1-4Q	495	1-4Q	Continue	2797	Continue
c . Air & Ground LOC Test & Evaluation	MIPR	ATEC, Aberdeen, MD	0	0		0		945	1-4Q	Continue	945	Continue
Subtotal:			2480	456		150		1440		Continue	4526	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Mgt	In-house	PM CE/MHE, Warren, MI	529	147	1-2Q	140	1-2Q	145	1-2Q	Continue	961	Continue
Subtotal:			529	147		140		145		Continue	961	Continue

Project Total Cost:			19962	4054		997		4799		Continue	29812	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
H01

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Market Surveillance/Investigation of Future Engineer Equipment	[Redacted]																															
T&E of Technologies for Engineer Equip (from components to major systems)	[Redacted]																															
HMEE System Demonstration Testing (PPT & LUT)	[Redacted]																															
(1) HMEE MS C/ TC Generic	[Redacted]																															
Design Armor Kits	[Redacted]																															
Air & Ground LOC SDD contracts (graders, scrapers, compressors, earthmover)	[Redacted]																															
Air & Ground Line of Communication (LOC) T&E (graders, scrapers, compressor)	[Redacted]																															
Cooperative Research with Industry	[Redacted]																															

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
H01

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Market Surveillance/Investigation	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Test and Evaluation of Future Engineer Equipment	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Test of HMEE Type II	3-4Q							
HMEE Type II, Milestone C		3Q						
Design Armor Kits for various Construction Equipment systems		2-4Q						
Air & Ground LOC SDD				1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Air & Ground LOC Test & Evaluation				1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Cooperative Research with Industry	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev				PROJECT H02		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
H02 TACTICAL BRIDGING - ENGINEERING DEVELOPMENT	1857	2375	997	2859	9262	22991	12039	12404	0	65804

A. Mission Description and Budget Item Justification: This project supports the engineering, system development and demonstration, and transition to procurement of Future Force Tactical Bridge Systems. Efforts supported include: the assessment of the Rapidly Emplaced Bridging System (REBS) for the Stryker Brigade Combat Team (SBCT) and its integration into the Future Combat System (FCS) chassis; upgrade of the Bridge Erection Boat (BEB) engine; development of new technology for the REBS and the Dry Support Bridge (DSB); and development of modular components and lightweight material for future bridging applications.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Test Improved Bridge Anchorage System	2	0	0	0
Develop, integrate, and test DSB 46 meter bridge	405	676	997	1584
Operational testing of the REBS	1450	1699	0	0
Develop REBS improved bridge	0	0	0	500
Develop REBS fully automated launch/retrieve	0	0	0	450
Integrate, purchase and install BEB Electronic Controlled Engine	0	0	0	325
Totals	1857	2375	997	2859

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
H02

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA3, MX0100, Tactical Bridge	39728	34005	26611	29421	26448	44393	60323	60959	Continuing	Continuing
OPA3, MA8890, Tactical Bridging, Float Ribbon	59390	27005	5913	10819	19431	31497	24543	24879	Continuing	Continuing

C. Acquisition Strategy: Limited RDT&E effort to support testing and follow-on production.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
H02

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DSB 46 meter bridge	SS-CPFF	WFEL, Stockport, England	0	676	1-2Q	997	1-2Q	1000	1-2Q	Continue	2673	0
b . REBS Improved Bridge	SS-CPFF	General Dynamics SBS, Kaiserslautern, GE	0	0		0		500	1Q	Continue	500	0
c . REBS Fully Automated Launch/Retrieve	SS-CPFF	General Dynamics SBS, Kaiserslautern, GE	0	0		0		450	2Q	Continue	450	0
d . Integrate and Purchase BEB Electronic Engine	SS-REQ	FBM Babcock Marine	0	0		0		325	1-3Q	Continue	325	0
Subtotal:			0	676		997		2275		Continue	3948	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Other Government Agencies	MIPR	TACOM, Warren, MI-- Various	120	0		0		0		0	120	0
Subtotal:			120	0		0		0		0	120	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
H02

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Anchorage System	MIPR	APG, Aberdeen, MD	43	0		0		0		0	43	0
b . REBS OT	MIPR	HQ OTC, Ft Hood, TX	912	1699	1-2Q	0		0		0	2611	0
c . DSB 46 meter Bridge	SS-CPFF	WFEL, Stockport, UK	246	0		0		584	1Q	0	830	0
Subtotal:			1201	1699		0		584		0	3484	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Support	NA	TACOM, Warren, MI	727	0		0		0		0	727	0
Subtotal:			727	0		0		0		0	727	0

Project Total Cost:			2048	2375		997		2859		Continue	8279	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
H02

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Anchorage System Test																																
REBS Operational Test																																
Dev, Integ, & Test DSB 46 Meter Bridge																																
Dev, Integ & Test REBS Improved Bridge																																
Dev, Integr, & Test BEB Elect. Controlled Engine																																
Dev, Integr, & Test REBS Fully Auto. Launch/Retrieve																																
Develop and Integrate REBS on FCS Chassis																																
Plan and Develop Modular Components and Lightweight Materials																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
H02

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Anchorage System Testing	2Q							
REBS Operational Test	3-4Q	1-3Q						
Develop REBS Improved Bridge				1-4Q				
Integrate REBS Improved Bridge					1-3Q			
Test New REBS Improved Bridge					4Q			
Develop DSB 46 Meter Bridge	3-4Q	1-4Q						
Integrate DSB 46 Meter Bridge			1-4Q					
Test DSB 46 Meter Bridge	1-2Q			1-3Q				
Develop BEB Elect. Controlled Engine				1-4Q				
Purchase and Install BEB Elect. Controlled Engine					1-4Q			
Test BEB Electronic Controlled Engines						1-4Q	1-2Q	
Develop REBS Fully Automated Launch/Retrieve				1-4Q				
Integrate REBS Fully Automated Launch/Retrieve					1-4Q			
Test REBS Fully Automated Launch/Retrieve						1-4Q		
System development of REBS for Future Combat System (FCS) Chassis						1-4Q		
Integrate the REBS into the FCS Chassis							1-4Q	1-2Q
Plan and Develop Modular Components and Lightweight Materials								2-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev				PROJECT L39		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L39 FIELD SUSTAINMENT SUPPORT ED	8034	4411	1938	8322	10880	6999	6556	6578	0	54699

A. Mission Description and Budget Item Justification: This project supports the System Development and Demonstration (SDD) of critical distribution and sustainment capabilities to include cargo aerial delivery, field shelters, showers, latrines, heaters, environmental control units, mortuary affairs, organizational equipment, and other combat service support equipment to fill identified theater distribution and services capability gaps, improve unit sustainability, and increase combat effectiveness. Project supports the demonstration of engineering development models and Type Classification of cargo parachutes, airdrop containers and other aerial delivery equipment to improve safety, effectiveness, and efficiency of airborne operations. Project supports development of tactical field systems and support equipment such as Tactical Operation Center's environmental control systems for with added capabilities and enhanced survivability. This project develops critical enablers that support the Quartermaster (QM) Force Transformation Strategy and The Army's Modular Force Capabilities by maintaining readiness through fielding and integrating new equipment. This project also ensures Army Expeditionary Forces are capable of rapid deployment by providing aerial delivery initiatives, which reduce sustainment requirements, related Combat Support/Combat Service Support (CS/CSS), the lift demands, the combat zone footprint, and costs for logistical support.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY 04: Completed Developmental Testing (DT) and Operational Testing (OT) of Large Capacity Field Heater (LCFH) and obtained Milestone C Low Rate Initial Production (LRIP) decision.	544	0	0	0
FY 04: Due to a loss of funding development of the small Improved Environmental Control Units (IECUs) was terminated. Received deliverables and closed out the SDD prototype contract for the 9K, 18K and 36K variants of the IECU. Procurement of the currently fielded systems will continue.	580	0	0	0
FY 04: Conducted requirements review and alternative design evaluations for the Mobile Integrated Remains Collection System (MIRCS) including adaptation of the Multi-Temperature Refrigerated Container System (MTRCS). Prepared documentation for Milestone B and procurement. FY 05: Obtain Milestone B, fabricate MIRCS prototypes and prepare documentation to support testing. FY 06: Complete fabrication of MIRCS prototypes and conduct Developmental Testing (DT) and initiate Operational Testing (OT). FY 07: Complete Operational Testing. Complete documentation and prepare for Milestone C package for MIRCS to transition into production.	1200	1701	1425	694

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
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Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007
FY 04: Completed development and reliability testing of 60k British Thermal Unit (BTU) Space Heater Convective (SHC) test prototypes. Prepared technical and logistic documentation for Defense Supply Center Philadelphia (DSCP) Low Rate Initial Production (LRIP) contract solicitation. FY 05: Award LRIP contract, conduct Field Evaluation, complete First Article Testing (FAT), obtain Milestone C Full Rate Production decision for the 60k BTU SHC.	770	60	0	0
FY 04: Conducted Design Validation (DV) for 500' Low Velocity Airdrop System (LVADS). Modified contract to change design features and fabricated new DV test items. FY 05: Complete DV for 500' Low Velocity Airdrop System (LVADS). FY 06: LVADS program terminated due to funding decrements under PDB 701.	1575	1425	0	0
FY 04: Conducted DV testing of platform and nets on the Enhanced Container Delivery System (ECDS). Procured DT platform and net test items. FY 05: Conduct DT testing of platform and nets on the ECDS. Procure OT test items. Start OT. FY 06: Complete OT and obtain Milestone C for ECDS.	1235	725	200	0
FY 04: Completed DT on the Trailer Mounted Environmental Control System (TMECS) for Stryker Brigade Combat Team (SBCT)	1445	0	0	0
FY 04: Conduct technical feasibility testing of Extraction Parachute Jettison System (Heavy) (EPJS(H)) to evaluate the integration of subsystems and components coupled with aircraft compatibility. FY 05: Conclude technical feasibility and conduct DT of EPJS(H). Procure OT test items. FY 06: Complete OT, obtain Milestone C and transition into production.	685	500	313	0
FY 07: Initiate Joint Precision Airdrop System (JPADS) 2k System DT. Procure JPADS 10k System DT prototypes and initiate DT.	0	0	0	7628
Totals	8034	4411	1938	8322

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA3, MF9000, Environmental Control Units (ECU)	20717	17486	3420	5766	6090	4867	4174	4178	Continuing	Continuing

C. Acquisition Strategy: Accelerate product development and testing to transition into production.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Soldier Support Equipment	In-House	PM FSS, Natick	1005	426	1-4Q	280	1-4Q	810	1-4Q	Continue	2521	3241
b . Soldier Support Equipment	In-House	CECOM, FT Belvoir	1441	0	1-4Q	0	1-4Q	0	1-4Q	Continue	1441	0
c . Soldier Support Equipment	Contracts	Various	4817	3039	1-2Q	1300	1-2Q	4448	1-2Q	Continue	13604	0
Subtotal:			7263	3465		1580		5258		Continue	17566	3241

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

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BUDGET ACTIVITY
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Soldier Support Equipment	MIPR	DTC, MD and ATC, MD	580	132	1-4Q	100	1-4Q	694	1-4Q	Continue	1506	130
b . Soldier Support Equipment	MIPR	Yuma Proving Ground, AZ	1896	676	1-4Q	200	1-4Q	2125	1-4Q	Continue	4897	76
Subtotal:			2476	808		300		2819		Continue	6403	206

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management Support		PM FSS, Natick	250	138	1-4Q	58		245		Continue	691	0
Subtotal:			250	138		58		245		Continue	691	0

Project Total Cost:			9989	4411		1938		8322		Continue	24660	3447
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Schedule Detail (R4a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Conduct Milestone C LRIP decision on the Large Capacity Field Heater .	4Q							
Conduct DT/OT on the Mobile Integrated Remains Collection System (MIRCS).			3-4Q	1Q				
Conduct Milestone C Decision on the MIRCS and transition into production.					1Q			
Complete DT/Operational Testing (OT) on 60k British Thermal Unit (BTU) Space Heater Convective (SHC)	3-4Q							
Conduct Milestone C Decision on the 60k BTU SHC.		3Q						
Conduct DV on Advanced Low Velocity Airdrop System (LVADS).		1-2Q						
Conduct Market Investigation for LVADS (H).						1-3Q		
Obtain Milestone B approval for LVADS (H).							1Q	
Conduct DT for LVADS (H).								2-4Q
Initiate DT and OT on Enhanced Containerized Delivery System (ECDS).		1Q						
Complete DT and OT on ECDS.			3Q					
Conduct Milestone C Decision on ECDS.			4Q					
Conduct DT on Extraction Parachute Jettison System - Heavy (EPJS-H).		2-4Q						
Conduct OT on EPJS-H.		4Q	1-2Q					
Conduct Milestone C Decision on EPJS-H.			4Q					
Initiate JPADS 2k System DT.				3Q				
Complete JPADS 2k System DT.					1Q			
Initiate JPADS 2k System OT.					1Q			
Complete JPADS 2k System OT.						1Q		
Conduct Milestone C on JPADS 2k System.						2Q		
Initiate JPADS 10k System DT.				4Q				
Complete JPADS 10k System DT.					2Q			

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev	PROJECT L39
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Schedule Detail (continued)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Initiate JPADS 10k System OT.					4Q			
Complete JPADS 10k System OT.						2Q		
Conduct Milestone C on JPADS 10k System.						4Q		
Conduct Milestone B for IECU 120k.						1Q		
Conduct DT on IECU 120k.							2-4Q	
Conduct OT on IECU 120k.								2-4Q

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BUDGET ACTIVITY
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COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
L41 WATER AND PETROLEUM DISTRIBUTION - ED	1613	8021	2187	7078	3578	3646	3607	3635	0	40833

A. Mission Description and Budget Item Justification: All services depend on ample supplies of clean fuel and water. The Army has the mission to supply fuel for all land-based forces, including the Marines and the Air Force, and must supply bulk drinking water to its soldiers. This System Development and Demonstration (SDD) program enables the Army to improve maneuver sustainment operations to meet the demands of the Stryker Brigade Combat Teams and the Future Force. The mission includes receiving and transferring petroleum from trucks, ships, pipelines and permanent and temporary storage facilities; moving petroleum from storage to and within corps and division areas; fuel quality surveillance testing; and dispensing in support of tactical operations, including rapid refueling of aircraft. The Rapidly Installed Fluid Transfer System (RIFTS) is being developed to replace the Inland Petroleum Distribution System (IPDS). RIFTS can be deployed at a rate of 20-30 miles per day as compared to 2-3 miles per day for IPDS. Versatile Tank and Pump Unit (VTPU) will support limited fuel storage and retail distribution missions from platoon through theater level and objective force velocity management. Petroleum, Oils and Lubricant (POL) Quality Analysis System (PQAS) replaces the air mobile lab and reduces the number of operators. Furthermore, the mission covers purification, storage, distribution, and quality control of water. The Army cannot fight without clean fuel and water. These R&D missions support the development and enhancement of rapidly deployed Petroleum and Water equipment which enables the Army to achieve its transformation vision by providing it with the means to be highly mobile and self-sustaining in very hostile theaters of operation. FY05 includes \$4.958 million of Congressional Plus-up funding.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue Petroleum, Quality Analysis System (PQAS) Pre-Planned Product Improvements (P3I).	66	0	0	0
Evaluated commercial water treatment components for P3I for water purification systems.	0	104	0	0
Rapidly Installed Fluid Transfer System (RIFTS) development, prototype design, fabrication, and test.	504	2800	0	0
Rapidly Installed Fluid Transfer System (RIFTS) Block I development and testing.	1043	5117	2187	0
Rapidly Installed Fluid Transfer System (RIFTS) Block II development, prototype design, fabrication and test.	0	0	0	4411
Develop purchase description for Versatile Tank & Pump Unit (VTPU) and prepare program management documents.	0	0	0	300
Versatile Tank & Pump (VTPU) development, prototype design, fabrication and test.	0	0	0	1000
Develop Water From Exhaust Prototypes	0	0	0	1367

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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Accomplishments/Planned Program (continued)

							FY 2004	FY 2005	FY 2006	FY 2007	
Totals							1613	8021	2187	7078	
<u>B. Other Program Funding Summary</u>		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0603804/K41, Logistics and Engineer Equipment - Advanced Development		448	3825	3312	4427	3614	3526	3390	3416	Continuing	Continuing
OPA 3, R02106, Mission Modules - Water Distribution Module		3688	262	600	7819	3116	38254	40498	35033	Continuing	Continuing
OPA 3, R05200, Water Purification Systems		0	4561	7220	5862	5872	4858	5884	885	Continuing	Continuing
OPA 3, MA6000, Distribution Systems, Petroleum & Water		36542	37944	66055	66320	93964	136339	137832	132762	Continuing	Continuing
OPA 3, Inland Petroleum Distribution System		2831	0	0	0	0	0	0	0	0	2831

C. Acquisition Strategy: Development of and transition to competitive procurement for most items under this project. Exceptions include Small Business Set Aside for the CAMEL and RIFTS.

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BUDGET ACTIVITY
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PQAS	In-House	TARDEC, Warren, MI	876	0		0		0		0	876	876
b . PQAS	MIPR	Rock Island Arsenal, Rock Island, IL	2397	0		0		0		0	2397	2397
c . RIFTS - BLOCK I	In-House	TARDEC, Warren, MI	1402	910	1-4Q	200	1-4Q	0		Continue	2512	Continue
d . RIFTS - BLOCK I	C-CPFF	Southwest Research Institute, San Antonio, TX	5833	3490	2Q	1087	1Q	0		Continue	10410	Continue
e . RIFTS - BLOCK II	C-CPFF	Southwest Research Institute, San Antonio, TX	0	0		0		980	2Q	Continue	980	Continue
f . RIFTS - BLOCK II	In-House	TARDEC, Warren, MI	0	0		0		285	1-4Q	Continue	285	Continue
g . Water Purification P3I	In-House	TARDEC, Warren, MI	175	0		0		0		Continue	175	Continue
h . Water Purification P3I	Purchase Orders	TBD	100	0		0		0		Continue	100	Continue
i . VTPU	In-House	TARDEC, Warren, MI	70	0		0		0		Continue	70	Continue
j . VTPU	In-House	TARDEC, Warren, MI	0	0		0		300	2Q	Continue	300	Continue
k . VTPU	Contract - CPFF	TBS	0	0		0		1000	2Q	Continue	1000	Continue

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BUDGET ACTIVITY
5 - System Development and Demonstration

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
I . Family of Water Harvesting/Purification Systems	Contract - CPFF	TBS	0	0		0		1000	2Q	Continue	1000	Continue
Subtotal:			10853	4400		1287		3565		Continue	20105	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PQAS	In-House	TACOM, Warren, MI	164	0		0		0		0	164	164
b . Water Purification P3I	MIPR	CHPPM, APG, MD	25	0		0		0		0	25	Continue
c . Water Purification P31	In-House	TACOM, Warren, MI	250	0		0		0		0	250	Continue
d . LMFF	In-House	TACOM, Warren, MI	50	0		0		0		0	0	50
e . RIFTS - Block II	In-House	TACOM, Warren, MI	76	0		0		300	2Q	Continue	376	Continue
f . Water Harvesting /Purification System	In House	TARDEC, WARREN, MI	0	0		0		367	1Q	Continue	367	Continue
Subtotal:			565	0		0		667		Continue	1182	Continue

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BUDGET ACTIVITY
5 - System Development and Demonstration

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PQAS DT/OT	MIPR	TECOM, Aberdeen, MD	545	0		0		0		0	545	545
b . RIFTS DT/OT - Block I	MIPR	TECOM, Aberdeen, MD	300	3517	2Q	900	1-2Q	0		0	4717	Continue
c . RIFTS - Block II	MIPR	TECOM, Aberdeen, MD	0	0		0		2846	2Q	Continue	2846	Continue
d . Water Purification P3I	In-House	TARDEC, Warren, MI	457	104	1Q	0		0		0	561	Continue
e . Water Purification P3I	MIPR	Dugway PG, Dugway, MD	220	0		0		0		0	220	Continue
f . Water Purification P3I	MIPR	NFESC, Port Hueneme, CA	35	0		0		0		0	35	Continue
g . LMFF	MIPR	CASCOM, AEC, Aberdeen Proving Ground, MD	100	0		0		0		0	100	100
Subtotal:			1657	3621		900		2846		Continue	9024	Continue

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5 - System Development and Demonstration

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Support	In-House	TACOM, Warren, MI	877	0		0		0		0	877	877
Subtotal:			877	0		0		0		0	877	877

Remarks: Not Applicable

Project Total Cost:			13952	8021		2187		7078		Continue	31188	Continue
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Schedule Profile (R4 Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
P31: Pre-Planned Product Improvement - PQAS	PQAS																															
P3I: Evaluate Commercial Water Treatment Components-Water Purification Sys					Water Purification Systems																											
Prototype design, fabrication, and test - RIFTS					RIFTS																											
Developmental Testing (DT) - RIFTS, Block I									Developmental Testing - RIFTS, Block I																							
Developmental Testing (DT) - Block II													Developmental Testing-RIFTS, Block II																			
Limited User Test (LUT) - RIFTS, BLOCK I									LUT Testing - RIFTS, Block I																							
MILESTONE B Decision - RIFTS, Block II													RIFTS, Block II																			
MILESTONE C Decision - RIFTS, Block I									RIFTS, Block I																							
Specification - VTPU													VTPU																			
OT: Operational Testing - LWP	LWP																															
OT: Operational Testing - Hippo	OT -																															
SDD: System Development and Demonstration - Camel	SDD - Camel																															

Schedule Detail (R4a Exhibit)

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5 - System Development and Demonstration

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Conduct PQAS P3I.	1-4Q							
Evaluate commercial water treatment components for P3I for water purification systems.		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
RIFTS development, prototype design, fabrication, and test.	1-4Q	1-4Q	1-4Q	1-4Q				
RIFTS Developmental Testing (DT) - Block I and Block		3-4Q		3-4Q				
RIFTS - Limited User Test (LUT) - Block I			1Q					
RIFTS - Milestone B - Block II				2Q				
RIFTS - Milestone C - Block I			2Q					
Develop purchase description for Versatile Tank & Pump Unit (VTPU) .				2Q				
LWP OT	1Q							
Conduct HIPPO technical and operational testing	1-2Q							
Camel SDD	1-4Q							
Camel MS C decision	4Q							
Family of Water Harvesting/Purification Systems - Contract Award				3Q				
Family of Water Harvesting/Purification Systems - Prototype Fabricate & Test				3Q	1-4Q			
Package Water System - Prototype Testing						1-4Q		

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L42 CAMOUFLAGE SYSTEM ED	637	1536	0	0	0	0	1592	1625	0	5719

A. Mission Description and Budget Item Justification: This project provides for System Development and Demonstration of low cost, low observable camouflage systems to counter emerging enemy threat technologies such as Thermal Sensors, Near Infrared (Night Vision) sensors, Short Wave Infrared Sensors by suppression of visual, near-infrared, thermal radar, and acoustic signatures of highly critical mobile and semi-mobile weapon systems and strategic equipment. Efforts include development of Arctic/Snow variants, as well as system unique Ultra Lightweight Camouflage Net System (ULCANS) for the Future Combat Systems. This project also includes development of a threat database that includes spectral, visual and topographic data for primary threat areas supporting mission unique and Special Operations camouflage requirements.

This program develops a critical capability that supports the Army's Future Force by providing signature suppression and counter-surveillance superiority that reduces vulnerability to expeditionary forces. In addition, this program is clearly focused on dramatically reducing the logistics footprint by providing substantial reductions in weight and cube, while providing superior camouflage protection to the warfighter. Further, more efficient and easier to employ systems will provide vast improvements in mobility to keep pace with rapidly moving Joint Operational Forces.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY 04: Completed transition of Ultra Lightweight Camouflage Net System (ULCANS) Desert Radar Scattering, Desert Radar Transparent, and Woodland Radar Transparent variants into production. Initiated development of Arctic/Snow (ULCANS) variants. FY 05: Complete Developmental Testing (DT) and Operational Testing (OT) on Arctic/Snow ULCANS variants. Prepare for Milestone C on Arctic/Snow ULCANS variants.	637	1146	0	0
FY 05: Incorporate technology enhancements for Woodland and Desert ULCANS variants to counter emerging enemy detection technologies.	0	390	0	0
Totals	637	1536	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0622712.AH35, Camouflage Technology	2572	2530	2619	2689	2801	2833	2858	2879	Continuing	Continuing

C. Acquisition Strategy: Develop camouflage systems for Services and transition developmental items into procurement with a competitive award. Continual upgrade to counter technology improvements of sensors, and to counter new emerging technologies. Continual leveraging of technology with other special operations programs.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Camouflage Equipment	MIPR	CECOM, FT Belvoir	144	0		0		0		0	144	0
b . ULCANS Arctic/Snow	MIPR	CECOM, FT Monmouth	100	307	1-4Q	0		0		0	407	0
c . ULCANS Technology Insertion	CPFF	CECOM, FT Monmouth	244	457	1-4Q	0		0		Continue	701	0
Subtotal:			488	764		0		0		Continue	1252	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

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PROJECT
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ULCANS, Arctic/Snow	MIPR	TECOM, WSMR	115	409		0		0		0	524	0
Subtotal:			115	409		0		0		0	524	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering Support	MIPR	CECOM, FT Belvoir	467	253	1-4Q	0		0		Continue	720	0
b . Program Support	Contract	Radian, INC	210	110	1-4Q	0		0		Continue	320	0
Subtotal:			677	363		0		0		Continue	1040	0

Project Total Cost:			1280	1536		0		0		Continue	2816	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L42

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) Technology Enhancement to Woodland ULCANS/Desert ULCANS					▲ 1																											
Conduct DT/OT for Arctic/Snow ULCANS																																
(2) Conduct MS C on Arctic/Snow ULCANS									▲ 2																							

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L42

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Initiated development of Arctic/Snow Ultra Lightweight Camouflage Net System (ULCANS).	1Q							
Initiate Developmental Testing (DT) and Operational Testing (OT) of Arctic/Snow ULCANS.		2Q						
Complete DT and OT of Arctic/Snow ULCANS.		3Q						
Initiate Technology Enhancement to Woodland ULCANS and Desert ULCANS.		1Q						
Conduct Milestone C on Arctic/Snow ULCANS.		4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L43

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L43 ENGINEER SUPPORT EQUIPMENT - ED	1171	1107	0	305	509	510	6515	4883	0	17862

A. Mission Description and Budget Item Justification: This project supports systems development and demonstration within the Engineer Support Equipment (ESE) arena for assault boats, diving equipment, well drilling modules, woodworking shops, tool outfits, large power generator and electrical distribution systems, and floodlights, which are used for field operations in support of the Future and Joint Expeditionary Force. This project also develops Maintenance equipment associated with Sets, Kits, Outfits and Tools (SKOTs).

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Conduct market investigation, develop performance specifications and conduct pre-production award effort for diving equipment.	530	543	0	305
Allied Trade effort to conduct market investigation, engineering effort, and develop performance specifications for Organizational / General Purpose Shop Set.	268	171	0	0
Conduct Life Cycle Modernization Analyses for Engineer Support Equipment (ESE) Sets, Kits, Outfits and Tools (SKOTs).	132	143	0	0
Develop scope of work for major product improvement for the newly, re-designed Hydraulic System Test and Repair Unit (HYSTRU).	241	250	0	0
Totals	1171	1107	0	305

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L43

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA 3, ML5325, Items Less than \$5.0M (Engineering Support Equipment)	9173	4709	3282	566	11165	9349	13852	14792	Continuing	Continuing

C. Acquisition Strategy: Programs will progress from System Development and Demonstration (SDD) and transition into production.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L43

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Diving equipment	IN-HOUSE	PM SKOT Rock Island	1355	100	2Q	0		50	2Q	Continue	1505	Continue
b . Organizational / General Purpose Shop Set	IN-HOUSE	PM SKOT Rock Island	396	20	1-2Q	0		0		Continue	416	Continue
c . Hydraulic System Test and Repair Unit (HYSTRU)	IN-HOUSE	PM SKOT Rock Island	241	10	1-2Q	0		0		Continue	251	Continue
d . Conduct Life Cycle Modernization Analyses for Engineer Support Equipment (ESE) SKOT Soldier Portable	IN-HOUSE	PM SKOT Rock Island	192	79	2Q	0		0		Continue	271	Continue
Subtotal:			2184	209		0		50		Continue	2443	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L43

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Diving Equipment	IN-HOUSE	PM SKOT Rock Island	0	100	2Q	0		105	2Q	Continue	205	0
b . Organization/General Purpose	IN-HOUSE	PM SKOT Rock Island	0	100	1-3Q	0		0		Continue	100	0
c . Hydraulic System Test and Repair Unit (HYSTRU)			0	90	1-3Q	0		0		Continue	90	0
d . Life Cycle Modernization Analyses for Engineer Support Equipment (ESE) SKOTs	IN-HOUSE	PM SKOT Rock Island	0	14		0		0		Continue	14	0
Subtotal:			0	304		0		105		Continue	409	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng
Dev

PROJECT
L43

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Diving Equipment	MIPR/IN-HOUSE	Navy/PM SKOT Rock Island	0	343	1-3Q	0		150	1-3Q	Continue	493	0
b . Organization/General Purpose	IN-HOUSE	PM SKOT Rock Island	0	51	1-3Q	0		0		Continue	51	0
c . Hydraulic System Test and Repair Unit (HYSTRU)	IN-HOUSE	PM SKOT Rock Island	0	150	1-3Q	0		0		Continue	150	0
d . Life Cycle Modernization Analyses for Engineer Support Equipment (ESE) SKOTs	IN-HOUSE	PM SKOT Rock Island	0	50	1-3Q	0		0		Continue	50	0
Subtotal:			0	594		0		150		Continue	744	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L43

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:												
Project Total Cost:			2184	1107		0		305		Continue	3596	Continue

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L43

Event Name	FY 03				FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Conduct Mkt. Investigate, Dev. Perf. Spec., & Prog. Spt. for Diving Equip.																																
Conduct Sys. Demo for Modernization of Hydraulic Sys. Test & Repair Unit																																
Life Cycle Modernization Analysis for ENG SKOT SBCT Transformation																																
Conduct Mkt. Invest., Dev. Specs & Pgm. Spt. for Org./Gen. Purpose Shop Set																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L43

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Conduct market investigation, develop performance specs, and program support for Diving Equipment	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Conduct Systems Demonstration for modernization of Hydraulic System Test and Repair Unit (HYSTRU).	1-4Q	1-4Q						
Life Cycle modernization analyses for ENG SKOT SBCT Transformation	1-4Q	1-4Q						
Conduct market investigation , Develop Specs and program support for Org / General Purpose Shop Set	1-4Q	1-4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L46

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L46 MAINTENANCE SUPPORT EQUIPMENT	471	1131	0	1402	1444	1502	3308	3561	0	12819

A. Mission Description and Budget Item Justification: This project supports systems development and demonstration within the Maintenance Support Equipment (MSE) arena for automotive tool sets, forward repair mobile maintenance systems, individual & unit tool kits, ground & aviation shop sets and allied trades Sets Kits and Outfits and Tools (SKOT) used in support of the Army.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Conduct Maintenance SKOT Modernization Improvements, Perf Spec Dev, Tech & Program support.	298	958	0	1190
Standard Automotive Tool System (SATS) advanced development.	173	173	0	212
Totals	471	1131	0	1402

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L46

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA 3 ML5345/MA9650 SATS	3972	5418	1300	0	19534	18122	18139	18000	Continuing	Continuing

C. Acquisition Strategy: Programs will progress from System Development and Demonstration(SDD) and transition into production.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng
Dev

PROJECT
L46

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MSE Life Cycle Configuration Analyses and Initial Capabilities Document (ICD) Development Support	In-House	PM SKOT Rock Island	158	348	1-2Q	0		400	1-3Q	Continue	906	Continue
b . Standardized Automotive Tool System Prototype Dev	In-House	PM SKOT Rock Island	173	10	1Q	0		0		Continue	183	Continue
Subtotal:			331	358		0		400		Continue	1089	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Life Cycle Configuration Analyses & Support to Initial Capabilities Document Dev	In-House	PM SKOT Rock Island	15	37	1-2Q	0		100	1-2Q	Continue	152	Continue
b . Standard Automotive Tool System (SATS)			0	0		0		112	1-2Q	Continue	112	0
Subtotal:			15	37		0		212		Continue	264	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L46

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Life Cycle Configuration Analyses & Support to ICD Development	MIPR/In-House	Army Test & Evaluation Command(ATEC)/PM SKOT Rock Island & CASCOM Ord Cntr & School, Ft Lee	0	430	1-2Q	0		400	1-2Q	Continue	830	Continue
b . Standard Automotive Tool System	MIPR/In-House	Army Test and Evaluation Command (ATEC) & PM SKOT Rock Island	0	163	1-3Q	0		100	1-3Q	Continue	263	0
Subtotal:			0	593		0		500		Continue	1093	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L46

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Conduct SKOT Modernization Efforts	MIPR/In-House	Army Test & Evaluation Command & PM SKOT Rock Island	125	143	1-2Q	0		290	1-3Q	Continue	558	0
Subtotal:			125	143		0		290		Continue	558	0
Project Total Cost:			471	1131		0		1402		Continue	3004	Continue

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L46

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Configuration Analyses & ICD Support for Current-to-Future SKO	[Redacted]																															
Standard Automotive Tool System (SATS) Award for Prototype Dev	Milestone B																															

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE **PROJECT**
0604804A - Logistics and Engineer Equipment - Eng **L46**
Dev

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Configuration Analyses for Current-to-Future and SBCT SKOTand ICD Support	2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Standard Automotive Tool Systems (SATS) Award for Prototype Dev	3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604805A - Command, Control, Communications Systems - Eng Dev

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	209197	218402	393062	320725	79362	32215	20388	19118	0	Continuing
097 INTEROP & STANDARDS COMPLIANCE EXPERIMENT & TEST	2241	61	0	0	0	0	0	0	0	3950
485 INFO STANDARDS INTEROP ENG/JOINT INTEROP CERT	5422	2479	5236	5495	5106	5023	5111	5414	0	Continuing
589 ARMY SYS ENGINEERING & WARFIGHTING TECH SUP	3223	5777	5442	5819	5498	5309	5516	5511	0	Continuing
591 WPN SYS TECH ARCH (WSTA)	646	561	0	0	0	0	0	0	0	3436
615 JTRS-GROUND DOMAIN INTEGRATION	195047	97570	230330	197878	14465	2590	0	0	0	Continuing
61A JTRS CLUSTER 5 DEVELOPMENT	0	96378	144654	111533	54293	19293	9761	8193	0	Continuing
629 TACTICAL COMMUNICATIONS SYSTEM - ENGINEERING DEVEL	2618	0	0	0	0	0	0	0	0	15296
F99 NUCLEAR ARMS CTRL TECH - SENSORE NETWORK MONIT	0	15576	7400	0	0	0	0	0	0	22976

A. Mission Description and Budget Item Justification: This Program Element (PE) supports efforts to develop interoperability of Army programs and products, horizontally and vertically for the digitized battlefield. Project D485 supports Information Standards Interoperability Engineering and Joint Interoperability Certification. It provides the critical elements of the Army/Joint Technical Architecture, the mandated standards and communication protocols for Army/Joint ground and air operations, and crucial certification test tools to evaluate systems' interoperability for the Warfighter in support of the Vice Chief of Staff of the Army (VCSA) and Army Acquisition Executive (AAE). It also provides Joint certification testing and certification recommendations to the Joint Chiefs of Staff (JCS) for Army systems. This Army-wide effort directly supports the management, oversight, development, maintenance, and interoperability at the Army enterprise level C4I/IT (Command, Control, Communications, Computers, and Intelligence/Information Technology) architecture efforts required to implement Unit Set Fielding (USF), Software Blocking (SWB) Policy and Army Knowledge Management. Project D589 Army Systems Engineering (ASE) & Warfighter Technical Support provides essential technology expertise on all Systems Engineering and Technical Architecture (SE/TA) matters critical to gain Information Dominance and foster interoperability among all Army systems. The Weapons Systems Technical Architecture (WSTA), Project D591, supports the Army's development and employment of a Real-Time and Embedded Weapon Systems Common Operation Environment (COE). The WSTA Working Group also defines the Defense Information Standards Repository (DISR) specific Weapons Domain profiles and standards (mandatory and emerging) that provide the Department of Defense "building code" which is the foundation for

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

**0604805A - Command, Control, Communications
Systems - Eng Dev**

designing, building, fielding, and supporting interoperable systems in an expedient and cost-effective manner. Project D615 supports the JTRS Cluster 1 program. This project provides for the development of Army Ground Vehicular and Rotary Wing Aircraft platforms. Project D61A supports JTRS Cluster 5 program. This project provides for the development of three radio form factors: Handheld; Manpack (including vehicular mounted); and a family of Small Form Fit (SFF) embedded applications. Project D629, Tactical Communications System - Demonstration Validation, provides for insertion of selected proven communications technology from program elements 0602782A, Project AH92 applied research and 0603008A, advanced technology development, into the next phase of development. The Protocol Investigation for the Next Generation (PING) program evaluates and assesses emerging network protocols, concentrating on the assessment and evaluation of the next generation of Internet Protocol (IPv6) and its protocol dependencies affecting the Army Enterprise Architecture. The Applied Communications and Information Networking (ACIN) project provides for the evaluation and capitalization of emerging commercial communications and networking technologies by leveraging advances, influencing development efforts, influencing standards and delivering technical solutions in support of emerging architectures (JTA-A).

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	219790	173555	135195
Current Budget (FY 2006/2007 PB)	218402	393062	320725
Total Adjustments	-1388	219507	185530
Net of Program/Database Changes			
Congressional Program Reductions	-3312		
Congressional Rescissions			
Congressional Increases	8000		
Reprogrammings			
SBIR/STTR Transfer	-6076		
Adjustments to Budget Years		219507	185530

FY2004 Adjustments: FY 2004 reprogrammings \$-6751 JTRS Cluster 1.

FY2005: Congressional increase to project F99.

FY2006 and FY2007: Project 615 - Program increase fully funds JTRS Cluster 1 to the Operational Requirements Document (ORD) 2.3 baseline. Project

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

**0604805A - Command, Control, Communications
Systems - Eng Dev**

F99: (\$7331) in FY 2007 to higher priority requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev					PROJECT 097	
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
097 INTEROP & STANDARDS COMPLIANCE EXPERIMENT & TEST	2241	61	0	0	0	0	0	0	0	3950

A. Mission Description and Budget Item Justification: This project within MDEP MU17 was re-aligned beginning FY2004 to better support the mission of developing the Army Enterprise Architectures for Information Technology based Command, Control, Computers & Communications (C4/IT) systems. Accordingly in FY2003 all remaining funds in this project were transferred to PE 432612.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Evaluate and certify IT/C4ISR systems interoperability for FDD, Future Force, Joint experiments to assure compliance with the Technical and System Architectures.	458	0	0	0
Provide systems engineering, integrated support & field support for identification and resolution of systems' discrepancies and inconsistencies identified during evaluations.	979	61	0	0
Evaluate and develop transition plan for the Transport Layer of the Army IT infostructure.	168	0	0	0
Funds not received/ not expected	636	0	0	0
Totals	2241	61	0	0

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: The efforts funded in this project are non-system specific, supporting interoperability across multiple systems. The contractual efforts/services are obtained from existing competitive omnibus support services contracts.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
Systems - Eng Dev

PROJECT
097

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labor (Outsourced)	In House	USACECOM, Fort Monmouth, NJ	5290	61		0		0		Continue	5351	0
b . Funds not received			636	0		0		0		0	636	0
Subtotal:			5926	61		0		0		Continue	5987	0

Remarks: All remaining program funds transferred to MU17 PE 432612.
 In FY2004, due to Army withholds, this project funding was reduced to \$1605K.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Engineering	C/CPFF	Arinc, Fort Monmouth, NJ	3403	0		0		0		Continue	3403	0
b . Development Support	C/CPFF	CSC, Fort Monmouth, NJ	607	0		0		0		Continue	607	0
c . Development Support	C/CPFF	C3I, Fort Monmouth, NJ	1001	0		0		0		Continue	1001	0
d . Security Engineering	C/CPFF	Nations, Fort Monmouth, NJ	111	0		0		0		Continue	111	0
e . Equipment	FFP	USA CECOM, NJ	753	0		0		0		Continue	753	0
f . Development Support	C/CPFF	BAH, Fort Monmouth, NJ	40	0		0		0		Continue	40	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
Systems - Eng Dev

PROJECT
097

II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
g . Development Support	C/FP	Binary Consulting Inc. Bethesda, MD	887	0		0		0		0	887	0
h . Funds not received			0	0		0		0		0	0	0
Subtotal:			6802	0		0		0		Continue	6802	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Interoperability			0	0		0		0		0	0	0
b . Funds not received			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev	PROJECT 097
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Interoperability			0	0		0		0		0	0	0
b . Funds not received			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			12728	61		0		0		Continue	12789	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev					PROJECT 485	
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
485 INFO STANDARDS INTEROP ENG/JOINT INTEROP CERT	5422	2479	5236	5495	5106	5023	5111	5414	0	Continuing

A. Mission Description and Budget Item Justification: Focus for this project is to support the engineering or evaluation of commercially-available information technology (IT) tools to develop architecture products Information Technology based Command, Control, Computers, and Communications (C4/IT) systems such as Applications Program Interfaces for Weapons Systems. A significant effort will be on building Army (consistent with DoD) C4/IT technical standards-compliant Army data repositories that are web-accessible but secure. These repositories will be consistent with DoD standards and policies and virtually appear to be a single repository for Army C4/IT architecture products. FY2004-2006 are "transitioning" periods for the Army to incorporate DoD policies, procedures, and constraints.

What follows below is the retention of the original objectives of this project (modified effective FY2006):

To support the Army Vice Chief of Staff (VCSA) and the ARmy Chief Information Officer/G6 as cited in the AEA Master Plan, this initiative fulfills the Clinger-Cohen Act's mandate of developing sound integrated Information Technology (IT) architectures and the Army's Software Blocking Policy. The increased combat power of the Future Force will be dependent on the information superiority of network & knowledge centric warfare and the ability of systems to be fully "interoperable as a member of the joint, multinational, interagency team as well as emerging Future Force (FF) C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) Systems." It identifies and reduces interoperability issues earlier in the life cycle by intra-Army/FF/Joint/combined experiments, certifications, and assessments and through the establishment & sustainment of common standards. This Army wide effort directly supports the management, oversight, development, maintenance, and interoperability of the Army enterprise level C4I/IT architecture efforts required to implement Unit Set Fielding, Software Blocking and Army Knowledge Enterprise Architecture (AKEA). Specifically, this project resources the Army's messaging standards conformance authority in assessing compliance with the Joint Technical Architecture - Army (JTA-A), in meeting the war fighter information exchange requirements and in facilitating their interoperability. Also it resources, in accordance with the JTA-A, the development and maintenance of the following information standards: Variable Message Format (VMF) & Combat Net Radio (CNR) protocol, which support Army/Joint ground operations; Tactical Digital Information Links (TADILs), which support Air Defense operations; and US Message Text Format (USMTF), which support Intel and Commanders operations. It provides the Army's lead for configuration management functions of these standards and test tools at both Army and Joint levels. This project resources the Army participation in joint/allied messaging certification testing & configuration management processes. This project also resources the development and fielding of a suite of four (4) crucial tools which are used throughout the entire Army. These tools which are currently under development will provide the ideal means to: a) validate JTA-A critical messaging and protocol standards; b) improve systems interoperability; c) verify/certify correct system implementations and interpretation to JTA-A; d) sustain/support digitization and transition of fielded systems; e) support Software Blocking and interoperability testing; f) provide Legacy AEA interoperability with Future Combat System (FCS) command and control systems. These crucial tools are critical to the JTA-A Compliance, Certification Testing mission & Interoperability programs.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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The task also supports the Army's transformation campaign while mitigating interoperability issues resulting in reducing cost & program slippages. This project also provides the Configuration Management & Control for the Software Blocking (SWB)/USF (Unit Set Fielding).

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Develop and update architecture standards and protocols necessary to ensure C4ISR systems interoperability.	2274	1285	1500	1750
Conduct, chair & manage at multiple Army CCBs (Configuration Control Boards) and represent the Army at multiple Army/Joint CCBs to support existing and evolving warfighter interoperability.	500	500	0	0
Prepare for and Conduct 10 Joint certification testings to include 30 operational systems, and develop over 500 interoperability problem reports for analysis by Joint services	500	0	0	0
Engineer, develop & publish Army Warfighter Information Standards (i.e. XML-USMTF/VMF, Wireless XML, database exchange, etc...) incorporating DoD standards requirements.	23	0	600	600
Identify, analyze, and provide solutions to gaps in technical architecture standards requirements.	158	200	800	945
Develop, publish and execute the SWB CM (Software Blocking Configuration Management) function to include all the configuration items developed by the Requirements WG (Working Group), Architecture WG, Block Execution Management WG and the IPT/SUB-IPTs for all SW Blocks, ISCCB SOP development, & SWB architecture CM web site development.	344	0	0	0
Develop and engineer Army Net-Centric Enterprise Service standards and protocols supporting OSD Global Information Grid messaging requirements and serve as Army focal point for messaging working group.	0	0	1136	1200
Knowledge Center Development - Build & update as necessary access to website repositories for key policies, directives, and architecture products.	857	486	1200	1000
Funds not received	766	8	0	0
Totals	5422	2479	5236	5495

B. Other Program Funding Summary: Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY

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C. Acquisition Strategy: The efforts funded in this project are non-system specific, interoperability experimentation, evaluation and certification across multiple systems. The contractual efforts/services are obtained from existing competitive omnibus support service contracts.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labor (internal Govt)	In House	USACECOM , Fort Monmouth, NJ	11459	1215	1-4Q	0		0		Continue	12674	0
b . Travel	In House	USACECOM, Fort Monmouth, NJ	346	111	1-4Q	0		0		Continue	457	0
Subtotal:			11805	1326		0		0		Continue	13131	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Support	C/CPFF	Arinc, Fort Monmouth, NJ	5699	0		0		0		0	5699	0
b . Development Support	C/CPAF	Telos, Fort Monmouth, NJ	4581	0		0		0		0	4581	0
c . Development Support	C/CPFF	CSC, Fort Monmouth, NJ	1963	0		0		0		0	1963	0
d . Development Support	C/CPFF	C3I, Fort Monmouth, NJ	1374	0		0		0		0	1374	0
e . Development Support	SS/CPFF	Mitre, Fort Monmouth, NJ	280	0		0		0		0	280	0
f . Development Support/ Army Enterprise Applications Architecture	C/T&M	Binary, Ft. Belvoir, VA	46	0		0		0		0	46	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
g . Development Support-Knowledge Center	C/T&M	ITEL, Ft Monmouth, NJ	1198	0		0		0		0	1198	0
h . Development Support	C/T&M	ITEL, Ft Monmouth, NJ	2018	622	2Q	0		0		Continue	2640	0
i . Development Support	C/T&M	Northrop Grumman (SEC SSES), Ft Monmouth, NJ	1973	606	2Q	0		0		Continue	2579	0
j . Technical Support	C/CPFF	TFE, Fort Monmouth, NJ	65	30	2-3Q	0		0		Continue	95	0
k . Technical Support	C/CPFF	Marconi, Fort Monmouth, NJ	183	0		0		0		0	183	0
l . Equipment	In House	USACECOM, NJ	455	30	4Q	0		0		Continue	485	0
m . Equipment (Development Support)	C/FFP	GTE, Tauton, MA	106	0		0		0		0	106	0
n . Telecommunications	MIPR	USASC, Fort Huachuca, AZ	1145	0		0		0		Continue	1145	0
Subtotal:			21086	1288		0		0		Continue	22374	0

Remarks: *Contracts/awards cited are 5 year (1 base + 4 option years). Future award dates imply future competitive award, contractor TBD.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev	PROJECT 485
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			32891	2614		0		0		Continue	35505	0
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Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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Systems - Eng Dev

PROJECT
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Knowledge Center Development	1-4Q	1-4Q	1-4Q	1-4Q				
Army Enterprise Architecture Policy Development			1-4Q	1-4Q				
Develop Comfiguration Management Processes		1-4Q	1-4Q	1-4Q				
Engineer Warfighter C4/IT Standards			1-4Q	1-4Q				
Evaluate, experiment, and provide systems integration for testing of ACTD, ATD, & STO's	1-4Q							
Experiment/Evaluate Joint Interoperability in conjunction with CIPO initiatives	1-4Q	1-4Q	1-4Q	1-4Q				
Conduct Joint/Coalition Experiments	1-4Q	1-4Q	1-4Q	1-4Q				
Evaluate, certify systems for and support SDD								
Evaluate, certify systems for and support FDC								
DOTE/JDEP Initial Concept/Evaluation/Experiments								
Develop and maintain Combat Net Radio (CNR) Standards	1-4Q	1-4Q						
Develop and maintain Variable Message Format (VMF) application header standards	1-4Q	1-4Q						
Develop and maintain Variable Message Format (VMF) Standards & standard databases	1-4Q	1-4Q						
Configuration Management and control of TADIL(A,B,J) and USMTF standards	1-4Q	1-4Q						
Represent Army on Army/DOD forums	1-4Q	1-4Q						
Test and promulgate Defense Collaborative Tools Set within the Army	1-4Q	1-4Q						

This project has been realigned in POM FY06-11 to primarily develop Architecture Tools & Repositories.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev					PROJECT 589	
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
589 ARMY SYS ENGINEERING & WARFIGHTING TECH SUP	3223	5777	5442	5819	5498	5309	5516	5511	0	Continuing

A. Mission Description and Budget Item Justification: This project has been re-aligned to better support the mission of Army Chief of Staff (CSA) sanctioned Army Architecture Integration Cell (AAIC) for developing and, implementing and maintaining the Army Enterprise Architecture for Information Technology based Command, Control, Computers & Communications (C4/IT) systems. AAIC mission is to develop standards-based architecture products that are inter-operable within the Army as well as the with Joint, Interagency, and Multinational systems.

Through FY2005, this project funded the Army Systems Engineering Office (ASEO) with the primary mission of developing technical architecture standards without compromising DoD-mandated standards but ensuring Army C4/IT systems under development are interoperable with legacy systems still utilized by the Army warfighter, which extend from tactical levels up through operational and strategic components of the Army Battle Command Architecture (ABCA), as well as, the institutional portions of the Enterprise to include the Army's Business Enterprise Architecture (BEA). The ASEO supports the Army CIO/G6 Architecture Integration Cell (AIC) in establishing an integrated AEA framework that complements, and is a natural extension of, the GIG-Enterprise Services (GIG-ES). In addition, the ASEO is an essential contributor in the development of the JBMC2 integrated architecture, the Battle Command Architecture, and emerging Cross-Service Integrated Architecture efforts. Each of these architecture definition and integration efforts is elemental to achieving the Army's goal of a NetCentric Future Force.

Previously, the Joint Technical Architecture (JTA) and JTA-Army (JTA-A) have provided the foundation for designing, building, fielding and supporting Joint interoperable Army systems in an expedient and cost-effective manner. With the revision to the standardization process as implemented by the Defense Information Systems Agency (DISA), technical architecture standards are encompassed in the new Defense Information Systems Repository (DISR) program. The Army must participate in DISR to ensure Army requirements are adequately captured and reflected in any new baseline developed by DISA. The ASEO identifies emerging standards in support of the integration of new technologies into existing Army systems and Advanced Technology Demonstrations/Advanced Concept Technology Demonstrations (ATD/ACTDs), enabling the Army transformation to the Future Force. The ASEO's work efforts in the development and maintenance of Army IT standards within the context of DISR guidelines are critical path elements to achieve transformation, increase joint interoperability and to provide the future Army with the ability to fight and win on tomorrow's battlefields. However, the Technical Architecture (TA) alone only provides the foundation for interoperability. Integrated Army Enterprise Architectures (e.g., ABCA, BEA, etc.) fuse Operational, Systems and Technical views of the Army Enterprise into cohesive and manageable information sets that allow the Army to make consequent decisions regarding the Army's inventory of present and future systems and their associated funding. In this area the ASEO specializes in defining and exploiting (through analysis) the relationships between architectural views to provide quantitative answers to complex questions regarding the Army's future capabilities and the roadmap the Army will pursue in realizing them.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY

5 - System Development and Demonstration

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The allocated resources fund two support efforts for CIO/G6. First, subsequent to the development of the AKEA (Army Knowledge Enterprise Architecture) Guidance Document, V1.1, the effort has shifted to development of the Army Technical Reference Model (TRM) for information broker/mediation services, and mapping the Army's architecture requirements to DOD Net-Centric Operations and Warfare Reference Model, including NCES (Net-Centric Enterprise Services). Second, support of the design, development, deployment and maintenance of the AAIC (Army Architecture Integration Cell) Web-based Knowledge Center continues with increased development requirements and functionality, including the consolidation of architectural repositories, design of the DARS-A (Defense Architecture Repository-Army) database, and acting as the Army's agent for DARS/DARS-A.

Actual availability for FY2005 was \$5759K due to Army withholds.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Analyze and provide Systems Engineering solutions to fill in gaps identified in C4ISR systems under development as well as fielded systems.	1240	1480	1850	1989
Identify unique Army requirements to influence Army/DoD Architecture Technical standards under new Defense Information Systems Repository developed under Defense Information Systems Agency (DISA) oversight. Prior years: Technically influence the development/implementation of Joint Technical Architecture (JTA). FY03 accomplishments: JTA Versions 5.x, 6.0 restructured and aligned with Net-Centric Philosophy and redefined scope and standards applicability. Planned activities: JTA-A version 7.0, 7.5 to include major revision of Information Security Section, to include results of Tactical Imagery Transport Study	183	209	222	185
Investigate information technical standards for inclusion in DSR, Defense Standards Repository. Global Information Grid (GIG) Technologies (XML, JPEG 2000, MPEG 4, IPV6)	90	0	185	185
Research and incorporate applicable emerging open standards-based commercial technologies to influence future force systems. Ensure that open commercial standards adopted by Future Force enabling systems are reflected in the DISR baseline. Maintain subject matter expertise on DISR, Defense Standards Repository Information Technology (IT) standards' mandates to ensure current and future force systems remain interoperable. Ensure a logical and cost-effective evolution of TA baselines while maximizing Joint interoperability.	385	740	740	740
DISR Compliance Requirements -Ensure Program Managers have an executable and effective strategy for implementing the Army/DoD Technical Architecture standards.	0	390	370	555
Validate/Integrate Army Enterprise Technical Views to enable the Army Technical and Systems Architect (CIO/G6) to monitor, assess and control the inherent risks associated with leveraging continuously changing technologies across all Army Enterprise Functionals/PEO/Communities.	370	740	835	925

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007
Provide systems analysis for implementing IPv6 protocol across Army to ensure communications/data-sharing/data-exchange between systems. Prior Years: As a result of the decision agreed to at the 19 Dec 02 AKEA, GOSC, direction of MU17 funding was realigned to support the Protocols Investigation for the Next Generation (PING) program. The PING supported current technology agreements with various technology developers such as HP, Cisco, Microsoft and Telecordia. In addition, PING represented the ARMY CIO/G6 office at various ASD (NII)/DoD CIO meetings discussing DoD IPv6 policy and Transition Planning, participated with JITC at DISA's Def Interop Comm Exercise 2003 (DICE 2003) demonstrating IPv6 interoperability, active member of DoD IPv6 Test Bed evaluating and testing IPv6 benefits and trade-offs, first Army lab participating with North American IPv6 Task Forces MoonV6 initiative, drafted ARmy's Phase I IPv6 Transition plan and initial transition strategy to migrate Army systems and networks to native IPv6 by FY08 in compliance with DoD policy, prepared evaluation criteria for selecting early IPv6 adopter candidates in support of the Army GIO/G6 office, hosted first Army IPv6 data call to collect systems impact information and baseline on Army IPv6 transition plan, provided IPv6 technical guidance and knowledge to the Army acquisition community.	0	370	370	370
Define and exploit (through analysis) the relationships between architectural views to provide quantitative answers to complex questions regarding the Army's future capabilities and the roadmap the Army will pursue in realizing them.	135	370	370	370
Provide systems engineering solutions including technical architectures for Army systems supporting Joint Blue Force Situational Awareness (JBFSA) initiative	820	1478	500	500
Totals	3223	5777	5442	5819

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Government Systems Engineering Support	In House	ASEO, DCTS, PING/03 only, Fort Monmouth, NJ	11755	1978	1-4Q	1978		1978		Continue	17689	0
b . Contract Support	C & T&M-R	C3ISGI, Tinton Falls, NJ	3080	0		0		0		0	3080	0
c . Contract Support	C & FP	TRW, Domingues Hills, CA	1281	0		0		0		0	1281	0
d . Overhead		ASEO/WTS CECOM, Fort Monmouth, NJ	1422	0		0		0		0	1422	0
e . Contract Systems Engineering Support	C & FP	Battelle, Alexandria, VA	354	0		0		0		0	354	0
f . System Development and Integration	MIPR	PEO C3S, PM TOCS, Fort Monmouth, NJ	25	0		0		0		0	25	0
g . Travel	In House	SEC, USACECOM, Ft. Monmouth, NJ	0	20	1-4Q	25		25		0	70	0
h . Development Support	C/T&M	Northrop Grummon (SEC SSES), Ft. Monmouth, NJ	0	50	2Q	50		50		0	150	0
i . Contract Systems Engineering Support	C & FP	SRI, Menlo Park, CA	199	0		0		0		0	199	0
j . Labor (Internal Government)	In House	SEC, USACECOM, Ft. Monmouth, NJ	0	867	1-4Q	867		867		0	2601	0

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . Equipment	In House	USACECOM, NJ	0	5	4Q	5		5		0	15	0
l . Development Support	C & TM	ITEL, Mays Landing, NJ	0	50	2Q	50		50		0	150	0
m . Contract Support	C & FP	Lockheed Martin, Eatontown, NJ	545	0		0		0		0	545	0
n . Development Support - Army Enterprise Applications Architecture	C/T&M	Binary, Ft. Belvoir, VA	0	0	3-4Q	0		0		0	0	0
o . Contract Support	C & T&M	SAIC, Falls Church, VA	1811	0		0		0		0	1811	0
p . Contract Systems Engineering Support	C & FP	SRC, Atlanta, GA	612	0		0		0		0	612	0
q . Contract Systems Engineering Support	SS & FP	MITRE, Tinton Falls, NJ	7457	507	1-2Q	167	1Q	299		0	8430	0
r . Systems Engineering and Integration	MIPR	WTS - ISIO CECOM, Fort Monmouth, NJ	2341	0		0		0		Continue	2341	0
s . Contract Support	C & T&M	Datron, Simi Valley, CA	305	0		0		0		0	305	0
t . Contract Systems Engineering Support	C & FP	Gemini, Billerica, MA	137	0	2Q	0		0		0	137	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
u . Development Support-Knowledge Center	C & TM	ITEL, Mays Landing, NJ	849	0	2Q	0		0		0	849	0
v . Contract Support	IPA Agreement	Rutgers University, New Brunswick, NJ	528	0		0		0		0	528	0
w . Contract Systems Engineering Support	C & FP	Suntek Systems, Eatontown, NJ	460	0		0		0		0	460	0
x . Contract Systems Engineering Support	C & FP	HTPi, Shrewsbury, NJ	145	0		0		0		0	145	0
y . Contract Support	C & TM	Telos, Eatontown, NJ	24	0		0		0		0	24	0
z . Engineering Support	MIPR	ISEC, Fort Huachuca, AZ	1357	0	1-2Q	0		0		Continue	1357	0
aa. Contract Support	C & TM	PTG/CACI, Eatontown, NJ	26	0		0		0		0	26	0
bb. Contract Systems Engineering Support	C & FP	Litton, Reading, MA	245	0		0	1Q	245		0	490	0
cc. Contract Support	C & FP	CSC, Eatontown, NJ	1746	0		0	1-2Q	0		0	1746	0
dd. Contract Support	C & FP	Janus Research Group, Appling GA	72	0		0		0		0	72	0

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
dd. Contract Support	C & T&M	BAE, Tinton Falls, NJ	139	0		0		0		0	139	0
ee. Contract Systems Engineering Support	C & FPI	CSC, Eatontown, NJ	9883	2220	1-4Q	2220		2220		0	16543	0
ee. Contract Systems Engineering Support	C & FP	GTE/BBN, Cambridge, MA	960	0		0		0		0	960	0
ff. Travel	In House	ASEOWTS CECOM, Fort Monmouth, NJ	1376	80	1-4Q	80		80		Continue	1616	0
Subtotal:			49134	5777		5442		5819		Continue	66172	0

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0604805A - Command, Control, Communications
Systems - Eng Dev

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			49134	5777		5442		5819		Continue	66172	0
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Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
TA - JTA-A 7.5								
TA - JTA-A 7.0	2Q							
TA - JTA 5.0								
TA - JTA 6.0	1-4Q							
SWB Shortfall Analysis	2Q							
AS-IS, AS-IS Plus Comms Analysis	1-2Q							
SA - 2DFSAs (3BDE/1CAV)								
BCT 3 - (172nd Inf Bde) S=STRYKER								
Corps Warfighter								
75 Ranger Reg								
AECP/Homeland Security Support								
Joint /HLS Architecture Development								
04 Joint/HLS Architecture Support								
Juice 03								
Joint Blue Force System Analysis (JBFSA) Technical Views	1-4Q	1-4Q	1-4Q	1-4Q				
TA-JTA-A 8.0		2-4Q						
TA-JTA 7.0		1-3Q						
TRADOC BCBL DCTS Assessment								
DCTS Version 2 Phase 2 Testbed								
Develop C4/IT Architecture Standards			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

This project has been realigned to primarily develop C4/IT architecture standards.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev					PROJECT 591		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
591 WPN SYS TECH ARCH (WSTA)	646	561	0	0	0	0	0	0	0	3436

A. Mission Description and Budget Item Justification: Starting FY06, the work in this project will be re-aligned in MDEP MU17 PE 432612 to support the operational requirements of implementing Application Program Interfaces (APIs) for C4/IT information exchange between/among weapons systems. This modification was made to better realized with the mission better link with the mission support for the development of the Army Enterprise Architecture as sanctioned by the Army Chief of Staff (CSA) when the Army Architecture Integration Cell (AAIC) was established in January 2004.

Weapons Systems Technical Architecture (WSTA): The Joint Technical Architecture (JTA) and JTA-Army (JTA-A) provides the "building code" foundation for designing, building, fielding, and supporting interoperable systems in an expedient and cost-effective manner. The WSTA identifies new and emerging standards for integration of new technologies into new and existing Army Weapons Systems in support of Army transformation efforts. WSTA defines JTA and JTA-A Weapon Systems domain specific mandatory and emerging standards which are required for these embedded, real-time computing systems use of electronic data and information. It has and will continue to refine the Common Operation Environment (COE) concept insuring that the Army's hard-real-time and embedded requirements for systems are acknowledged.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Update the WSTA Framework and Define DII COE to WS COE Interfaces	142	150	0	0
Interface Standards Analysis for WS Core Operating Environment (COE)	300	300	0	0
Develop and Test Real-Time Computing WS COE API	0	0	0	0
Develop and Test Real-Time WS COE Mapping Services API	0	0	0	0
Modify and Test Embedded Battle Command (EBC) Software in WS COE	0	0	0	0
Develop, Test, and Certify a WSTA Security Architecture for WS COE	0	0	0	0
Support WS COE Family of API's Transition to Industry and COTS	0	0	0	0
Develop updates to MIL-STD-2525B (Symbology)	0	0	0	0
Research, Define, and Input Unmanned WS Standards in JTA/JTA-A	0	0	0	0
FY05: Modify support per new Defense Information Systems Repository (DISR) requirements promulated by Defense Information Systems Agency (DISA).Maintain and support update of WS Domain of the JTA/JTA-A	0	109	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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**0604805A - Command, Control,
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Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007
Engineering and Program Development Infrastructure	0	0	0	0
Funding not received	204	2	0	0
Totals	646	561	0	0

B. Other Program Funding Summary: Not applicable for this item.

This activity receives an intermediate level of support from participation by Program Executive Offices, Program Managers, Commodity Commands, Academia and Industry. This support significantly supplements the overall WSTA activity at an estimated level of three for one in the near term and five or more to one in the out years.

C. Acquisition Strategy:The efforts funded in this project are non-system specific, interoperability experimentation, evaluation and certification across multiple systems. The contractual efforts/services are obtained from existing competitive Omnibus support services contracts.

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BUDGET ACTIVITY
5 - System Development and Demonstration

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . USAISSC	MIPR	Fort Belvoir, VA	261	70	2Q	0		0		Continue	331	0
b . TACOM-ARDEC	MIPR	Picatinny Arsenal, NJ	2127	162	1-4Q	0		0		Continue	2289	0
c . TACOM-TARDEC	MIPR	Warren, MI	3588	143	1-4Q	0		0		Continue	3731	0
d . GSA	MIPR	Huntsville, AL	1554	0		0		0		0	1554	0
e . AMCOM-AMRDEC	MIPR	Redstone Arsenal, AL	375	169	1-4Q	0		0		Continue	544	0
f . CSC (Nichols Research Corp)	C/CPFF	Huntsville, AL	171	0		0		0		0	171	0
g . PEO AVN	MIP	Redstone Arsenal, AL	25	0		0		0		0	25	0
Subtotal:			8101	544		0		0		Continue	8645	0

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BUDGET ACTIVITY
5 - System Development and Demonstration

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . AMCOM-AMRDEC	In House	Redstone Arsenal, AL	780	41	1-4Q	0		0		Continue	821	Continue
b . Funding not received at AMCOM			1040	0		0		0		0	1040	0
Subtotal:			1820	41		0		0		Continue	1861	Continue

Project Total Cost:			9921	585		0		0		Continue	10506	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev					PROJECT 615	
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
615 JTRS-GROUND DOMAIN INTEGRATION	195047	97570	230330	197878	14465	2590	0	0	0	Continuing

A. Mission Description and Budget Item Justification: Project D615 supports the Joint Tactical Radio System (JTRS)- Cluster 1 and Cluster 5 RDTE development efforts. The Cluster 1 JTRS-Army RDTE program will enable the Army to acquire and field a family of affordable, scaleable, high capacity, interoperable radio sets based on a common JTRS Software Communications Architecture (SCA). The JTRS is a key enabler of the Army Transformation and will provide critical communications capabilities across the spectrum of operations in a Joint environment. The Cluster 1 JTRS is a Joint program encompassing the incorporation of the JTRS Joint Program Office (JPO) developed waveforms (porting), US Army Ground Vehicular and Rotary Wing Aircraft, US Air Force Tactical Control Party (TACP), and US Marine Corps applications. This project supports RDT&E efforts for the JTRS Cluster 1 program while the Services provide funding for their unique requirements. In FY04, funding is shared with the Cluster 5 program. Cluster 5 encompasses the development and design of three form factors: Handheld, Manpack (including vehicular mounted), and a family of Small Form Fit (SFF) embedded applications to support PM UA (Future Combat System) and Land Warrior program capabilities and timelines. Beginning in FY05, all Cluster 5 funding is contained within PE 0604805A, Project D61A.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
JTRS Product Development (JTRS Cluster 1 Vehicular and Airborne Hardware Design and Development of Prototypes and technical engineering support)	149009	76080	203683	162176
JTRS Test and Evaluation (JTRS EPG Testbed and Test Planning/Test Support/Electronic and Information Warfare Test and Evaluation/Labor)	7466	8794	9336	18066
JTRS Management Services (JTRS Program Management Office Support)	10557	9427	14337	14483
JTRS Support Costs (Systems Engineering and Technical Support)	2801	3009	2974	3153
Initiate the development and design of an embeddable and dismountable form factor identified as Cluster 5	21974	0	0	0
Data Base Adjustement to Balance	3240	260	0	0
Totals	195047	97570	230330	197878

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604805A - Command, Control,
 Communications Systems - Eng Dev**

PROJECT
615

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA, Army, JTRS Cluster 1, B90100*	0	109222	0	0	107241	183204	242909	283479	Continuing	Continuing
RDTE, JTRS, 0604280A/D162**	128611	117259	156665	110951	80991	35304	0	0	0	629781
RDTE, PEO AVN, JTRS A-Kit PE 64201/C97	44783	24232	10773	19537	35965	23541	10908	13241	Continuing	Continuing
APA, PEO AVN, JTRS A-Kit Procurement AA0702/AA0700***	1535	0	0	0	0	15391	43018	48946	Continuing	Continuing
Future Combat System (FCS), RDTE 60465A/F56/F61****	4500	34858	0	0	0	0	0	0	0	39358

Note: *This funding represents Cluster 1 only. ** Funding represents all Clusters. ***Other Procurement, Army funding is JTRS Cluster 1 only. Funding in line AA0702 for FY 2004 only. Funding is contained within AA0700 in FY 2005 and out. ****FCS funding reflects relevant Cluster 1 funding only and does not reflect entire FCS program funds. FCS JTRS Cluster 1 relevant funding is contained within Project F56 in FY 2004 and Project F61 in FY 2005.

C. Acquisition Strategy: Joint Tactical Radio System (JTRS): Beginning in FY05, Project D615 supports the JTRS Cluster 1 Army System Development and Demonstration efforts only. In FY04, Cluster 5 shares the funding contained in Project D615 but has its own line, Project D61A, beginning in FY05. The Army Project Manager Warfighter Information Network-Tactical (PM WIN-T) is the lead for the Cluster 1 effort. Under Cluster 1, a software reprogrammable radio providing the warfighter with a multi-band and multi-mode capability, networkable radio system which provides simultaneous voice, data and video communications to increase interoperability, flexibility and adaptability in support of varied mission requirements is being developed. The JTRS Joint Program Office (JPO) is responsible for common core activities including developing, maintaining, and evolving the JTRS open standards architecture, providing re-coded versions of legacy waveforms to operate on JTRS architecture compliant hardware, and provides a certifying infrastructure for hardware/software compliance. After a successful Milestone B Decision in 3QFY02, the Cluster 1 development effort was awarded to develop multi-channel ground and airborne configurations. The JTRS Cluster 1 supports an evolutionary acquisition strategy and was based on an aggressive acquisition schedule. In June 2002, a cost plus award fee contract was competitively awarded to a Prime Systems Engineering Contractor (The Boeing Company) who is responsible for developing and/or acquiring numerous Software Communications Architecture compliant waveforms, defining common form-fit-function configurations for vehicular and aviation versions of the JTRS hardware, and successfully porting the waveforms to JTRS hardware produced by two different developers. In FY05, the program is undergoing a schedule replan effort resulting from required hardware changes to address security related issues and contract cost growth which materialized in early FY 05. The impacts of the replan are still being assessed. The FY05 budget supports continued development and support for the Cluster 1 Ground and Airborne sets, design of ground vehicular A-kits for

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)**February 2005**

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platforms required for testing, and supports an Early Operational Assessment in 1QFY05-3QFY05. A rebaselining Defense Acquisition Board (DAB) is planned for 4QFY05. The FY06 and out budget supports continued development and support for the Cluster 1 Ground and Airborne sets, design of ground vehicular A-kits (installation kits) for platforms required for testing for System Integration Test (SIT)/Limited User Test (LUT) and Multi-Service Operational Test and Evaluation (MOT&E) testing for Cluster 1.

The JTRS Cluster 5 program has been structured to satisfy requirements for handheld, manpack, and small form fit embedded radios. Technical requirements are met over time, using spiral development.

A successful Milestone B was achieved on 26 April 2004 to begin the development of the Cluster 5 systems. Following full and open competition, a single cost plus award fee contract was awarded on 16 July 2004 for the development of the Cluster 5 systems. The Cluster 5 program has been designated an ACAT 1C program. In FY04, Cluster 5 funding is contained in PE 0604805A, Project D615. Beginning in FY05, Cluster 5 funding transitions to PE 0604805A, Project D61A.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . NTDRS CPIF/T&M/FFP/Ancillary Equip,NMT, and MISC Efforts*	C/T&M/CPI F/FFP/MISC	ITT, Fort. Wayne, IN/MISC	10145	0		0		0		0	10145	10145
b . JTRS Army Step 2C Hardware Development & Prototypes, Anc Equip/Log & Engrg	C/OTA/T&M /Various	BAE Systems, Wayne, NJ/Various	7492	0		0		0		0	7492	7492
c . JTRS Cluster 1 GFE	Various	Various	75	0		0		0		0	75	0
d . JTRS Cluster 1 (EPLRS Data Rights)	SS/FFP	Raytheon, Fullerton, CA	5000	0		0		0		0	5000	0
e . JTRS Cluster 1 SDD Development	C/CPAF	BOEING, Anaheim, CA	253602	70922	1-2Q	199463	1-2Q	160672	1-2Q	Continue	Continue	0
f . Tactical Internet Integration	T&M	ITT, Ft. Wayne,IN	1792	0		0		0		0	1792	0
g . JTRS Development - System Engrg Spt	various	MISC	3798	1339	1-2Q	1420	1-2Q	1504	1-2Q	Continue	Continue	0
h . ABCS System Engineering and Integration Efforts	Various	MISC	1227	0		0		0		0	1227	0
i . Cluster 5 Design and Development**	C/CPAF	TBD	21974	0		0		0		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0604805A - Command, Control, Communications
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PROJECT
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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . Technology Development Strategy Efforts	Various	Various	3214	3819	1-3Q	0		0		Continue	Continue	0
k . Institutional Web Development	TBD	TBD	0	0		2800	1Q	0		0	2800	0
Subtotal:			308319	76080		203683		162176		Continue	Continue	17637

Remarks: *NTDRS efforts prior to FY 2000 were funded in PE 0603713A, Proj D370
 **Cluster 5 efforts in FY05 and out are funded in PE 0604805A, Proj D61A

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . *NTDRS Test/Training/Logistics/Technical /Exercise Support	Various	Various	7562	0		0		0		0	7562	0
b . JTRS Antenna Studies	PWD	ARINC, Annapolis, MD	504	0		0		0		0	504	0
c . JTRS Technical Support	Various	Miscellaneous	10098	3009	1-2Q	2974	1-2Q	3153	1-2Q	Continue	Continue	0
d . ABCS SE&I Effort			1633	0		0		0		0	1633	0
Subtotal:			19797	3009		2974		3153		Continue	Continue	0

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BUDGET ACTIVITY
5 - System Development and Demonstration

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Remarks: *NTDRS efforts prior to FY 2000 were funded in PE 0603713A, Proj D370

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . *NTDRS Field Testing	MIPR	EPG, Fort Huachuca, AZ	95	0		0		0		0	95	0
b . JTRS Step 2C EPG Qual Testing/Customer Testing	MIPR	EPG, Fort Huachuca, AZ	2450	0		0		0		0	2450	0
c . JTRS EPG Testbed and Test Planning	MIPR	EPG, Fort Huachuca, AZ	3476	1336	1Q	1336	1Q	2985	1Q	Continue	Continue	0
d . JTRS Modeling & Simulation	MIPR	USAIC	1588	2329	1-2Q	2665	1-3Q	2076	1-2Q	Continue	Continue	0
e . JTRS Test Inhouse Spt & Govt Activities	Various	Various	2873	2054	1Q	1871	1Q	2052	1Q	Continue	Continue	0
f . JTRS EOA/SIT/LUT/MOTE Test Activity			4190	3075	1-3Q	3464	1-3Q	10953	1-3Q	Continue	Continue	0
Subtotal:			14672	8794		9336		18066		Continue	Continue	0

Remarks: *NTDRS efforts prior to FY 2000 were funded in PE 0603713A, Proj D370

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . *NTDRS Program Support	MIPR	Fort Monmouth, NJ	655	0		0		0		0	655	0
b . JTRS Business/Engineering Management	Various	Various	14991	3751	1-4Q	3497	1-4Q	4697	1-4Q	Continue	Continue	0
c . Project Management Office Support	Various	Various	12922	4728	1-4Q	9835	1-4Q	8721	1-4Q	Continue	Continue	0
d . JTRS MITRE Support	PWD	MITRE Corp., Mclean, VA	3062	948	1Q	1005	1Q	1065	1Q	Continue	Continue	0
e . Data Base Correction Action			3240	260		0		0		0	3500	0
Subtotal:			34870	9687		14337		14483		Continue	Continue	0

Remarks: *NTDRS efforts prior to FY 2000 were funded in PE 0603713A, Proj D370

Project Total Cost:			377658	97570		230330		197878		Continue	Continue	17637
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604805A - Command, Control, Communications
 Systems - Eng Dev**

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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) Rebaseline DAB, (2) MS C	Rebaseline DAB												MS C																			
(3) OIPT, (4) FRP IPR													OIPT								FRP IPR											
(5) Exercise LRIP Opt 1, (6) Exercise LRIP Opt 2, (7) FRP Award, (8) F & F Systems	F & F Systems												LRIP Opt 1				LRIP Opt 2				FRP Award											
(9) Pre-EDM Deliveries, (10) EDM Deliveries, (11) First Unit Equipped	Pre-EDM								EDM												FUE											
LRIP 1 Deliveries																	LRIP 1															
LRIP 2 Deliveries																					LRIP 2											
Waveform Deliveries, FRP					Waveform Deliveries																				FRP							
Early Development Testing	EDT																															
Early Operational Assessment, Reliability Development Growth Testing					EOA								RDGT																			
Limited User Test													LUT																			
Critical Design Test, First Article Test									CDT								FAT															
Production Qualification Test													PQT																			
System Integration Test, Multiservice Operational Test and Evaluation													SIT								MOT&E											

Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
JTRS-Early Operational Assessment		1-3Q						
JTRS Cluster 1 OIPT Approval to Exercise Option 1					1Q			
JTRS-Army Cluster 1 LRIP Option 1 Contract Award					1Q			
JTRS-Army Cluster 1 Ground & Airborne System Integration Test/Limited User Test (LUT)				3-4Q	1Q			
JTRS Cluster 1 Milestone C					2Q			
JTRS-Army Cluster 1 Ground & Airborne MOT&E						2-3Q		
JTRS-Army Cluster 1 LRIP Option 2 Award						1Q		
LRIP Option 1 Deliveries Begin					4Q			
Full Rate Production In Process Review							1Q	
Full Rate Production Contract Award							1Q	
LRIP Option 2 Deliveries Begin						3Q		
Full Rate Production Deliveries							3Q	
Product Improvements					1-4Q	1-4Q	1-4Q	2-4Q
Rebaseline DAB		4Q						
Cluster 5 Milestone B	3Q							
Cluster 5 Contract Award	4Q							

Cluster 5 schedule profile detail for FY05-11 is contained within PE 0604805A Project D61A.

Schedule Milestones reflect the draft replan acquisition strategy. The full impacts of the replan are still being assessed.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev				PROJECT 61A		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
61A JTRS CLUSTER 5 DEVELOPMENT	0	96378	144654	111533	54293	19293	9761	8193	0	Continuing

A. Mission Description and Budget Item Justification: Project 61A supports the Joint Tactical Radio (JTRS) Cluster 5 RDT&E development effort. JTRS is the Department of Defense (DOD) family of common software-defined programmable radios that will form the foundation of information radio frequency transmission for Joint Vision 2020. JTRS will ultimately replace all existing tactical radios through the Services' migration plans and introduce new capabilities to the Warfighter. Cluster 5 provides the Warfighter with a software re-programmable, networkable, multi-band, multi-mode system capable of simultaneous voice, data and video communication, and the JTRS Joint Program Office (JPO) is responsible for certifying that all JTRS waveforms are Software Communications Architecture (SCA) compliant. The JTRS Cluster 5 program consists of three form factors: Handheld, Manpack (including vehicular mounted), and a family of Small Form Fit (SFF) embedded applications. It is structured in two spirals. Spiral 1 provides early delivery of two channel Manpack radios to meet immediate user requirements in accordance with JTRS Operational Requirements Document (ORD) 2.3 with specific waveforms. Spiral 2 provides more enhanced capability for Cluster 5 variants for delivery of Handheld, Manpack, and Small Form Fit factors in accordance with ORD 3.2. JTRS Cluster 5 is working with PM UA (Future Combat Systems) and Land Warrior programs to support their capabilities and timelines.

This is not a new start. Prior to FY05 the Cluster 5 program funding was captured within PE 0604805A, Project 615 (JTRS Cluster 1).

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
JTRS Cluster 5 Product Development of both spiral 1 and spiral 2 radios.	0	84257	124209	89468
JTRS Cluster 5 Test and Evaluation	0	5957	7565	10381
JTRS Cluster 5 Management Services (JTRS Program Management Office Support)	0	3314	9683	9342
JTRS Cluster 5 Support Costs (Technical Support)	0	2850	3197	2342
Totals	0	96378	144654	111533

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
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PE NUMBER AND TITLE
**0604805A - Command, Control,
 Communications Systems - Eng Dev**

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, JTRS JPO Waveform Certification, 0604280A/162	128611	117259	156665	110951	80991	35304	0	0	Continuing	Continuing
RDTE, FCS, 654645/F61	0	13000	0	0	0	0	0	0	0	13000
OPA, JTRS Cluster 5, B90210	0	0	0	0	45397	82164	128907	158277	Continuing	Continuing
OPA, JTRS Cluster 1, B90100	0	0	0	0	442	1004	6274	8665	0	16385

C. Acquisition Strategy: This program satisfies requirements for Handheld, Manpack and Small Form Fit embedded radios. Cluster 5 technical performance requirements are met over time, using spiral development. JTRS Cluster 5 will use JPO certified waveforms. The JTRS JPO has responsibility to acquire required waveforms for all Clusters.

A successful Milestone B was achieved on 26 April 2004 to begin the development of the Cluster 5 system. Following full and open competition, a single Cost Plus Award Fee contract was awarded on 16 July 2004. The contract is structured to address the two spirals, including options to purchase hardware for each spiral. Spiral 1 is structured to meet the need for expeditious delivery of Manpack systems. A two-channel Manpack Engineering Development Model (EDM) with specified waveforms will be delivered by 1QFY06. Spiral 2 will meet JRS ORD 3.2 requirements developing all form factors including Handheld, Manpack and Small Form Fit variants.

The program is entering the acquisition lifecycle at Milestone (MS) B, System Development and Demonstration (SDD).

There will be two Production Option Awards for Spiral 1 Limited Production, in FY06 and FY07. After Milestone C, there will be two LRIP Option Awards for Spiral 2 in FY08 and FY09. A competitive full rate production (FRP) contract award is scheduled for FY10.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
Systems - Eng Dev

PROJECT
61A

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . JTRS Cluster 5 Design, Development and Manufacture of Engineering Development Models (EDMs)	C/CPAF	General Dynamics Decision Systems, Scottsdale, AZ	0	81559	2Q	115900	1Q	84700	1Q	Continue	282159	0
b . JTRS Cluster 5 Development System Engineering Support	Various	Various	0	2698	1-2Q	8309	1-2Q	4768	1-2Q	Continue	15775	0
Subtotal:			0	84257		124209		89468		Continue	297934	0

Remarks: Funding for FY2004 is captured in PE 0604805A in the Project 615 (Cluster 1).

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . JTRS Technical Support	Various	Various	0	2850	1-3Q	3197	1-3Q	2342	1-3Q	Continue	8389	0
Subtotal:			0	2850		3197		2342		Continue	8389	0

Remarks: Funding for FY2004 is captured in PE 0604805A in the Project 615 (Cluster 1).

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
Systems - Eng Dev

PROJECT
61A

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . JTRS EPG test bed and planning	MIPR	EPG, Ft. Huachuca, AZ	0	115	1-2Q	582	1Q	591	1Q	Continue	1288	0
b . JTRS Modeling & Simulation	MIPR	USAIC, Ft. Huachuca, AZ	0	299	1Q	89	1Q	92	1Q	Continue	480	0
c . JTRS Test Inhouse Support & Government Activities	Various	Various	0	1350	1-3Q	1379	1-3Q	1562	1-3Q	Continue	4291	0
d . Field Test/LUT and OT	Various	Various	0	4193	1-3Q	5515	1-3Q	8136	1-3Q	Continue	17844	0
Subtotal:			0	5957		7565		10381		Continue	23903	0

Remarks: Funding for FY2004 is captured in PE 0604805A in the Project 615 (Cluster 1).

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management Office Support	Various	Various	0	1911	1-4Q	8108	1-4Q	7396	1-4Q	Continue	17415	0
b . JTRS Business/Engineering Management	Various	Various	0	1403	1-4Q	1575	1-4Q	1946	1-4Q	Continue	4924	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev	PROJECT 61A
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IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	3314		9683		9342		Continue	22339	0

Remarks: Funding for FY2004 is captured in PE 0604805A in the Project 615 (Cluster 1).

Project Total Cost:			0	96378		144654		111533		Continue	352565	0
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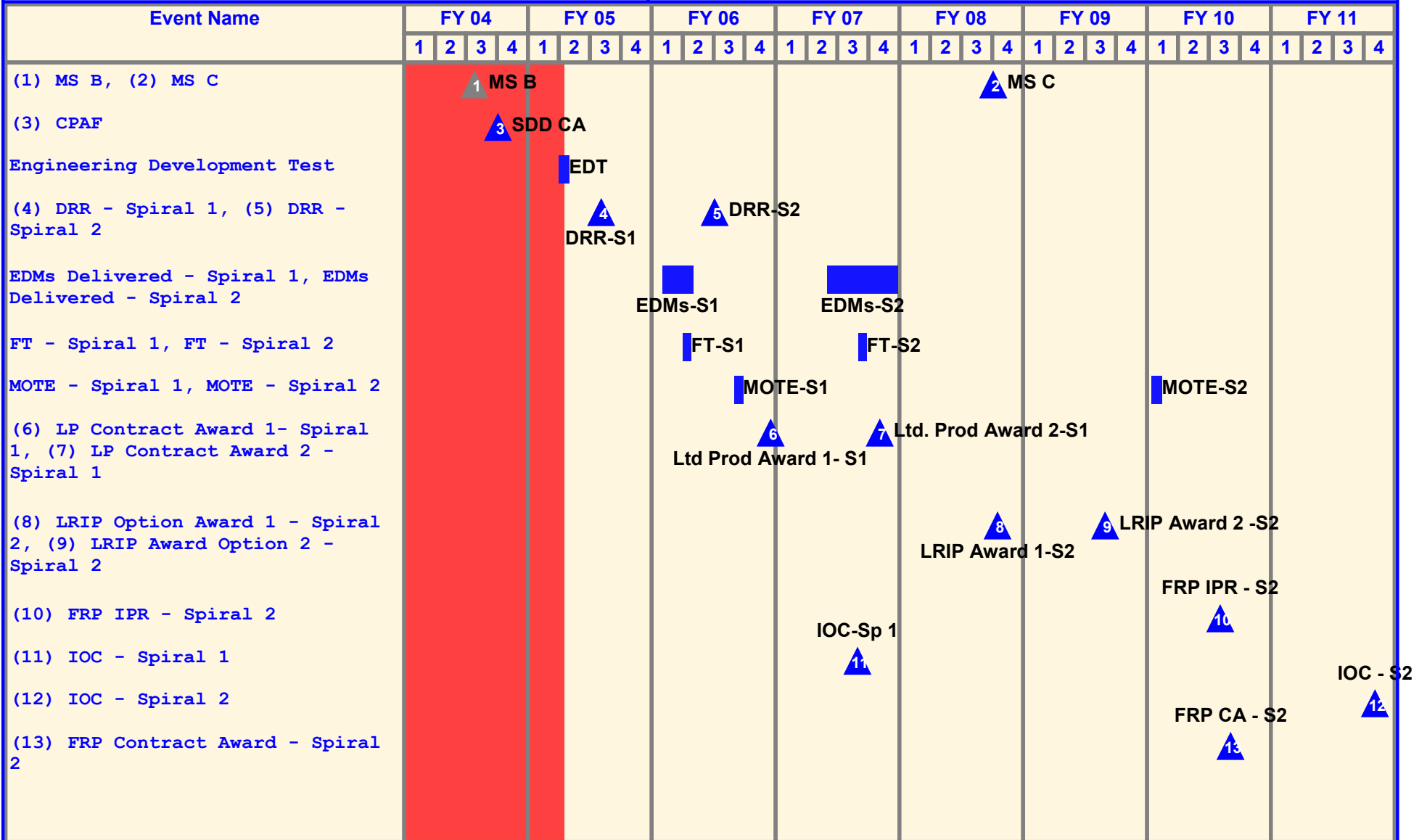
Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604805A - Command, Control, Communications
 Systems - Eng Dev**

PROJECT
61A



Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
Systems - Eng Dev

PROJECT
61A

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone B Decision	3Q							
SDD Contract Award	4Q							
Engineering Development Test - Spiral 1		2Q						
Design Readiness Review - Spiral 1		3Q						
Design Readiness Review - Spiral 2			3Q					
Engineering Development Models (EDMs) Delivery - Spiral 1			1Q					
Field Test - Spiral 1			2Q					
MOTE - Spiral 1			3Q					
Engineering Development Models (EDMs) Delivery - Spiral 2				2-4Q				
Government Tests and Field Test - Spiral 2				3Q				
MOTE - Spiral 2							1Q	
Limited Production Award 1 - Spiral 1			4Q					
Limited Production Award 2 - Spiral 1				4Q				
LRIP Award 1 - Spiral 2					4Q			
LRIP Award 2 - Spiral 2						3Q		
Limited User Test (LUT)					2Q			
Milestone C Decision					3Q			
FRP Award							3Q	
Initial Operational Capability (IOC) - Spiral 1				3Q				
Initial Operational Capability (IOC) - Spiral 2								4Q

Spiral 1 - two-channel manpack systems.

Spiral 2 - all form factors including Handheld, Manpack, and Small Form Fit variants.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev					PROJECT 629		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
629 TACTICAL COMMUNICATIONS SYSTEM - ENGINEERING DEVEL	2618	0	0	0	0	0	0	0	0	15296

A. Mission Description and Budget Item Justification: The work in this project has been re-aligned in MDEP MU17 PE 432612 to better link with the mission support for the development of the Army Enterprise Architecture as sanctioned by the Army Chief of Staff (CSA) when the Army Architecture Integration Cell (AAIC) was established in January 2003.

The Protocol for Investigation Next Generation (PING) Program's objectives are to identify network and communication architecture gaps, validate emerging network technologies, assess proposed network solutions, ensure system of systems network communications interoperability among tactical and sustaining Army assets, as well as, with Joint, Interagency, and Multinational systems, and verify compliance to Army Knowledge Enterprise Architecture (AKEA) System and Technical Views that will make possible the Army's Objective Force. The PING analyze emerging commercial network communication protocols assessing their benefits and suitability to satisfy Army requirements, mitigate risks associated with implementing them across the AKEA and future combat systems, and to assist system developers in incorporating emerging technologies across Army communication systems accelerating Army Transformation goals.

The PING Program is the Army's principal organization evaluating and testing the Next Generation of Internet Protocol, Version 6, or IPv6. While IPv6 is being implemented globally, the PING will determine a coordinated approach for Army adaptation of IPv6 that will meet current network communication requirements, maintain interoperability across Army, Joint, Interagency, and Multinational systems, and provide the enhancements necessary to make the Objective Force possible.

The PING program supports the Army Chief Information Office (CIO/G6), the Future Force Task Force (OFTF), and maintain close cooperation with the Army System Engineering Office (ASEO); helping identify technologies suitable for consideration in future versions of the Joint Technical Architecture - Army (JTA-A), and various PEOs/PMs by participating at Working Groups involved with System Views (SVs) and Technical Views (TVs). The PING will analyze or develop SVs and TVs.

The PING Program's mission is critical for mitigating risks associated in the evolution and maturation of communications networks within the AKEA.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev	PROJECT 629
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<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Applied Communications and Information Networking (ACIN) FY03: - The objective of this one year Congressional add is to investigate specific emerging commercial communication technologies in the areas of Information Assurance, Subterranean Communications, Software Defined Radio and SATCOM On-The-Move. No additional funding is required to complete this project.	0	0	0	0
Develop systems architecture products for current, legacy, and future force units whose operational views have been completed and validated.	2298	0	0	0
Funds not received	320	0	0	0
Totals	2618	0	0	0

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy:NA

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
Systems - Eng Dev

PROJECT
629

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Systems Engineering	In House	CECOM RDEC, Fort Monmouth, NJ	10967	0		0		0		Continue	10967	0
b . 1)		MITRE, Eatontown, NJ	1226	0		0		0		0	1226	0
c . 2)		SRI, Eatontown, NJ	840	0		0		0		0	840	0
d . ACIN	OTA (Other Transactions)	Drexel Univ, Philadelphia, Pa	27388	0		0		0		0	27388	0
e . Funds not received			320	0		0		0		0	320	0
Subtotal:			40741	0		0		0		Continue	40741	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
Systems - Eng Dev

PROJECT
629

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			40741	0		0		0		Continue	40741	0
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Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604805A - Command, Control, Communications
 Systems - Eng Dev**

PROJECT
629

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Evaluate Architecture Issues	1-4Q							
Assessment and Analysis of Technology Impacts	1-4Q							
Policy and Implementation Plan Development	1-4Q							

Efforts in this project are no longer required beyond FY2005. Implementation of developed products are funded in PE 432612.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev					PROJECT F99	
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
F99 NUCLEAR ARMS CTRL TECH - SENSORE NETWORK MONIT	0	15576	7400	0	0	0	0	0	0	22976

A. Mission Description and Budget Item Justification: This project provides Research, Development, Testing & Evaluation (RDT&E) to meet technology requirements in support of implementation, compliance, monitoring and inspection for existing and emerging nuclear arms control activities and dual use technology for missile defense integration activities. The project addresses requirements validated by the Office of the Under Secretary of Defense, Acquisition, Technology & Logistics (OUSD AT&L). This project conforms to the administration's research and development priorities as related to nuclear weapons of mass destruction arms control and disarmament. Technical assessments are made to provide the basis for sound project development, evaluate existing programs and provide the data required to make compliance judgments and support U.S. policy, decision-makers and negotiating teams. Technology developments and system improvement projects are conducted to ensure that capabilities for monitoring systems are available when required.

Primary emphasis is on improved sensor capabilities and improved detection and assessment capabilities against a wide range of threat origins.

The program includes development of equipment and procedures for data exchanges, inspections and monitoring capability and analysis. The technologies and procedures developed in the arms control technology program provide an invaluable source of information on equipment and procedures that is extensively used by U.S. and international agencies.

This project element also supports the JCS warfighting capability area of counterproliferation.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Conduct analyses as required to support the OSD manager	0	400	350	0
Development of prototype sensor	0	1500	1400	0
Development of radionuclide particle and noble gas detectors	0	850	825	0
Information system enhancements	0	850	825	0
Continue the R&D support system	0	600	500	0
Research on location calibration for seismic events	0	1712	1600	0
Development of techniques to identify signals from sensor systems	0	2000	1900	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604805A - Command, Control,
 Communications Systems - Eng Dev**

PROJECT
F99

Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007
Development of Standoff Sensor for Radionuclide Identification	0	7664	0	0
Totals	0	15576	7400	0

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
Systems - Eng Dev

PROJECT
F99

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Product Development			0	3100	1-2Q	2100	1-2Q	0		0	5200	0
Subtotal:			0	3100		2100		0		0	5200	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Monitoring Sensor Systems, Program Data Analysis, Verification Systems Concept Demo		SAIC, General Dynamics, VA	0	4653	1-4Q	2800	1-4Q	0		0	7453	0
b . Support Contracts & Government Support	Various	FL, NM, VA, AL	0	2323	1-4Q	1000	1-4Q	0		0	3323	0
c . SMDC		Huntsville, AL	0	1500	1-4Q	500	1-4Q	0		0	2000	0
Subtotal:			0	8476		4300		0		0	12776	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
Systems - Eng Dev

PROJECT
F99

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test and Eval	Huntsville, AL		0	2000	2-3Q	500	2-3Q	0		0	2500	0
Subtotal:			0	2000		500		0		0	2500	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . SMDC		Huntsville, AL	0	2000	1-4Q	500	1-4Q	0		0	2500	0
Subtotal:			0	2000		500		0		0	2500	0

Project Total Cost:			0	15576		7400		0		0	22976	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604805A - Command, Control, Communications
 Systems - Eng Dev**

PROJECT
F99

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Conduct exps & calibrations for seismic, hydroacoustic, infrasound, & radio																																
Baseline system software & analytical tools for event detection & identific																																
Develop a fiber optic acoustical sensor																																
Develop a radionuclide event analysis tool																																
Develop a Standoff Sensor																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
Systems - Eng Dev

PROJECT
F99

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Conduct experiments and calibrations for seismic, hydroacoustic, infrasound, and radionuclide sensor		1-4Q	1-4Q					
Baseline system software and analytical tools for event detection and identification		1-4Q	1-4Q					
Develop a fiber optic acoustical sensor		1-4Q	1-4Q					
Development a radionuclide event analysis tool		1-4Q	1-4Q					
Develop a Standoff Sensor		1-4Q						

This program transferred from the Defense Threat Reduction Agency (DTRA) to SMDC in FY03 IAW PBD 289 (FY04). In FY03, DTRA re-allocated funds to SMDC for management of the program. During the FY04 BES, the program was transferred to the Army and placed in PE 0603782A, Project #F98. During PB 05, the program was transferred to PE 0604805A, Project #F99. This is an on-going program; not a new program start.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604807A - Medical Materiel/Medical Biological Defense Equipm

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	21820	19325	5627	14418	16017	35984	35204	16112	0	176341
812 MIL HIV VAC&DRUG DEV	3098	3567	4201	4541	4681	4707	4544	4542	0	33881
832 COMBAT MEDICAL MATL ED	5467	4260	824	3714	5386	15374	14984	5800	0	65190
834 SOLDIER SYS PROT-ED	5693	1011	0	3030	1887	1844	1780	1778	0	17791
849 INFEC DIS DRUG/VACC ED	3647	3392	602	3133	4063	14059	13896	3992	0	50053
A11 LSTAT MEDICAL TECHNOLOGY (CA)	2005	1727	0	0	0	0	0	0	0	2078
A12 BIOMEDICAL ENGINEERING TECH & ADV MATERIALS (CA)	955	0	0	0	0	0	0	0	0	990
A13 PRESSURE SWING ABSORPTION OXYGEN CONCENTRATOR (CA)	955	0	0	0	0	0	0	0	0	990
A14 CHITOSAN BANDAGE COMPONENT (CA)	0	2013	0	0	0	0	0	0	0	2013
A15 BIOTERRORISM EDUCATION (CA)	0	958	0	0	0	0	0	0	0	958
A16 CHEMICAL-BIOLOGICAL CASUALTY TREATMENT (CA)	0	2397	0	0	0	0	0	0	0	2397

A. Mission Description and Budget Item Justification: This program element (PE) funds advanced development of medical materiel within the System Demonstration and Low Rate Initial Production portions of the Acquisition Life Cycle. It supports products successfully transitioned through the Systems Development and Demonstration In-Process Review (IPR). This largely includes Phase 3 human clinical trials, along with related stability and production manufacturing testing for medical pharmaceuticals, biologics, and devices. Added operational testing (OT&E) for military unique requirements is evaluated and fulfilled as required.

Disease and non-battle injuries (DNBI) are the largest contributor to the medical footprint. Infectious disease vaccines and preventive drugs reduce the risk of service members' contracting debilitating or fatal diseases, which reduces levels of DNBI affected soldiers – and in turn, negates the requirement for supporting echelon 3 facilities in the theater of operations, as well as mitigates the strain placed on the Army's personnel replacement and logistical systems. This is especially important due to the higher risk posed by the ever expanding urban warfare environments. More importantly, the reduction of patient evacuation requirements within Future Force (F2) units will act as a force multiplier, due to the retention of uniquely skilled and combat tested soldiers in the theater.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)**February 2005**

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604807A - Medical Materiel/Medical Biological Defense Equipm

Combat Casualty Care devices and medicines have the major effects of: (1) enhancing forward care at the first responder level and, (2) reducing the medical footprint. The result is a far greater mobile and more easily sustained medical force. The F2 concept places soldiers into a more austere environment with lengthened evacuation times (both arrival and transit). This requires medics and first responders to improve their ability to save lives and extend stabilization. Reduction in weight, cube, and sustainment allows medical units to increase mobility and maintain contact with their supported Units of Action.

Soldier Performance Enhancers in the form of drugs or diagnostics, allow commanders to increase soldiers' cognitive awareness and stamina. This improves soldiers' operational capabilities and has the potential to reduce casualties.

The U.S. Army Medical Research and Materiel Command manages this program.

Project 812, Military HIV Vaccine and Development funds militarily relevant human immunodeficiency virus (HIV) research.

Major contractors/intra-governmental agencies include Cambridge Consultants Corporation, IGR Enterprises, Army Medical Department Board Test Center, SeQual Technologies, Inc., and the American National Red Cross.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological Defense Equipm

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	11727	12402	14322
Current Budget (FY 2006/2007 PB)	19325	5627	14418
Total Adjustments	7598	-6775	96
Net of Program/Database Changes			
Congressional Program Reductions	-283		
Congressional Rescissions			
Congressional Increases	8400		
Reprogrammings			
SBIR/STTR Transfer	-519		
Adjustments to Budget Years		-6775	96

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipm	PROJECT 812
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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
812 MIL HIV VAC&DRUG DEV	3098	3567	4201	4541	4681	4707	4544	4542	0	33881

A. Mission Description and Budget Item Justification: This project funds Congressionally mandated, militarily relevant human immunodeficiency virus (HIV) medical countermeasures. These funds provide for engineering and manufacturing development of sufficient candidate vaccines and drugs to permit large-scale field testing and education/training materials. Development efforts are focused on militarily unique needs affecting manning, mobilization, and deployment.

The major contractor is Henry M. Jackson Foundation for the Advancement of Military Medicine, Rockville, MD.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
In FY04, initiated a multi-year Phase 3 clinical trial in Thailand to determine the effectiveness of a prime-boost strategy (HIV Vaccine (HIVV)) of vaccination against the clade E virus strain of HIV. In FY05, FY06, FY07, continue the extensive Phase 3 field trial of the HIVV in Thailand. MS C decision expected to be in FY 07.	3008	3567	4201	4541
Small Business Innovative Research/Small Business Technology Transfer Programs	90	0	0	0
Totals	3098	3567	4201	4541

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Test and evaluate commercially developed vaccine candidates in government-managed trials.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological
Defense Equipm

PROJECT
812

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Product Development	Cooperative Agreement	Henry M. Jackson Foundation, Rockville, MD	4400	2532		2983		3223		0	13138	0
Subtotal:			4400	2532		2983		3223		0	13138	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			233	38		42		45		0	358	0
Subtotal:			233	38		42		45		0	358	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological
Defense Equipm

PROJECT
812

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test and Evaluation	Government Laboratory	Walter Reed Army Institute of Research (WRAIR), Silver Spring, MD	806	927		1092		1180		0	4005	0
Subtotal:			806	927		1092		1180		0	4005	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			165	70		84		93		0	412	0
Subtotal:			165	70		84		93		0	412	0

Project Total Cost:			5604	3567		4201		4541		0	17913	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604807A - Medical Materiel/Medical Biological
 Defense Equipm**

PROJECT
812

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) MS C													HIV Vaccine ▲																			

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipm	PROJECT 812
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
HIV Vaccine (MS C)				4Q				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipm	PROJECT 832
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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
832 COMBAT MEDICAL MATL ED	5467	4260	824	3714	5386	15374	14984	5800	0	65190

A. Mission Description and Budget Item Justification: This project funds technical development of candidate medical products for the advancement of combat casualty care, especially far forward on the battlefield with first responders, combat lifesavers, and field medics. This primarily funds Phase 3 human clinical trials or mechanical engineering evaluations for efficacy of devices or biologics unique to military operational requirements. This work is frequently completed through a joint laboratory and contractor team with the contractor obtaining ultimate U.S. Food and Drug Administration (FDA) licensure. These products (enhanced location and diagnostic devices of patients and more potent resuscitative biologics) will decrease mortality rates and increase soldiers' morale and willingness to place themselves in danger. Additionally, several products (Dental Field Treatment and Operating System (DEFTOS), Ventilated Assist Device, Non-Contact Respiration Monitor, One-Handed Tourniquet, Oxygen Generator, Cartledge Infuser, Hemostatic Dressing, and Thawed Blood Processing System) will reduce medical organizational sustainment footprint through smaller weight and cube or equipment independence from supporting materiel. Priority is given to those products that provide the greatest clinical benefit balanced with the technical and financial risks.

Major contractors/intra-governmental agencies include: Cambridge Consultants Corporation, IGR Enterprises, Army Medical Department Board Test Center, Smission-Cartledge Biomedical, and SeQual Technologies, Inc.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Hemostatic Dressing (HD): In FY04, closed out contract with American Red Cross (ARC) due to ARC financial problems and subsequent program unaffordability. Procured HDs for additional laboratory testing. In FY05, perform analysis of alternative Fibrin technologies.	430	1051	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604807A - Medical Materiel/Medical Biological
 Defense Equipm**

PROJECT
832

Accomplishments/Planned Program (continued)

Conduct testing & milestone reviews for the following field medical treatment and treatment aid devices: (1) Dental Field Treatment & Operating System (DEFTOS): In FY04, continued user evaluation and conducted Milestone C. Placed procurement order for 131 systems. In FY05, field systems to high priority units.
 (2) Thawed Blood Processing System (TBPS): In FY04, reassessed Mission Medical Inc. program viability considering Haemonetics Corporation's progress and congressional interest. Initiated comparison testing and evaluation of two competing systems. In FY05, complete testing and evaluation. In FY06, conduct Milestone C In-Progress Review.
 (3) Ceramic Oxygen Generator (COG): In FY04, developed low power consumption Oxygen Generator cells and designed portable oxygen generators. In FY05, conduct milestone A review and fabricate first portable Oxygen Generator prototype. In FY06, conduct user and technical testing and conduct milestone B review. In FY07, develop the engineering pre-production prototype and obtain FDA clearance.
 (4) Rotary Valve Pressure Swing Adsorption Oxygen Generator (RVPSAOG): In FY04, design feed air compressor and develop prototype lightweight portable oxygen generator. In FY05, reduce oxygen generator weight and size and conduct milestone B in-progress review. In FY06, develop engineering pre-production prototype and conduct technical and user testing and evaluation as well as conduct milestone C in-progress review. In FY07, initiate low rate production.
 (5) Ventilatory Assist Device (VAD): In FY04, integrated ventilator drive unit with the anesthesia vaporizer. Produced user-training materials. In FY05, conduct technical and user testing, make any required modifications, and hold milestone C in-progress review. (6) Cartledge Infuser (CI): In FY04, developed initial prototype system. In FY05, conduct technical/user testing, finalize design, develop automated manufacturing process, and obtain FDA clearance of infuser system an

FY 2004	FY 2005	FY 2006	FY 2007
4881	3209	824	3714
156	0	0	0
5467	4260	824	3714

Small Business Innovative Research/Small Business Technology Transfer Programs

Totals

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Evaluate commercially developed materiel in government-managed trials.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological
Defense Equipm

PROJECT
832

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Rotary Valve Pressure Swing Adsorption oxygen Generator		Sequal Technologies, Inc., San Diego, CA	482	1778		0		0		0	2260	0
b . Cartledge Infuser		Smisson-Cartledge Biomedical L.L.C., Macon, GA	3110	0		0		0		0	3110	0
Subtotal:			3592	1778		0		0		0	5370	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Not Applicable			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological
Defense Equipm

PROJECT
832

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Not Applicable			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			11753	2482		824		3714		Continue	18773	0
Subtotal:			11753	2482		824		3714		Continue	18773	0

Project Total Cost:			15345	4260		824		3714		Continue	24143	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604807A - Medical Materiel/Medical Biological
 Defense Equipm**

PROJECT
832

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) FRP&D Dental Field Operating System ▲1																																
(2) MS C Thawd Blood Processing System ▲2																																
(3) MS B, (4) MS C Ceramic Oxygen Generator System ▲3																																
(5) MS C Rotary Valve Pressure Swing Oxy Gen ▲5																																
(6) MS C Ventilatory Assist Device ▲6																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological
Defense Equipm

PROJECT
832

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Dental Field Treatment and Operating System (FRPND)	4Q							
Thawed Blood Processing System (MS C)			4Q					
Ceramic Oxygen Generator Systems (MS B); (MS C)			4Q		1Q			
Rotary Valve Pressure Swing Oxygen (MS B); (MS C)			3Q					
Ventilatory Assist Device (MS C)		3Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological
Defense Equipm

PROJECT
834

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
834 SOLDIER SYS PROT-ED	5693	1011	0	3030	1887	1844	1780	1778	0	17791

A. Mission Description and Budget Item Justification: This project supports system development and demonstration of preventive medicine materials to include devices, medicines in order to provide protection, sustainment, and enhancement of the physical and psychological capabilities of soldiers engaged in combat operations across environmental conditions. The focus is on reduction of personnel losses due to preventable disease and non-battle injuries through development of environmental and physiological performance monitors and other preventive medicine countermeasures.

A major contractor is Allermed Laboratories, Inc., San Diego, CA.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
In FY05, fund the Air Worthiness Certification of the Special Medical Emergency Evacuation Device (SMEED), Life Support for Trauma and Transport (LSTAT) Next Generation, and the Rotary Valve Pressure Swing Adsorption Oxygen Generator (RVPSAOG). Leishmania Skin Test (LST): In FY04, initiated termination phase of a contract to produce and test a Leishmania Skin Test. In FY05, conduct a Critical Design Review to terminate or transition the LST to a commercial pharmaceutical company. Hepatitis E Vaccine: In FY04, fielded trial of the Hepatitis E Vaccine was completed in Nepal. In FY05, complete analysis of data from the Hepatitis E Vaccine trial and convene a Critical Design Review to transition vaccine to pivotal clinical testing. In FY06, initiate a pivotal field trial to support licensure of the Hepatitis E Vaccine. In FY 07, continue Hepatitis E Vaccine field trial.	1144	1011	0	3030
Congressional Adds in support of Chem-Bio Protection	4384	0	0	0
Small Business Innovative Research/Small Business Technology Transfer Programs	165	0	0	0
Totals	5693	1011	0	3030

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

**0604807A - Medical Materiel/Medical Biological
Defense Equipm**

PROJECT

834

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Test and evaluate in-house and commercially developed vaccine candidates in government-managed trials to meet FDA requirements.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological
Defense Equipm

PROJECT
834

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			1834	484		0		1457		0	3775	0
b . Congressional Add in Support of Chem-Bio Protection			4550	0		0		0		0	4550	0
Subtotal:			6384	484		0		1457		0	8325	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			42	32		0		89		0	163	0
Subtotal:			42	32		0		89		0	163	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological
Defense Equipm

PROJECT
834

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			241	239		0		545		0	1025	0
Subtotal:			241	239		0		545		0	1025	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			645	256		0		939		0	1840	0
Subtotal:			645	256		0		939		0	1840	0

Project Total Cost:			7312	1011		0		3030		0	11353	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological
Defense Equipm

PROJECT
849

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
849 INFEC DIS DRUG/VACC ED	3647	3392	602	3133	4063	14059	13896	3992	0	50053

A. Mission Description and Budget Item Justification: This project funds technical development of candidate medical countermeasures for infectious diseases that occur within militarily relevant areas of the world. These products fall within three major areas: vaccines, drugs, and diagnostic kits. The funds support Phase 3 human clinical trials for large-scale efficacy testing, long-term animal studies, and related manufacturing tests. This work, which is jointly performed by military laboratories and civilian contracted pharmaceutical firms, is directed toward the prevention of disease, early diagnosis if contracted, and speeding recovery once diagnosed. These trials are required to meet U.S. Food and Drug Administration (FDA) regulatory approval guidance, a mandatory obligation for all military products placed into the hands of medical providers or service members. Priority is based upon four major factors: the extent of the disease within the Combatant Command's theater of operations, the clinical severity of the disease, the technical maturity of the proposed solution, and the affordability of the solution (development and production). Consequently, malaria, dysentery, hepatitis, and dengue diseases (which are found in Central Command, European Command, Southern Command, and Pacific Command areas) rise to the top of the requirement list.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological
Defense Equipm

PROJECT
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Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
<p>Clinical trials, developmental testing, and appropriate reviews of malarial/antimalarial vaccines, drugs, and diagnostics: In FY04, continued the FDA-mandated Phase 1 safety trial of the Antimalarial Drug, Tafenoquine and opened an additional OCONUS site to accelerate the study; Initiated planning for studies to support licensure of Tafenoquine. In FY05, initiate two Phase 3 studies (Kenya and Indonesia planned) to evaluate effectiveness of tafenoquine; conduct a clinical design review for the RTS,S/improved adjuvant (P. falciparum); conduct a Critical Design Review to validate plan for Tafenoquine licensure and initiate planned studies. In FY06, continue Tafenoquine studies and initiate development of a licensure package for submission to the FDA. In FY07, submit licensure package to the FDA and conduct a Milestone C to transition Tafenoquine to Full-Rate Production and Deployment, providing the military with a safe, effective antimalarial drug to replace mefloquine.</p>	1986	3021	519	3133
<p>Prepared for conducting clinical studies, trials, and appropriate reviews of grouped vaccines, drugs, and diagnostics (Leishmaniasis, Paromomycin, Tick-borne Encephalitis Vaccine (TBEV), and Hepatitis E), which must meet stringent Environmental Protection Agency (EPA) requirements. In FY04, initiated non-clinical testing of the new camouflage face paint formulation to meet Environmental Protection Agency requirements; initiated a solicitation for contract to test and develop paromomycin topical antileishmanial cream. In FY05, complete non-clinical testing of the Camouflage Face Paint formulation and initiate planning for a Phase 1 safety study of the Combined Camouflage Face Paint/Insect Repellent (CCFP). In collaboration with industry partner, produce new formulation of the Paromomycin/ Gentamicin Topical Antileishmanial Cream and initiate clinical testing. In FY06, complete all testing required for fielding of the of the CCFP; continue phase 2/3 field testing of the Topical Antileishmanial Cream. In FY07, conduct a Milestone C and transition the CCFP to Full-Rate Production and Deployment. Conduct a Critical Design Review of the Topical Antileishmanial Cream to initiate development of licensure package for the FDA, leading to fielding of a new, far-forward treatment for cutaneous leishmaniasis.</p>	1587	371	83	0
<p>Small Business Innovative Research/Small Business Technology Transfer Programs</p>	74	0	0	0
<p>Totals</p>	3647	3392	602	3133

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

**0604807A - Medical Materiel/Medical Biological
Defense Equipm**

PROJECT

849

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Test and evaluate in-house and commercially developed products in government-managed trials to meet FDA requirements and Environmental Protection Agency registration.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological
Defense Equipm

PROJECT
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			5791	1249		205		1063		Continue	8308	Continue
Subtotal:			5791	1249		205		1063		Continue	8308	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			440	70		71		63		Continue	644	Continue
Subtotal:			440	70		71		63		Continue	644	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological
Defense Equipm

PROJECT
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			8839	1506		183		1464		Continue	11992	Continue
Subtotal:			8839	1506		183		1464		Continue	11992	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			2399	567		143		543		Continue	3652	Continue
Subtotal:			2399	567		143		543		Continue	3652	Continue

Project Total Cost:			17469	3392		602		3133		Continue	24596	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604807A - Medical Materiel/Medical Biological
 Defense Equipm**

PROJECT
849

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) PBD Leishmania Skin Test				▲1																												
(2) MS B/C Promomycin/Gentamicin				▲2																												
(3) CDR RTS,S Malaria Vaccine				▲3																												
(4) MS C Malaria Rapid Diagnostic Device								▲4																								
(5) CDR Dengue Tetravalent Vaccine								▲5																								
(6) MS C Tafenoquine Antimalarial Drug												▲6																				
(7) Down Select Complete								▲7																								

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological
Defense Equipm

PROJECT
849

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Paromomycin/Gentamicin (Transition to Commercial Developer)	3-4Q							
RTS,S/improved adjuvant (P. falciparum) malaria vaccine (Critical Design Review)		1Q						
Malaria Rapid Diagnostic Device (MS C)		3Q						
Dengue tetravalent vaccine (Critical Design Review)		3Q						
Tafenoquine antimalarial drug (MS C)			3Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	113663	57116	80560	80750	102447	100156	75009	41106	0	754976
016 CLOSE COMBAT CAPABILITIES ENG DEV	9144	36049	41246	53238	56001	35652	19580	20302	0	308089
415 MINE NEUTRAL/DETECTION	32508	14123	34327	27512	46446	64504	55429	20804	0	348181
434 ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)	41961	6944	4987	0	0	0	0	0	0	60479
443 APL-A (MIXED SYSTEMS)	30050	0	0	0	0	0	0	0	0	38227

A. Mission Description and Budget Item Justification: This program element (PE) provides for System Development and Demonstration of mine, countermine, demolition, non-lethal, and shoulder launched munitions/systems. The PE also provides for development of grenades, munition simulators, and pyrotechnic devices/systems. This PE implements the National Landmine Policy to develop alternative non-self-destructing anti-vehicle and anti-personnel landmine systems. The Close Combat Capabilities Engineering Development, provides for increased tactical effectiveness and responsiveness of landmines, with development of upgrades for the Volcano Dispenser, as well as the development of the Intelligent Munition System (IMS), an Future Combat System Core system. The program also provides for a variety of demolition efforts to include development of Flexible Linear Shaped Charge, Remote Shock Tube Initiator, Magnetic Inductive Urban OPS Structure Remote Initiator, Insensitive Initiator, and Advanced Cratering. Project Mine Neutralization/Detection Engineering Development provides for development of the Airborne Standoff Minefield Detection System (ASTAMIDS), Ground Standoff Mine Detection System (GSTAMIDS), Handheld Standoff Mine Detection System (HSTAMIDS), and Explosive Standoff Minefield Clearer (ESMC). Anti-Personnel Landmine Alternatives provides for development of the Spider alternative systems for Non Self-Destruct (NSD) Anti-Personnel Landmines (APLs).

IMS is a Future Combat System Core and a Landmine alternative program; ASTAMIDS and GSTAMIDS are Future Combat System Complementary Programs.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	51045	71230	82360
Current Budget (FY 2006/2007 PB)	57116	80560	80750
Total Adjustments	6071	9330	-1610
Net of Program/Database Changes			
Congressional Program Reductions	-857		
Congressional Rescissions			
Congressional Increases	8500		
Reprogrammings			
SBIR/STTR Transfer	-1572		
Adjustments to Budget Years		9330	-1610

FY 2005 Adjustment: Congressional increase for MI-RAMS (\$8.5M).

FY 2006 Adjustments:

+\$6.4M D415 - Additional funding provided for the ASTAMIDS Program to achieve critical requirements for an Airborne Stand Off Minefield Detection (ASTAMIDS) capability. ASTAMIDS will be deployed on a UAV for fieldings to support the Modular Brigade Combat Team (BCT) and Future Force UA's.

+\$5.0M D434 funding for APL-A (Spider) system and evaluation. Transfer from Production SSN (E91700).

-\$2.1M - Funds realigned to other higher priority requirements.

FY 2007 Adjustments:

-\$1.6M Realigned for higher priority requirements.

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COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
016 CLOSE COMBAT CAPABILITIES ENG DEV	9144	36049	41246	53238	56001	35652	19580	20302	0	308089

A. Mission Description and Budget Item Justification: The Intelligent Munitions System is an integrated system of effects (lethal anti-vehicle, anti-personnel, non-lethal, demolitions), software, sensors/seekers and communications that may be emplaced by multiple means and is capable of unattended employment for the detection, classification, tracking and engagement of selected targets in accordance with the commander's intent. IMS is one of the 18 Core systems that make up the Future Combat Systems Family of Systems. It shall be fielded as part of the Future Combat System Spiral 1. With its self-destructing/self-deactivating capability it is the materiel solution that will comply with the National Landmine Policy to replace all non-self-destructing anti-vehicle mines from the U.S. inventory. IMS will enhance the effectiveness for both the current and future force in the areas of force protection and battlespace shaping.

This project also provides for Systems Development and Demonstration of mine, demolition, non-lethal, and shoulder launched munitions/systems. The PE also provides for development of grenades, munition simulators, and pyrotechnic devices/systems. It also, includes the upgrade to the Volcano Dispenser Control Unit (DCU) and the Volcano modularization in support of the Stryker Brigade Combat Team (SBCT) and a variety of demolition devices to include: Flexible Linear Shaped Charge, Remote Shock Tube Initiator, Magnetic Inductive Remote Activation Munition System (MI-RAMS), Special Forces Demolition Kit for Urban OPS, Structure Remote Initiator, Insensitive Initiator, and Advanced Cratering.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
FY05: Continue IMS concept development.	0	18584	0	0
FY05-FY07: Continue Integrate IMS into FCS	0	800	1400	1700
FY05-FY07: Continue to conduct IMS modeling and simulation	0	3000	4000	5500
FY05: Complete IMS concept Prototype Assessment Test	0	6725	0	0
FY06-FY07: Continue to Conduct IMS System Development	0	0	35846	35038
FY07: Continue to Conduct IMS contractor System Demonstration testing.	0	0	0	11000
FY04: Completed ocumentation design/development of Volcano DCU upgrades.	2344	0	0	0
FY05: Developed Magneto Inductive Remote Activation Munition System (MI-RAMS) Shock Tube Initiator.	6800	6940	0	0
Totals	9144	36049	41246	53238

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
643619 / D005 Close Combat Capabilities - Advanced Development (IMS)	26724	0	0	0	0	0	0	0	Continuing	Continuing
G39100, Dispenser, Mine M139	5192	0	0	0	0	0	0	0	Continuing	Continuing
E96901, Intelligent Munition System	0	0	0	26550	83610	101581	214850	249736	Continuing	Continuing

C. Acquisition Strategy:IMS - Competitively awarded two cost plus incentive fee, incrementally funded Technology Development (TD) phase contracts. Will downselect to one of the TD phase contractors for System Development and Demonstration (SDD) phase and award a cost plus incentive fee, incrementally funded contract for SDD and low rate initial production. The IMS is being developed as an evolutionary acquisition program that will field a capability that meets National Landmine Policy and will Spiral into meeting the FCS Full Operational Capability.

MI-RAMS - Awarded a sole source contract to Magneto Inductive Systems LTD for SDD.
 MI - Shock Tube Initiator - Award a Sole Source contract to Raytheon Technical Systems of Indianapolis IN.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Volcano DCU Upgrade- SDD Contract	C-CPFF	Alliant Tech Systems, Plymouth MN	7275	0		0		0		0	7275	6248
b . Volcano Light-SDD Contract	C-CPFF	Alliant Tech Systems, Plymouth MN	900	0		0		0		0	900	900
c . Magneto Inductive Shock Tube Initiator	SS - CPIF	Raytheon Technical Services, Indianapolis IN	0	0		0		0		Continue	0	800
d . Magneto Inductive - RAMS	C-CPIF	Coastal System Station, Panama City FL	7919	3647		0		0		Continue	11566	7783
e . Wall Breacher	C-CPIF	Ens Bickford, Simsbury CN	400	0		0		0		0	400	400
f . Urban OPS	FP	Amenn and Whitney (GSA)	404	0		0		0		0	404	404
g . IMS Technology development	C-CPIF	GDAIS, Bloomington, MN	9000	10500	1Q	0		0		Continue	19500	19500
h . IMS Technology development	C-CPIF	Textron System Corp., Wilmington, MA	9000	10500	1Q	0		0		Continue	19500	19500
i . IMS System Development and Demonstration (SDD)	C-CPIF	TBS	0	0		28942	1Q	38732	1Q	Continue	67674	69000

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			34898	24647		28942		38732		Continue	127219	124535

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering Support Volcano Light	MIPR	ARDEC, Picatinny Arsenal, NJ	267	0		0		0		0	267	0
b . Engineering Support Volcano DCU	MIPR	ARDEC, Picatinny Arsenal, NJ	1442	0		0		0		0	1442	0
c . Volcano DCU Task Order	MIPR	Various	277	0		0		0		0	277	0
d . Magneto Induction - RAMS	MIPR	Various	4115	2375	2Q	0		0		Continue	6490	0
e . Urban OPS	MIPR	ARDEC, Picatinny Arsenal, NJ	530	0		0		0		0	530	0
f . IMS Engineering Support	MIPR	ARDEC Picatinny Arsenal, NJ	2000	2334	1Q	3200	1Q	3400	1Q	Continue	10934	0
g . IMS Engineering Support	MIPR	CECOM CERDEC, Fort Monmouth, NJ	600	300	1Q	600	1Q	600	1Q	Continue	2100	0

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5 - System Development and Demonstration

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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
h . IMS Engineering Support	MIPR	CECOM NVESD, Fort Belvoir, NJ	0	400	1Q	400	1Q	400	1Q	Continue	1200	0
i . IMS Engineering Support	MIPR	Various	300	935	1Q	1430	1Q	1120	1Q	Continue	3785	0
Subtotal:			9531	6344		5630		5520		Continue	27025	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Volcano- DCU	MIPR	ATEC, APG, MD	674	0		0		0		0	674	0
b . Magneto Induction - RAMS	MIPR	DTC, Aberdeen, MD	30	0		0		0		Continue	30	0
c . Urban OPS	MIPR	ATEC, APG, MD	130	0		0		0		0	130	0
d . IMS	MIPR	AMSAA, APG, MD	310	225	1Q	225	1Q	225	1Q	Continue	985	0
e . IMS	MIPR	ATEC, APG, MD	0	200	1Q	400	1Q	540	1Q	Continue	1140	0
f . IMS	MIPR	DTC,APG,MD	0	1000	1Q	1700	1Q	3100	1Q	Continue	5800	0
g . IMS	MIPR	CECOM, Fort Belvoir, VA	0	400	1Q	400	1Q	400	1Q	Continue	1200	0

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III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			1144	1825		2725		4265		Continue	9959	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Volcano Light	In-House	PM CCS, Picatinny Arsenal, NJ	101	0		0		0		0	101	0
b . Volcano DCU	In-House	PM CCS, Picatinny Arsenal, NJ	461	0		0		0		0	461	0
c . Magneto Induction - RAMS	In-House	PM CCS, Picatinny Arsenal, NJ	356	918	1-4Q	0		0		Continue	1274	0
d . Wall Breacher	In-House	PM CCS, Picatinny Arsenal, NJ	30	0		0		0		0	30	0
e . IMS	In-House	PM CCS, Picatinny Arsenal, NJ	896	2095	1-4Q	3549	1Q	4321	1Q	Continue	10861	0
f . IMS	T.O. Contract	Robbins-Goia, Alexandria, VA	0	220	1Q	400	1Q	400	1Q	Continue	1020	1020

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IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			1844	3233		3949		4721		Continue	13747	1020

Project Total Cost:			47417	36049		41246		53238		Continue	177950	125555
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Schedule Profile (R4 Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11																																							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																																				
(1) Milestones & Phase Incr 1																																																																				
SRR																																																																				
SFR																																																																				
PDR																																																																				
CDR																																																																				
(2) MS C																																																																				
(3) IOC																																																																				
Test & Evaluation																																																																				
FRP DR																																																																				

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Magneto Inductive Remote Activation Munition System (MI-RAMS) development	1-4Q							
MI-RAMS Milestone B								
MI-RAMS Preliminary Design Review	4Q							
Rapid Wall Breaching Kit - MS B								
SDK Urban OPS Supplement - MS B	2Q							
IMS Prototype Assessment Test		3Q						
IMS Milestone B		4Q						
IMS SDD Contract Award			1Q					
IMS SDD System Requirements Review			1Q					
IMS System Functional Review			2Q					
IMS Preliminary Design Review			3Q					
IMS Design Readiness Review				2Q				
IMS Milestone C					3Q			
IMS Initial Operational Capability						4Q		
IOT&E							1Q	
Full Rate Production Decision							2Q	

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev **PROJECT 415**

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
415 MINE NEUTRAL/DETECTION	32508	14123	34327	27512	46446	64504	55429	20804	0	348181

A. Mission Description and Budget Item Justification: This project provides System Development and Demonstration (SDD) for the Airborne Standoff Minefield Detection System (ASTAMIDS). The ASTAMIDS uses Multi-Spectral Electro-Optic/Infrared (EO/IR) and visible/Near IR sensor mounted on a Future Combat System Unit of Action Unmanned Aerial Vehicle to detect and locate minefields and obstacles that are impediments to maneuver forces. ASTAMIDS can be used in tactical operations day and night, to detect surface emplaced and recently buried minefields and obstacles. Handheld Stand-off Mine Detection System (HSTAMIDS) is a handheld multi-sensor detector that combines an advanced metal detector with a special purpose Ground Penetrating Radar (GPR) coupled to an advanced signal processor and software algorithms. It provides for enhanced detection capabilities against non-metallic mines and reduces incidences of false alarms in highly cluttered metal environments.

Ground Standoff Mine Detection System Future Combat Systems (GSTAMIDS FCS) The advent of the Army's Future Force Transformation, the GSTAMIDS Program has been restructured to meet the countermines requirements for FCS. The April 2003, Joint Requirements Oversight Council (JROC) approved the FCS Operational Requirements Document (ORD) which includes countermines requirements. The GSTAMIDS FCS will provide the Unit of Action (UA) a capability that can be used for mine detection, mine and temporary lane marking, precision mine neutralization and interfaces with FCS host platform(s) and Command, Control, Communications, and Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) reporting during on-route countermines operations.

Explosive Standoff Minefield Clearer (Mongoose) is a rocket deployed array of shaped charge munitions, launched across minefields and command detonated, to provide a high confidence cleared lane for the passage of mounted troops. Mongoose will defeat all defined threat mines from a stand-off position including mines with countermeasures to current countermines systems.

ASTAMIDS and GSTAMIDS have been identified in Spirals 2 & 3 respectively as part of the Army's initiative to spiral future capabilities to the current force.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY04: Conducted Source Selection and award GSTAMIDS FCS System Development and Demonstration Contract.	1188	0	0	0
FY05: Initiate GSTAMIDS FCS System Development and Demonstration (SDD) contract.	16886	0	0	0
FY05: Initiate GSTAMIDS FCS preliminary design.	0	12623	0	0

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Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
FY06: Initiate GSTAMIDS FCS Final Design and Systems Engineering	0	0	14751	0
FY07: Initiate GSTAMIDS FCS Prototype development Integrated Qualification Testing & Neutralization development.	0	0	0	13075
FY06: ASTAMIDS - Complete Spiral 1 Prototype Integration	0	0	4016	0
FY06: Initiate ASTAMIDS - Contractor Qual, Functional & Air Testing	0	0	8000	5000
FY06: Initiate ASTAMIDS - Spiral 2 prototype fabrication	0	0	7560	3437
FY07: ASTAMIDS – Initiate Spiral 3 prototype fabrication	0	0	0	6000
FY04: Validated ESMC BCT design and validate insensitive munition and rocket	4000	0	0	0
FY04: Completed ESMC (Mongoose) BCT preliminary design.	1000	0	0	0
FY04-FY05: Continue to Fabricate ESMC prototypes for productions qualification testing.	6000	1500	0	0
FY04: Completed contractor testing of ESMC.	2000	0	0	0
FY04: Developed ESMC Manufacturing Processes.	1434	0	0	0
Totals	32508	14123	34327	27512

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PE 0603619A, Project 606, Countermines/Barrier Advanced Dev	9341	15843	0	8311	39325	43773	18699	4142	Continuing	Continuing
R68200, HSTAMIDS	2669	6879	7084	7253	8368	7639	6802	6535	Continuing	Continuing
OPA 3, R68102, GSTAMIDS FCS	0	0	0	7551	22041	21386	20662	274446	Continuing	Continuing
OPA 3, R68105 ESMC	0	1993	2962	607	0	0	0	0	0	5562
Ammo, E81400 ESMC	0	0	0	5000	20500	28700	0	0	0	54200
OPA 3, S11500 ASTAMIDS	0	0	0	0	11658	12519	12310	12563	Continuing	Continuing

C. Acquisition Strategy: The Explosive Standoff Minefield Detection Clearer (ESMC) competitively-selected CTD contractor, was awarded a sole source System Development & Demonstration (SDD) contract upon completion of CTD phase and MDA approval.

The ASTAMIDS competitively selected Prime System contractor was awarded Cost Plus Incentive Fee (CPIF) System Development and Demonstration (SDD) after MDA Milestone B approval. A Sole source production contract with multiple options is anticipated.

GSTAMIDS FCS entered the SDD Phase in 3QFY04 with MDA approval and competitively selected SDD Cost Plus Fixed Fee (CPFF) contract.

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BUDGET ACTIVITY
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . GSTAMIDS Block 1	C-CPFF	Quantum Magnetics San Diego, CA	1725	0		0		0		0	1725	1725
b . GSTAMIDS FCS	C-CPFF	BAE Systems, Austin, TX	8972	0		0		0		0	8972	75
c . GSTAMIDS FCS	C-CPFF	BAE Systems, Austin, TX	0	8524	2Q	11732	1Q	10056	1Q	Continue	30312	62496
d . GSTAMIDS Block 0	C-CPFF	EG&G Systems Inc., Albuquerque, NM	16406	0		0		0		0	16406	16406
e . HSTAMIDS	C-CPIF	CY Terra Corporation, Orlando, FL	15776	0		0		0		0	15776	15776
f . ESMC	SS-CPIF	BAE Systems, Austin, TX	58057	756		0		0		Continue	58813	47983
g . AROC II	Various		1850	0		0		0		0	1850	1850
h . ASTAMIDS	C-CPIF	Northrup Grumman	6000	0		14601	1Q	9702	1Q	Continue	30303	24303
Subtotal:			108786	9280		26333		19758		Continue	164157	170614

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Eng. support GSTAMIDS Blk 0	MIPR	NVESD/ CECOM, Ft Belvoir, VA	6828	0		0		0		0	6828	0
b . Eng support GSTAMIDS Blk 0	MIPR	Various OGAs	6247	0		0		0		0	6247	0
c . Eng Support GSTAMIDS Block 0	Various	Various Contractors	7853	0		0		0		0	7853	0
d . GSTAMIDS Blk I/FCS	MIPR	Various OGAs	812	625	1Q	700	1Q	700	1Q	Continue	2837	0
e . GSTAMIDS Support Blk I/FCS	MIPR	NVESD/CECOM, Ft Belvoir, VA	2716	1533	1Q	800	1Q	800		Continue	5849	0
f . Support GSTAMIDS Blk 1/FCS	Various	Various Contractors	1179	375	1Q	400	1Q	400	1Q	Continue	2354	0
g . Eng Support HSTAMIDS	MIPR	NVESD/CECOM, Ft Belvoir, VA	4533	0		0		0		0	4533	0
h . Support HSTAMIDS	Various	Various	4367	0		0		0		0	4367	0
i . ESMC (Mongoose)	MIPR	NVESD/CECOM, Ft Belvoir, VA	2304	100	1Q	0		0		Continue	2404	0
j . ESMC (Mongoose)	Various	Various	7153	225	1Q	0		0		Continue	7378	0

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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . ASTAMIDS	MIPR	NVESD/CECOM, Ft Belvoir, VA	0	0		1850	1Q	1850	1Q	Continue	3700	0
I . ASTAMIDS	Various	Various	0	0		1400	1Q	1400	1Q	Continue	2800	0
Subtotal:			43992	2858		5150		5150		Continue	57150	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test support GSTAMIDS Blk 0	MIPR	ATEC, Alexandria, VA	4369	0		0		0		0	4369	0
b . Test support HSTAMIDS	MIPR	ATEC, Alexandria, VA	2859	0		0		0		0	2859	0
c . Test Support ESMC	MIPR	ATEC, Alexandria, VA	2371	122		0		0		Continue	2493	0
d . Test support GSTAMIDS Blk 1/FCS	MIPR	ATEC, Alexandria, VA	40	0	2Q	350	2Q	350	2Q	Continue	740	0
e . ASTAMIDS	MIPR	ATEC, Alexandria, VA	0	0		515	2Q	515	2Q	Continue	1030	0

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III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			9639	122		865		865		Continue	11491	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program management	In-House	PM-CCS, Picatinny Arsenal, NJ	5043	1073	1-4Q	819	1-4Q	719		Continue	7654	0
b . Program management Contractor support	Various	Various	6115	790	1-4Q	1160	1-4Q	1020	1-4Q	Continue	9085	0
Subtotal:			11158	1863		1979		1739		Continue	16739	0

Project Total Cost:			173575	14123		34327		27512		Continue	249537	170614
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
415

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
GSTAMIDS (FCS)																																
(1) MS B																																
SDD																																
(2) LRIP Decision																																
Phase III																					2 IPD											
ASTAMIDS																																
System Integration																																
System Demonstration																																
(3) MS C																																
Phase III																									3 MSC							

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
415

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
GSTAMIDS Block 0 MS C	2Q							
GSTAMIDS FCS MS B	3Q							
GSTAMIDS FCS MS C						2Q		
HSTAMIDS MS C	1Q							
ESMC (BCT) MS C		2Q						
ASTAMIDS FCS C Complete SDD					2Q			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev **PROJECT 434**

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
434 ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)	41961	6944	4987	0	0	0	0	0	0	60479

A. Mission Description and Budget Item Justification: The Spider system's mission is to develop alternative systems for current Non Self-Destruct (NSD) Anti-Personnel Landmines (APL's). This mission was articulated in the Presidential Decision Directives (PDD's) 48, 54 and 64 and reiterated in the New Landmine Policy announced by the State Department on 27 Feb 04.

The Spider is a hand emplaced, remotely controlled, anti-personnel munition system. The system is made up of 4 subsystems: Man-in-the-Loop (the human operator), Remote Control Station (the system command and control station), Repeater (a communication link to the munitions that provides extended range), Munition Control Units (delivers anti-personnel effects). Missions include force protection, shaping the battlefield, provide warning, delay enemy forces and attrit enemy forces. The Spider is designed to mitigate the indiscriminate engagement of the lethal mechanism. A Soldier/Marine makes a conscious decision to engage a target with the lethal mechanism. The envisioned obstacle can be either a permanent obstacle, such as the Korean Barrier System (KBS), or a temporary obstacle intended to be reused in other locations, such as forward airbases.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Contractor team design/development for SD&D Phase.	32718	1356	1532	0
Provide general engineering support, program management and risk reduction efforts for SD&D.	7599	2949	1125	0
Perform modeling and simulation.	0	83	0	0
Government test and evaluation facility and facility support activities.	1644	2556	2330	0
Totals	41961	6944	4987	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
434

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PAA E91700 - Anti-Personnel Landmine Alternatives	0	15163	27876	112259	113871	118522	0	0	Continuing	Continuing

C. Acquisition Strategy: USD(AT&L) approved the NSD-A plan to have Alliant Tech Systems and Textron Systems Corporation form a joint venture for the System Development & Demonstration (SDD) efforts of this program. A competitive SDD contract was awarded in September 2002. The SDD phase is a 39-month development effort culminating with Milestone C scheduled for December 2005. The first production unit is scheduled for June 2007 with IOC in 2008. The Spider program is now in the 28th month of its SDD phase.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
434

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . NSD-A SDD	C-CPIF	Alliant Tech Systems, Plymouth, MN/TEXTRON, Wilmington, MA	70975	1356	1Q	1532	1Q	0		Continue	73863	53229
Subtotal:			70975	1356		1532		0		Continue	73863	53229

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Eng support NSD-A	MIPR	TACOM/ARDEC, Picatinny Arsenal, NJ	9785	1200	2Q	400	2Q	0		Continue	11385	0
b . Eng support NSD-A	MIPR	Various	4101	618	2Q	250	2Q	0		Continue	4969	0
c . Eng Support	Various	BRTRC, CORBETT, MITRE, Various	1426	882	2Q	250	2Q	0		Continue	2558	0
Subtotal:			15312	2700		900		0		Continue	18912	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
434

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test and Evaluation	MIPR	Army Evaluation Center, MD, FT Benning, GA, YUMA, AZ	4149	2556	2Q	2330	2Q	0		Continue	9035	0
Subtotal:			4149	2556		2330		0		Continue	9035	0

Remarks: Not Applicable

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Mgmt NSD-A	In-House	PM-CCS, Picatinny Arsenal, NJ	2061	332	2Q	225	2Q	0		Continue	2618	0
Subtotal:			2061	332		225		0		Continue	2618	0

Project Total Cost:			92497	6944		4987		0		Continue	104428	53229
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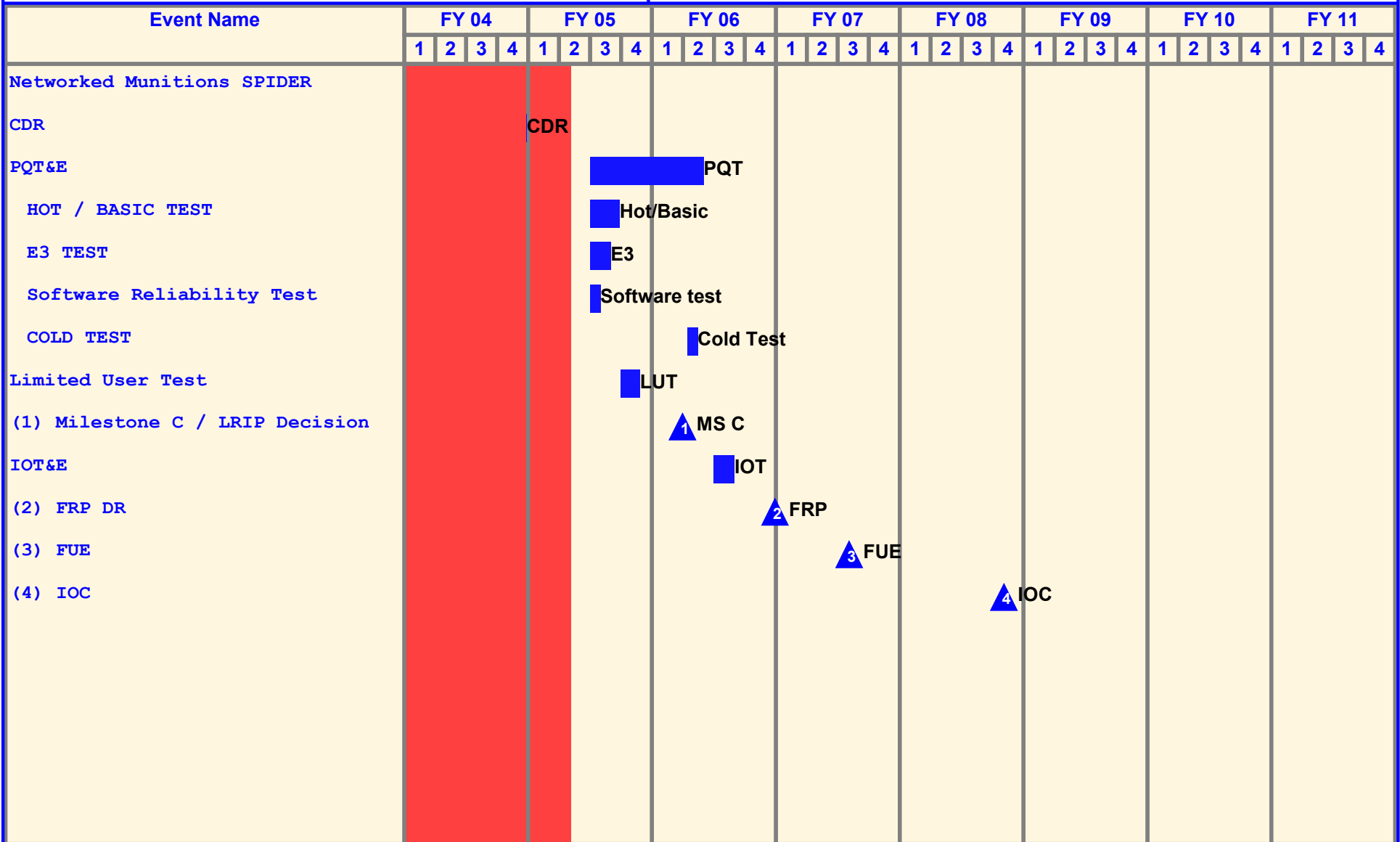
Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
434



Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
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<u>Schedule Detail</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
Critical Design Review	4Q	1Q						
Production Qualification Test (PQT) , (a) Hot/Basic		3Q						
Production Qualification Test (PQT) , (b) E3		3Q						
Production Qualification Test (PQT) , (c) S/W Rel		3Q						
Production Qualification Test (PQT) , (d) Cold			2Q					
Limited User Test		4Q						
MS C/LRIP Decision			1Q					
IOT			3Q					
FRP Decision			4Q					
FUE				3Q				
IOC					4Q			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604814A - Artillery Munitions - EMD				PROJECT 708		
COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
708 XM982 PROJECTILE	119433	133167	113368	99127	61887	76734	42165	1989	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project funds two programs, the Excalibur XM982 Projectile and the Spin Stabilized-Sensor Fuzed Munition (SS-SFM).

Excalibur provides improved fire support through a Precision Guided Extended Range family of munitions with greatly increased accuracy and reduced collateral damage. The Excalibur will be compatible with the M777A1 Lightweight 155mm howitzer (LW155), the Paladin howitzer, and the Future Combat System (FCS) Non-Line of Sight Cannon (NLOS-C). Excalibur will provide a 33% range increase over current Rocket Assisted Projectiles and 10 meter accuracy (Circular Error Probable) at all ranges. Excalibur is also highly resistant to GPS jamming. Excalibur is an international program, teamed with the Kingdom of Sweden (KoS), who contributes resources towards the development in accordance with an established Project Agreement.

Funding also supports compliance testing for the SS-SFM in accordance with the Joint Ballistics Memorandum of Understanding (JBMOU). SS-SFM's are advanced "fire and forget" smart artillery projectiles that can be used in all 155mm artillery systems. SS-SFM's use one or more sensors to defeat self-propelled artillery and lightly armored targets in all weather and environmental conditions.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Continue airframe tactical structure and projectile integration efforts to conduct contractor development testing.	29667	27550	23018	20666
Continue guidance unit integration, gun hardening, tactical telemetry, systems software development, and programmed maneuver flight demonstration.	39088	42021	35160	32231
Continue to execute Systems and Specialty Engineering activities, to include specification development, Cost As Independent Variable (CAIV), program metric tracking, and conduct modeling of lethality, effectiveness, and aeroballistics, and requirements analysis to incorporate a tactical telemetry system.	18847	23166	17332	16217
Continue Unitary warhead development, to include structure penetration, and fragmentation testing	9483	9330	8416	5559
Continue Platform Integration effort including design and build of prototype hardware for Enhanced Platform Integration Kit and Portable Inductive Artillery Fuze Setter (EPIAFS) and development of Advanced Field Artillery Tactical Direction System (AFATDS) integration.	8234	8474	7722	5274
Procure and test 22 structure test projectiles, 15 soft recovery Guidance system evaluation test projectiles, 32 full up system rounds, and 90 warhead test projectiles for FY05 Contractor Development Testing.	7390	13520	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604814A - Artillery Munitions - EMD	PROJECT 708
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Accomplishments/Planned Program B(continued)	FY 2004	FY 2005	FY 2006	FY 2007
Procure and test 18 structure test projectiles, 17 soft recovery Guidance system evaluation test projectiles, 136 full up system rounds for FY06 Contractor Development Testing.	0	0	21720	0
Procure and test 24 structure test projectiles, 30 soft recovery Guidance system evaluation test projectiles, 60 full up system rounds, and 36 warhead test projectiles for FY07 Contractor Development Testing.	0	0	0	19180
SS-SFM JBMOU Testing	6724	9106	0	0
Totals	119433	133167	113368	99127

B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	133297	114444	115242
Current Budget (FY 2006/2007 PB)	133167	113368	99127
Total Adjustments	-130	-1076	-16115
Net of Program/Database Changes			
Congressional Program Reductions	-2223		
Congressional Rescissions			
Congressional Increases	5900		
Reprogrammings			
SBIR/STTR Transfer	-3807		
Adjustments to Budget Years		-1076	-16115

FY 2005 Adjustments: Received \$5.9M congressional plus-up (\$3.4M for Excalibur and \$2.5M for SS-SFM BONUS program).

FY 2007 Adjustments: Funds from project 709 Advanced Field Artillery Munitions zeroed out (-\$14.8M), and funds realigned (-\$1.3M) to higher priority requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604814A - Artillery Munitions - EMD

PROJECT
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C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Procurement Ammunition Army: Proj 155mm Extended Range: XM982-U Excalibur: E80103	0	16895	25098	22548	28921	34431	64263	61431	1327443	1581030
OPA2: Enhanced Portable Inductive Fuze Setter (E-PIAFS): AD3260	0	1945	6763	7342	7458	2557	0	0	0	26065

D. Acquisition Strategy: Excalibur is a family of 155mm Precision Guided Extended Range Munitions. A competitive source selection awarded an Engineering and Manufacturing Development (E&MD) contract for the initial variant, with options for the other variant's development and all Low Rate Initial Production quantities (LRIPs). The Product Management Office (PMO) merged the Trajectory Correctable Munitions (TCM) and Excalibur programs to satisfy the common guided extended range requirement. This merger reduced program risk through incorporation of TCM technology. The PMO awarded a single, merged contract for the balance of System Development and Demonstration (SDD) with options for LRIP. In coordination with the Defense Acquisition Executive, the Army has implemented a block development process to provide for early fielding of projectiles to the Stryker Brigade Combat Team #5. The first block (Ia-1) will meet the most critical Operational Requirement Document (ORD) Block Ia Key Performance Parameter (KPP) requirements and will be ready for fielding by the fourth quarter fiscal year (FY) 2006. The second block (Ia-2) will meet all of the ORD Block Ia KPP requirements and will field to Paladin and the Future Combat System's Non-Line of Sight Cannon (NLOS-C) in addition to JLW by the fourth quarter FY08. The third block (Ib-1) will meet all of the ORD Block Ib KPP requirements and will be fielded to Paladin, NLOS-C & JLW by the fourth quarter FY11.

SS-SFM JBMOU compliance testing includes safety certification and firing table development. This strategy includes funding for compliance testing only. It does not fund procurement of projectiles for the stockpile.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604814A - Artillery Munitions - EMD

PROJECT
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Excalibur Development	C/CPAF	Raytheon Missile System, Tucson, AZ	227981	75693	1-4Q	65394	1-4Q	59636	1-4Q	Continue	Continue	439221
b . Award Fee on Excalibur Development Contract	N/A	Raytheon Missile System, Tucson, AZ	11083	14594	2-4Q	7062	2-4Q	3006	2-4Q	Continue	Continue	37287
c . TCM Merger Assessment	FP	Bofors Defence, Karlskoga, Sweden	14430	0		0		0		0	14430	14430
d . Platform Integration-Systems Contractor	CPAF	TBS	150	0	1Q	600	1Q	0		0	750	0
e . Misc Support Contracts	Various	Various	1397	200	1-2Q	200	1-2Q	200	1-2Q	Continue	Continue	0
f . Platform Integration/Fire Control	SS/CPIF	Raytheon AFATDS, Ft Wayne, IN	588	3458	1Q	1600	1-2Q	2100	1-2Q	Continue	Continue	0
g . Platform Integration Firing Tables Development	MIPR	ARDEC, Firing Tables Branch, Picatinny, NJ/Aberdeen, MD	820	441	1Q	463	1Q	116	1Q	Continue	Continue	0
h . Platform Integration	CPIF	BAE, Burlington Vt.	3739	4000	2Q	4000	1-2Q	2000	1-2Q	0	13739	0
i . SS-SFM Test Projectiles	C/FFP		5084	5731	2Q	0		0		0	10815	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604814A - Artillery Munitions - EMD

PROJECT
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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			265272	104117		79319		67058		Continue	Continue	490938

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	In House	Excalibur PM, Picatinny NJ	12077	3337	1-4Q	3705	1-4Q	3879	1-4Q	Continue	Continue	0
b . Government IPT Support-Excalibur XM982	MIPR	ARDEC, Picatinny, NJ	22015	10860	1-4Q	12195	1-4Q	11181	1-4Q	Continue	Continue	0
c . Government TCM Support	MIPR	ARDEC, Picatinny, NJ	910	0		0		0		0	910	0
d . Government Support- Ft Sill	MIPR	Ft. Sill, OK	2254	348	1Q	365	1-2Q	384	1-2Q	Continue	Continue	0
e . Paladin Platform Integration	MIPR	PM Paladin/ARDEC, Picatinny, NJ	650	0		0		0		0	650	0
f . Modeling and Structural Development	MIPR	Army Research Labs, Adelphi, MD	3521	850	1-2Q	1353	1-4Q	950	1-4Q	Continue	Continue	0
g . Govt IPT Support Platform Integration	MIPR	ARDEC, Picatinny, NJ	5591	1120	1-4Q	1930	1-4Q	1930	1-4Q	Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604814A - Artillery Munitions - EMD

PROJECT
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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
h . Milestone Support	SS/FP	Camber, Alexandria, VA	820	220	2Q	220	2Q	142	2Q	Continue	Continue	0
i . Technical Spt Contract for Platform Integration	SS/FP	Camber, Dallas, TX	449	122	1-2Q	125	1-2Q	128	1-2Q	Continue	Continue	0
j . Fire Control development support	MIPR	Ft Monmouth, NJ/Ft Sill, OK	410	221	1-2Q	272	1-2Q	87	1-2Q	Continue	Continue	0
k . Miscellaneous Support	MIPR	Various	625	250	1-4Q	500	1-4Q	500	1-4Q	Continue	Continue	0
l . Platform Integration Software Support	MIPR	Navy Surface Warfare Center, MD	390	80	1-4Q	80	2Q	0		0	550	0
m . PM CAS SS-SFM	In-House	PM CAS, Picatinny, NJ	250	450	1-4Q	0		0		0	700	0
n . Government IPT Support - SS-SFM	MIPR	ARDEC, Picatinny, NJ	0	1625	1-3Q	0		0		0	1625	0
Subtotal:			49962	19483		20745		19181		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604814A - Artillery Munitions - EMD

PROJECT
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TECOM Test Range	MIPR	YPG, Yuma, AZ	8575	3574	1-4Q	3884	1-4Q	3338	1-4Q	Continue	Continue	0
b . Test Instrumentation and Analysis	MIPR	Army Research Labs, Adelphi, MD	2502	200	1-4Q	450	1-4Q	450	1-4Q	Continue	Continue	0
c . Telemetry Support	SS/FF	Physical Science Laboratories (PSL), Las Cruces, NM	1496	150	1Q	350	2Q	350	2Q	Continue	Continue	0
d . Telemetry Support	MIPR	ARDEC, Picatinny, NJ	5041	3644	1-4Q	5200	1-4Q	5500	1-4Q	Continue	Continue	0
e . Telemetry Cryptographic Support	MIPR	Ft. Huachuca, AZ	138	0	1Q	0		0		0	138	0
f . Tri-Service Software Assessment	MIPR	OSD, Wash, DC	61	0		0		0		0	61	0
g . Operational Test Support	MIPR	ATEC, Alexandria, VA	320	239	2Q	420	2Q	550	2Q	Continue	Continue	0
h . Target Replacement, Definition, Maintenance and Repair and Threat Assessment	MIPR	Target Management Office, Huntsville, AL.	300	370	1-2Q	1200	1-2Q	900	1-2Q	Continue	Continue	0
i . ARDEC Testing	MIPR	ARDEC, Picatinny, NJ	1075	90	1-4Q	1300	1-4Q	1300	1-4Q	Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0604814A - Artillery Munitions - EMD

PROJECT
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III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . Test Gun Equipment	MIPR	Watervliet Arsenal, NY	3376	0	1-2Q	500	1-2Q	500	1-2Q	0	4376	0
k . SS-SFM Testing	MIPR	Yuma Proving Grounds, Yuma, AZ	1000	1300	1-3Q	0		0		0	2300	0
Subtotal:			23884	9567		13304		12888		Continue	Continue	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			339118	133167		113368		99127		Continue	Continue	490938
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604814A - Artillery Munitions - EMD

PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
XM982 (Unitary) Block Ia-1 SDD	Block Ia-1 SDD																															
(1) Preliminary Design Review	▲1																															
(2) Guided Gunfire Demo - A	PDR				▲2																											
(3) Decision Point 2, (4) Milestone C for Block Ia1					▲3				▲4																							
SS-SFM JBMOU Testing	SS-SFM JBMOU Testing																															
Early Procurement of Block Ia-1, Deliveries																																
(5) Material Release & Initial Capability to JLW155 (SBCT #5)																	▲5															
Block Ia-2 SDD																	Block Ia-2 SDD															
Guided Gunfire Demo-B																																
(6) Critical Design Review (CDR), (7) System CDR					▲6				▲7																							
(8) MS C, (9) IOT&E					CDR-1				CDR-2																							
(10) IOC, (11) Full Rate Award Ia-2																																
LRIP Awards-Deliveries / FRP Deliveries																																
XM982 (Unitary) Block Ib-1 SDD																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604814A - Artillery Munitions - EMD

PROJECT
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Warhead Contractor Development Test Firing	1-4Q	1-3Q						
Guidance Soft Recovery Testing/Sys. Reliability Growth	1-4Q	1-4Q	1-4Q	1-3Q				
Guided Gunfire A (Tactical Guidance System Testing)	4Q							
Milestone C for Block 1a-1		4Q						
Guided Gunfire B (Initial Full System Test Firing)		3Q						
System Critical Design Review (CDR) -1		2Q						
System Final CDR -2			2Q					
Inductive Fuze Setter Preliminary Design Review (PDR)	2Q							
Inductive Fuze Setter CDR		3Q						
Start Developmental Technical (DT) Test, Evaluation & Qualification			1Q					
Milestone C			3Q					
Initial Capability to JLW155			4Q					
Complete Developmental Technical Test and Evaluation				2Q				
Award LRIP II Contract				2Q				
System IOT&E					2Q			
System IOC					4Q			
Block 1b-1 IPR			3Q					
SS-SFM JBMOU Testing		1-4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604817A - Combat Identification

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	11402	12069	2973	17807	19920	21390	1018	0	0	214031
482 GROUND COMBAT IDENTIFICATION	3381	12069	2973	17807	19920	21390	1018	0	0	201027
902 INDIVIDUAL COMBAT IDENTIFICATION SYSTEM (ICIDS)	8021	0	0	0	0	0	0	0	0	13004

A. Mission Description and Budget Item Justification: The ultimate goal of combat identification is to maximize combat effectiveness. This is achieved by the rapid, reliable identification of friends, foes, and neutrals. Project 482 supports the development of ground-to-ground and air-to-ground combat identification solutions for the Current Force and for the complementary systems that operate with the Future Force. This project also supports combat identification initiatives approved by the Army Marine Corps Board (AMCB) to narrow CID capability gaps. Project 902 supports the development of combat identification solutions for the individual soldier. Both projects are designed to ensure compatibility and interoperability with the Future Combat Systems (FCS).

FY06 funds will identify technical solutions for reducing the unit procurement costs of the Battlefield Target Identification Device (BTID) for vehicle-to-vehicle fratricide reduction. FY 07 funds support the development of an integrated set of combat identification solutions that encompass Doctrine, Organizations, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604817A - Combat Identification

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	6994	2991	4955
Current Budget (FY 2006/2007 PB)	12069	2973	17807
Total Adjustments	5075	-18	12852
Net of Program/Database Changes			
Congressional Program Reductions		-18	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	5075		12852
SBIR/STTR Transfer			
Adjustments to Budget Years			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604817A - Combat Identification

PROJECT
482

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
482 GROUND COMBAT IDENTIFICATION	3381	12069	2973	17807	19920	21390	1018	0	0	201027

A. Mission Description and Budget Item Justification: Combat identification (CID) is intended to maximize combat effectiveness by minimizing battlefield casualties that may result from fratricide (friendly fire) incidents. The funds requested for this project will support efforts to develop combat identification solutions that will achieve the Army's goal of minimizing fratricide in ground-to-ground and air-to-ground combat operations.

FY06 funds will identify technical solutions for reducing the unit procurement costs of the Battlefield Target Identification Device (BTID) for vehicle-to-vehicle fratricide reduction. FY 07 funds support the development of an integrated set of combat identification solutions that encompass Doctrine, Organizations, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF).

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Design and Develop Potential Air-to-Ground CID Solution	2966	0	0	0
Identify technical solutions for reducing the unit procurement costs of BTID for vehicle-to-vehicle fratricide reduction.	0	4000	2973	0
Development of the concept of operation and TTPs for RF Tags to achieve reductions in air-to-ground fratricide.	0	2194	0	0
Acquisition of RF Tag prototypes	0	800	0	0
Develop the NATO interoperable CID technology for the International CID program	415	0	0	0
Transfer to the Individual Combat Identification System (ICIDS) Program Line	0	5075	0	0
Begin development of DOTMLPF-based Solutions	0	0	0	17807
Totals	3381	12069	2973	17807

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604817A - Combat Identification

PROJECT
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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA2, SSN BA0510, Combat Identification Program	0	0	0	0	3591	26200	64879	73324	0	167994

The FY08-11 CID OPA funds support the fielding of DOTMLPF solutions.

C. Acquisition Strategy: The Army's overall CID acquisition strategy is to develop and field an integrated set of combat identification solutions that encompass Doctrine, Organizations, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF). In FY06 the focus will be on the identification of technical solutions for reducing the unit procurement costs of the Battlefield Target Identification Device (BTID), a NATO-interoperable interrogation and reply concept based on millimeter wave technology for vehicle-to-vehicle fratricide reduction. In FY 07 and beyond, the focus will be on the development and fielding of DOTMLPF combat identification solutions.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604817A - Combat Identification

PROJECT
482

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . B-Kit Development	C/CPAF	TRW, CA	69765	0		0		0		0	69765	69765
b . A-Kit Development (Abrams)	C/CPFF	GDLS, MI	10909	0		0		0		0	10909	10909
c . A- Kit Development (Bradley)	C/CPFF	UDLP, CA	3364	0		0		0		0	3364	3364
d . A-Kit Development (Various)	Misc.	E&S, TRW, UDLP, AM General, Raytheon.	5836	0		0		0		0	5836	5836
e . Air-to-Ground Efforts	MIPR	I2WD Ft. Monmouth, NJ	2206	0		0		0		0	2206	0
f . Air-to-Ground Solution Efforts	MIPR	Sandia National Labs/DOE Albuquerque, NM	550	0		0		0		0	550	0
g . Combat Identification International Efforts	C/CPFF	Raytheon Ft. Wayne, IN	415	0		0		0		0	415	0
h . ICIDS Program	TBD	PM Soldier Ft. Belvoir, VA	0	5075	2Q	0		0		0	5075	0
i . BTID Cost Reduction Efforts	TBD	I2WD/ Contractor TBD	0	3677	2Q	2673	1Q	0		0	6350	0
j . RF Tags Program Efforts	MIPR	I2WD Ft. Monmouth, NJ	0	2100	2Q	0		0		0	2100	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604817A - Combat Identification

PROJECT
482

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . RF Tag Prototypes	C/CPFF	BAE Nashua, NH	0	800	2Q	0		0		0	800	0
l . DOTMLPF Solutions	TBD	TBD	0	0		0		17807	1-4Q	42328	60135	0
Subtotal:			93045	11652		2673		17807		42328	167505	89874

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	CECOM, Fort Monmouth NJ	8303	0		0		0		0	8303	0
b . System Eng/Tech Assistance	T&M/MIPR	COLSA, Falls Church, VA; Sytex, Eatontown, NJ	7150	97	2Q	0		0		0	7247	0
c . Test Planning	MIPR	CECOM, Fort Monmouth NJ	437	0		0		0		0	437	0
d . Technical Support	MIPR	Sandia National Laboratories/IDA Albuquerque, NM	570	0		0		0		0	570	0
Subtotal:			16460	97		0		0		0	16557	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604817A - Combat Identification

PROJECT
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Technical Test, Log Demo, SCD, IOTE	MIPR	ATEC, YPG, AZ	3513	0		0		0		0	3513	0
b . Limited User Test	MIPR	ATEC, YPG, AZ	673	0		0		0		0	673	0
c . ASCIET	MIPR	Misc.	6651	0		0		0		0	6651	0
Subtotal:			10837	0		0		0		0	10837	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	In-house support	PM NavSys/TIMS, Ft. Monmouth, NJ	5508	320	1-4Q	300	1-4Q	0		0	6128	0
Subtotal:			5508	320		300		0		0	6128	0

Project Total Cost:			125850	12069		2973		17807		42328	201027	89874
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604817A - Combat Identification

PROJECT
482

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Radio Frequency (RF) Tag Program Efforts					RF Tag Program Efforts																											
Battlefield Target Identification Device (BTID) Cost Reduction Studies									BTID Cost Reduction Studies																							
Coalition Combat Identification (CID) ACTD													Develop and Test Technologies																			
Army Marine Corps Board (AMCB) CID Study																																
Develop and Field DOTLMPF CID Solutions																					Develop and Field DOTLMPF CID Solutions											

DOTLMPF: Doctrine, Organizations, Training, Materiel, Leader Development and Education, Personnel, and Facilities

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604817A - Combat Identification

PROJECT
482

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Design and Develop Air-to-Ground CID Solution	1-4Q							
Execute Combat Identification International program efforts	1-4Q							
CCID ACTD	1-4Q	1-4Q						
RF Tags Program Efforts		1-4Q						
BTID Cost Reduction Studies		1-4Q	1-4Q					
AMCB CID Study	3-4Q							
Develop and Field DOTMLPF CID Solutions				1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604818A - Army Tactical Command & Control Hardware & Softwar

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	101914	64811	66980	68873	49802	42888	10387	8510	Continuing	Continuing
323 COMMON HARDWARE SYSTEMS	6226	4543	4493	6650	6955	7236	0	0	0	54220
334 COMMON SOFTWARE	28938	20622	15792	16040	11925	14289	0	0	Continuing	0
C15 MOUNTED BATTLE COMMAND ON-THE-MOVE (MBCOTM)	0	0	9975	12210	11022	2190	775	0	Continuing	0
C29 CENTRALIZED TECHNICAL SUPPORT FACILITY (CTSFF)	11165	11356	9702	10184	10681	9954	9612	8510	Continuing	0
C34 ARMY TAC C2 SYS ENG	27220	10296	16449	9336	9219	9219	0	0	Continuing	0
C39 TACTICAL OPERATIONS CENTERS (TOCS)	6260	10387	3048	4408	0	0	0	0	Continuing	0
C3A ARMY AIRBORNE COMMAND & CONTROL SYS (A2C2S)	22105	7607	7521	10045	0	0	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification: The umbrella program to exploit automation technology for the conduct of combat operations is the Army Tactical Command and Control System (ATCCS) program which is a component of the Army Battle Command System (ABCS). The ATCCS program provides automation in the five battlefield functional areas (BFAs) with the following specific systems: (1) Maneuver Control System (MCS); (2) Effects and Fires Command and Control Systems (EFCCS); (3) All Source Analysis System (ASAS) for Intelligence/Electronic Warfare; (4) Forward Area Air Defense Command, Control and Intelligence System (FAADC2I); and (5) Battle Command Sustainment Support System (BCS3). To provide an overall technically sound, cost effective, and operationally responsive approach, the design and development of ATCCS must be accomplished on a total systems basis. The ATCCS Engineering Program, more commonly known as Systems Engineering and Integration (SE&I), provides the required overall systems engineering to assure integrated Army tactical command and control and the utilization of common hardware and software throughout the five ATCCS nodal systems. This program element also includes the Central Technical Support Facility (CTSFF) which provides a single technical "center of mass" for software checkout and physical system integration. The Common Hardware and Software projects provide common products to customers to meet their developmental and fielding needs. The Tactical Operations Centers (TOCs) project designs and develops the TOCs that form the structural backbone of the Army's digitized fielding concept. Starting in FY04 this program includes funding for the SICPS program which was previously funded in project C12 in FY03. The Army Airborne Command & Control (A2C2S) provides the avionics system required to horizontally and vertically integrate the battlefield. These systems support the Legacy to Objective transition path.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control Hardware & Softwar

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	68110	79660	59451
Current Budget (FY 2006/2007 PB)	64811	66980	68873
Total Adjustments	-3299	-12680	9422
Net of Program/Database Changes			
Congressional Program Reductions	-1458		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-1841		
Adjustments to Budget Years		-12680	9422

Change Summary Explanation: Funding - FY06: Funds (-12680) realigned to higher priority requirements.

FY07: Funds increase of +9422 is the result of the following:

- (C34) SE&I +6175: Plus up to fund System Engineering support
- (C3A) A2C2S +3473: Army PBD to integrate JTRS
- (C15) MBCOTM +12210: Army added funding for capability support
- (C29) CTSF -2277: Decrement to Field Engineering support
- (334) CS -10081: Decrement to Digital System Engineering support
- (323) CHS -78 : Decrement to Program Support

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
323

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
323 COMMON HARDWARE SYSTEMS	6226	4543	4493	6650	6955	7236	0	0	0	54220

A. Mission Description and Budget Item Justification: CHS is the program through which the Army ensures standardization and common integration for the Army Battle Command Systems (ABCS) hardware. CHS provides fully qualified interoperable, compatible, deployable, and survivable hardware and COTS software for Command, Control and Communications at all echelons of Command, for the United States Army and other DoD Services with world-wide repair, maintenance and logistics support through contractor operated CHS Repair Centers (CRCs) and management of a comprehensive warranty program.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue management of the acquisition and delivery of CHS equipment in support of customer requirements	6226	3743	3693	5797
Continue supporting customers testing efforts with CHS equipment	0	300	300	300
Continue CHS technology insertion	0	500	500	553
Totals	6226	4543	4493	6650

B. Other Program Funding Summary: Not applicable for this item.

Not applicable for this item.

C. Acquisition Strategy: The overall goal is to improve interoperability and compatibility and lower life cycle costs by standardizing battlefield command and control (C2) automation through centralized buys of non-developmental items (NDI), standardized protocols and reusable commercial common software. This project provides a coherent migration strategy for ABCS systems through the use of technology insertion.

CHS also conducts common environmental and developmental testing of hardware items thereby reducing the testing requirements for individual BFAs. A firm fixed price, full and open competition contract, was awarded to GDC4S in May 2003, for ruggedization and production.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
323

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . GDC4S/CHS-3 Non-Recurring Engineering	C/FFP/IDIQ	Taunton, MA	12000	0		0		0		12000	Continue	0
b . Technology Insertion	Various	Various	11685	500	1-3Q	500	1-3Q	553	1-3Q	Continue	Continue	0
c . Systems Engineering	Various	Fort Monmouth, NJ	63887	2456		662		2581		Continue	69586	0
d . In-house Government Support	MIPR	Fort Monmouth, NJ/Huntsville, AL	48699	3190	1-3Q	3031	1-3Q	3216	1-3Q	Continue	58136	0
Subtotal:			136271	6146		4193		6350		Continue	Continue	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Not applicable			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
323

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CHS Test Activities	MIPR	Other Government Activities	900	300	3-4Q	300	3-4Q	300	3-4Q	Continue	1800	0
Subtotal:			900	300		300		300		Continue	1800	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			137171	6446		4493		6650		Continue	Continue	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604818A - Army Tactical Command & Control
 Hardware & Softwar**

PROJECT
323

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Technology Insertion	[Redacted]																															
CHS-2 Contract Expires	[Redacted]				1	[Redacted]																										
CHS-2 Warranty Ends for H/W Procured Option Yrs 6-10	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]							
CHS-2 Warranty Extension If Required	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]							
CHS-3 V1 Hardware Deliveries	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]							
CHS-3 V2 Hardware Deliveries	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]							

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
323

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
CHS Technology Insertion (continuous)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
CHS-3 V1 deliveries	2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
CHS-3 V2 deliveries		2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
334

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
334 COMMON SOFTWARE	28938	20622	15792	16040	11925	14289	0	0	Continuing	0

A. Mission Description and Budget Item Justification: Project D334 Common Software (CS): Common Software is the program through which the Army procures, develops, integrates and tests common software products and/or modules and/or components for both the Army and Joint Services through the Common Operating Environment (COE). The CS project provides state-of-the-art software technologies and functionality that is used by numerous Army Battle Command Systems (ABCS) thereby eliminating the need for similar independent development and duplication of effort. The CS program is a cornerstone in the Army's digitization efforts that includes system integration of ABCS Information Services for the ABCS 6.4 architecture. The AIS centralizes the dissemination of battlefield data by allowing users to publish and subscribe data in a common format.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue the development, acquisition management and delivery of CS and Commercial-Off-The-Shelf (COTS) products in support of Army and Joint Service customer requirements to include software upgrades. Continue to achieve enhanced levels of interoperability by defining, testing and implementing software technologies that are provided to the warfighter. CS products will bridge current to future force technologies in support of the Future Combat System (FCS) and the Army's way ahead.	6841	7384	7605	7833
Continue execution of the Common Software technology and reuse program; supporting customer integration and testing; the exploration and evaluation of new software technologies in support of the overall CS program; and developing, upgrading and delivery of DII COE products into Army and Joint Service systems. The CS products released to the Army and Joint Programs are also used in support of the US/Allied coalition efforts.	16003	13238	8187	8207
Information Dissemination Management - Tactical (IDM-T) effort. The IDM-T is one of the CS products that provides the Army's input into the Global Information Grid (GIG). This product is GIG compliant. The IDM-T will provide information management and transport services of critical situational awareness data for commanders and their staff.	2000	0	0	0
Integrate the Army's Advanced Warfare Environment's commercial 3D display technology development to support command and control modernization initiatives.	4094	0	0	0
Totals	28938	20622	15792	16040

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
334

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Not applicable for Common Software Program	0	0	0	0	0	0	0	0	0	0

C. Acquisition Strategy: The overall goal is to improve software development, integration and interoperability, and to lower life cycle costs by providing common software products to the Army, Joint Services, and Coalition efforts. The CS program is designed to increase both horizontal and vertical interoperability while reducing development, integration and testing resources. This strategy will be realized through defined Application Program Interfaces (APIs), standardized protocols, reusable software and standard commercial products. The CS program plans to partner with and provide products to the Future Combat System (FCS).

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
334

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support of CS Lab, Data Access	MIPR	CECOM, Fort Monmouth, NJ	1458	395	1-3Q	155	1-3Q	162	1-3Q	Continue	Continue	0
b . Engineering/Software Development	C, T&M	Various GSA Contractors / Various Locations	30812	11126	1-3Q	13880	1-3Q	14062	1-3Q	Continue	Continue	0
c . ABCS System Engineering & Integration	MIPR	PEO C3T, Fort Monmouth, NJ	210	0		0		0		0	210	0
d . 3D Display Technology	OTA	Concurrent Technology Corp., Johnstown, PA	9083	0		0		0		0	9083	0
e . Digital System Engineers		Various Contractors	7000	7400	1-2Q	0		0		0	14400	0
f . DISA Support for COE	MIPR		1486	0		0		0		0	1486	0
g . IDM-T Engineering Support	MIPR	GSA Contractors	2000	0		0		0		0	2000	0
Subtotal:			52049	18921		14035		14224		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar	PROJECT 334
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Support	In-house	PM GCC2, Ft. Monmouth, NJ	777	816	1-3Q	841	1-3Q	866	1-3Q	Continue	Continue	0
b . Automation Support	C, T&M	PKMM, Oceanport, NJ	499	165	1-2Q	171	1-2Q	179	1-2Q	Continue	Continue	0
Subtotal:			1276	981		1012		1045		Continue	Continue	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Not applicable			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

Remarks: Development Testing (DT) is performed by development contractors and is covered under the Product Development section of this R-3. Operational Testing (OT) is funded by the applicable BFA application programs.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar	PROJECT 334
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Office Management	In-House	Fort Monmouth, NJ	2357	720	1-4Q	745	1-4Q	771	1-4Q	Continue	Continue	0
Subtotal:			2357	720		745		771		Continue	Continue	0

Project Total Cost:			55682	20622		15792		16040		Continue	Continue	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604818A - Army Tactical Command & Control
 Hardware & Softwar**

PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) , (2) , (3) , (4) , (5) , (6) COE Releases	▲ 1				▲ 2				▲ 3				▲ 4				▲ 5				▲ 6											

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar	PROJECT 334
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Software development is continuous and performed in accordance with Army Software Blocking Policy.	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		

Note: COE software product deliveries are made every twelve (12) months.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar				PROJECT C15		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
C15 MOUNTED BATTLE COMMAND ON-THE-MOVE (MBCOTM)	0	0	9975	12210	11022	2190	775	0	Continuing	0

A. Mission Description and Budget Item Justification: This project funds the development of the Mounted Battle Command on the Move System. Mounted Battle Command on the Move (MBCOTM) provides a battle command platform for maneuver commanders for echelons from Calvary Squadron through Unit of Employment (UEy). The focus of MBCOTM is to facilitate commander execution centric operations versus command post centric operations. MBCOTM provides for battle command by providing a commander situational awareness in the form of a digital common operational picture enabling a commander to maintain situational understanding while moving and physically separated from fixed command posts. MBCOTM provides battle command enablers to support war (i.e., deterring aggression and coercion; fighting conflicts) and operations other than war (i.e., peacekeeping, domestic disaster relief, reducing potential conflicts, promoting regional stability, humanitarian missions and homeland security). MBCOTM supports the mission area of Command and Control. Future capabilities will include adding Joint Tactical Radio System radio and Wideband Gapfiller system upgrade. Future improvements will include addition of secure wireless Local Area Network, Land Warrior, and Unmanned Aerial Vehicle feed.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
System Development and Test/Evaluation BLK 0	0	0	2500	5000
Prototype Build	0	0	975	3500
Log Development	0	0	3000	1710
Program Spt (MS B, MS C)	0	0	3500	2000
Totals	0	0	9975	12210

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604818A - Army Tactical Command & Control
 Hardware & Softwar**

PROJECT
C15

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Mounted Battle Command on the Move MBCOTM (BZ9970)	0	0	870	7982	76172	47676	28248	12946	0	173894

C. Acquisition Strategy: The government is developing the prototype MBCOTM and will do a full and open competition for production.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System and Development of Block 0	TBD	TBD	0	0		9975		12210		0	22185	0
Subtotal:			0	0		9975		12210		0	22185	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			0	0		9975		12210		0	22185	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604818A - Army Tactical Command & Control
 Hardware & Softwar**

PROJECT
C15

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
SDD and Production Development - HMMWV Variant (Block 0)	SDD and Production Development - HMMWV Variant (Block 0)																															
(1) Paper MS B (HMMWV/BRADLEY/STRYKER)					▲ ₁ Paper MS B (All Variants)																											
(2) MS C LRIP/HMMWV Variant									▲ ₂ MS C LRIP/HMMWV Variant																							
(3) FRP HMMWV VARIANT													▲ ₃																			
HMMWV BLK 0 Test Articles									HMMWV BLK 0 Test Articles																							
DT/OA (HMMWV)									DT/OA (HMMWV)																							
(4) FUE (HMMWV)																	▲ ₄ FUE (HMMWV)															
IOTE (HMMWV)													IOTE (HMMWV)																			
Block 0 HMMWV FRP/RETROFIT/UPGRADE																	Block 0 HMMWV FRP/RETROFIT/UPGRADE															
SDD and Production and Development (Bradley/Stryker)																					SDD and Production and Development (Bradley/Stryker)											
(5) MS C LRIP/Bradley /Stryker Variants									MS C LRIP/Bradley /Stryker Variants				▲ ₅																			
DT/OA (Bradley/Stryker)													DT/OA																			
(6) FUE Bradley/Stryker																					FUE Bradley/Stryker				▲ ₆							
Bradley/Stryker Test Articles									Test Articles(B/S)																							
Bradley/Stryker FRP/RETROFIT/UPGRADE																					Bradley/Stryker											

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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PROJECT
C15

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
SDD/Development/Production for HMMWV	3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Paper MS B		2Q						
MS CLRIP/HMMWV Variant			1Q					
FRP HMMWV				1Q				
HMMWV Block 0 Test Articles	2-4Q	1-3Q						
DT/OA (HMMWV)		2-4Q	1Q					
FUE (HMMWV)					1Q			
IOTE (HMMWV)			3-4Q	1Q				
Block 0 (HMMWV) FRP/RETROFIT/UPGRADE				2-4Q	1-4Q	1-4Q	1-4Q	1-2Q
SDD/Development/PProduction for Bradley/Stryker		2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1Q
MS C and LRIP for Bradley/Stryker					1Q			
DT/OA (Bradley/Stryker)				3-4Q	1-4Q			
FUE (Bradley Stryker)							1Q	
Bradley/Strker Test Articles			2-4Q	1-3Q				
Bradley/Stryker FRP/RETROFIT/UPGRADE						2-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar				PROJECT C29		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
C29 CENTRALIZED TECHNICAL SUPPORT FACILITY (CTSF)	11165	11356	9702	10184	10681	9954	9612	8510	Continuing	0

A. Mission Description and Budget Item Justification: Project DC29 - Centralized Technical Support Facility: The Central Technical Support Facility (CTSF) is located in Fort Hood, Texas. The CTSF provides a centralized on-the-ground capability to ensure interoperability among various digitized platforms and serves as the final integration and maturation facility for Common Operating Environment (COE). The CTSF is the Warfighters "Edge" that acts as an enabler for rapid integration of dissimilar software and hardware systems through real time, on-site integration of soldiers, contractors, testers, Program Managers and the requirements community. Also the CTSF provides a single technical "center of mass" for software checkout and system integration and provides a controlled environment with connectivity to other C4I systems either on-site or through the Army Interoperability Network (AIN) to support digital integration and fielding. This effort supports the Current to Future transition path.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue test planning/procedures/execution/reporting	1796	1739	1674	1927
Continue software engineering.	2032	2086	1741	1791
Provide infrastructure (Facilities, upgrades, additions).	1428	1440	1202	1236
Continue Digital System Engineering	1322	1304	1089	1120
Continue management operations.	1310	1322	1104	1135
Provide equipment for instrumentation, simulation/stimulation, software evaluation and development tools.	900	905	755	777
Continue configuration management.	806	826	689	709
Provide networks connections to include DISN, SIPRNET, NIPRNET, GUARDNET.	308	315	263	270
Provide logistics support.	227	233	194	200
Provide DA Mandated Intra-Army Digital Certification test and validation.	915	1186	991	1019
Small Business Innovative Research	85	0	0	0
Small Business Technology Transfer Programs	36	0	0	0
Totals	11165	11356	9702	10184

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY

5 - System Development and Demonstration

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B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: This project provides the technical and programmatic disciplines required for systems engineering and integration, experimentation, acquisition management, testing, software development, interoperability, fielding and sustainment to ensure an interoperable and affordable ATCCS. The Program Executive Officer for Command, Control, Communications, Tactical (PEO C3T) has planned an evolutionary approach to fielding ATCCS as soon as possible.

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BUDGET ACTIVITY
5 - System Development and Demonstration

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PROJECT
C29

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MANTECH (Direct Labor)	C/CPFF	Fort Hood, TX	4921	2424	1Q	2246	1Q	2515	1Q	Continue	12106	Continue
b . COMPUTER SCIENCE CORP (System Engineering)	C/CPAF	Fort Hood, TX/Fort Monmouth, NJ	2344	1214	1Q	1013	1Q	1042	1Q	Continue	5613	Continue
c . MITRE Corp (System Engineering)	C/CPFF	Fort Hood, TX/Eatontown, NJ	2116	1104	1Q	921	1Q	948	1Q	Continue	5089	Continue
d . CAMBER (Config Mgt/)	C/CPAF	Fort Hood, TX	1200	600	1Q	501	1Q	515	1Q	Continue	2816	Continue
e . Northrop Grumman (Field Engineering)	C/CPIF	Fort Hood, TX	1953	1011	1Q	844	1Q	868	1Q	Continue	4676	Continue
f . NICHOLS (Logistics Support)	C/CPAF	Fort Hood, TX	1521	790	1Q	659	1Q	678	1Q	Continue	3648	Continue
g . ILEX (Field Engineering)	C/CPAF	Fort Hood, TX	763	395	1Q	330	1Q	339	1Q	Continue	1827	Continue
h . ROBBINS- GIOIA (Data Base Management)	C/CPAF	Fort Hood, TX/Fort Monmouth, NJ	607	314	1Q	262	1Q	270	1Q	Continue	1453	Continue
i . GTE	C/CPFF	Fort Hood, TX	468	243	1Q	203	1Q	209	1Q	Continue	1123	Continue
j . EWA	C/CPAF	Fort Hood, TX	283	146	1Q	122	1Q	125	1Q	Continue	676	Continue

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
C29

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			16176	8241		7101		7509		Continue	39027	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CECOM Matrix	MIPRs	Fort Hood, TX/Fort Monmouth, NJ	145	0		0		0		Continue	Continue	Continue
b . In-House Support	MIPRs	Fort Hood, TX	273	159	1Q	133	1Q	137	1Q	Continue	702	Continue
c . Other Government Support	MIPRs	Fort Hood, TX	83	55	1Q	46	1Q	48	1Q	Continue	232	Continue
Subtotal:			501	214		179		185		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar	PROJECT C29
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ELECTRONIC PROVING GROUNDS (EPG)	MIPR		4670	2426	1-2Q	2025	1-2Q	2082	1-2Q	Continue	11203	Continue
b . CAMBER (Testing)	CPAF	Fort Hood, TX	875	475	1Q	397	1-2Q	408	1-2Q	Continue	2155	Continue
Subtotal:			5545	2901		2422		2490		Continue	13358	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Not applicable			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			22222	11356		9702		10184		Continue	Continue	Continue
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Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
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PROJECT
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Army Battle Command System (ABCS) 6.3 Test/Fixes/Integration								
ABCS 6.4 System of System (SoS) Integration	3Q							
Operation Iraqi Freedom (OIF)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
ABCS 6.4 Test Window	2-4Q	1Q						
Operation Enduring Freedom (OEF)		3-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
I Corps Warfighter		1Q						
Prairie Warrior 05		3Q						
III Corps Warfighter			1Q					
Prairie Warrior			3Q	3Q	3Q	3Q		
Ulchie Focus Lens (UFL)			4Q	4Q	4Q	4Q		
Certification Software Blocking		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
C34 ARMY TAC C2 SYS ENG	27220	10296	16449	9336	9219	9219	0	0	Continuing	0

A. Mission Description and Budget Item Justification: Project DC34 - Army Tactical Command and Control Systems (ATCCS) Engineering which is also referred to as Systems Engineering and Integration (SE&I): Doctrine requires military leaders to make sound and timely command and control decisions to direct the activities of assigned and supporting units. The umbrella program to exploit automation technology in support of this mission is the ATCCS or SE&I program. The effort to achieve horizontal integration of the ATCCS Battlefield Functional Areas (BFAs), although going on independently in each BFA, was not disciplined enough to address all connections and needs within the entire spectra of command, control and communications. Therefore, to ensure this horizontal integration effort is complete and fully automated, a significant management, systems engineering and integration effort is required. This effort, supporting the Army Battle Command Systems (ABCS) Version 6.30, includes fielding the ABCS Version 6.4 to the entire Army in four years and the current to the future transition path. The four year fielding is with "Good Enough" software and the future transition path was developed as the "Top Down Architecture".

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue Army Battle Command System (ABCS) Integrated Logistics Support	482	187	382	213
Continue ABCS Testing and Evaluation of all Battlefield Functional Area (BFA) fielded software	1210	477	803	447
Continue ABCS Fielding/Scheduling	2212	936	1410	785
Continue ABCS Integrated Training Support	2177	840	0	0
Continue ABCS information engineering	2247	1126	2443	1383
Conduct and support system interoperability engineering	907	346	571	318
Continue exploring state of the art technology insertion in support of the ABCS program	472	180	373	208
Continue development and implementation of the ABCS information assurance	1080	452	525	292
Continue ABCS System Engineering	8040	2738	5082	2987
Continue System of Systems Development	7630	3014	4860	2703
Small Business Innovative Research/Small Business Technology Transfer Programs	681	0	0	0
Small Business Technology Transfer Programs	82	0	0	0
Totals	27220	10296	16449	9336

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

**0604818A - Army Tactical Command & Control
Hardware & Softwar**

PROJECT

C34

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: This project provides the technical and programmatic disciplines required for systems engineering and integration, experimentation, acquisition management, testing, interoperability, support to fielding and sustainment to ensure an interoperable and affordable Army Tactical Command and Control Systems (ATCCS). The Program Executive Officer for Command, Control, Communications, Tactical (PEO C3T) has planned an evolutionary approach to fielding ABCS 6.4 in four years which ends in first quarter FY08. Fiscal years FY08 and FY09 will focus on "Systems of Systems" Engineering and integration for evolution toward JC2 and FCS.

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BUDGET ACTIVITY
5 - System Development and Demonstration

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PROJECT
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Northrop Grumman	C/CPIF	Fort Monmouth, NJ/Fort Hood, TX	9463	565	1Q	595	1Q	692	1Q	Continue	11315	Continue
b . CSC, NICHOLS	C/CPAF	Fort Monmouth, NJ/Fort Hood, TX	31283	1251	1Q	4250	1Q	1094		Continue	37878	Continue
c . MITRE	C/CPFF	Ft Monmouth, NJ/Eatontown, NJ	27425	5714	1Q	7517	1Q	4255	1Q	Continue	44911	Continue
d . MANTECH (Direct Labor)	C/CPFF	Fort Monmouth, NJ/Fort Hood, TX	6496	0		0		0		0	6496	6546
e . CAMBER (Config Mgt/)	C/CPAF	Fort Hood, TX	1788	0		0		0		0	1788	855
f . ROBBINS-GIOIA	C/CPAF	Fort Monmouth, NJ/Fort Hood, TX	4972	540	1Q	1620	1Q	890	1Q	Continue	8022	Continue
g . LOCKHEED MARTIN	C/CPAF	Eatontown, NJ	6034	0		0		0	1Q	Continue	6034	Continue
h . GTE (Labor and Equipment)	C/CPFF	Fort Hood, TX	2281	0		0		0	1Q	Continue	2281	Continue
i . Misc Contracts	C/CPAF	Fort Monmouth, NJ/Fort Hood, TX	5703	185	1-2Q	278	1Q	90	1-2Q	Continue	6256	Continue
j . Unixpros	C/CPAF	Eatontown, NJ	3711	0		0		0		0	3711	3711

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BUDGET ACTIVITY
5 - System Development and Demonstration

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . ATSC	MIPR	Fort Leavenworth, KY	1850	0	1Q	0		0		Continue	1850	Continue
l . IDA	MIPR	Fort Monmouth, NJ	1724	0	1Q	0		0		Continue	1724	Continue
m . ITT	C/CPAF	Eatontown, NJ	1070	0		0		0		Continue	Continue	Continue
n . BOOZ-ALLEN	C/CPAF	Eatontown, NJ	1950	0		0		0	1Q	Continue	1950	Continue
o . MISCELLANEOUS SUPPORT	C/CPAF	Eatontown, NJ/Fort Hood, TX	1521	464	1-2Q	525	1-2Q	566	1-2Q	Continue	3076	Continue
Subtotal:			107271	8719		14785		7587		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
C34

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IN-HOUSE SUPPORT	MIPRs	Fort Monmouth, NJ/Fort Hood, TX	5727	335	1Q	352	1Q	370	1Q	Continue	6784	Continue
b . CECOM MATRIX	MIPRs	Fort Monmouth, NJ/Fort Hood, TX	4045	982	1Q	1031	1Q	1083	1Q	Continue	7141	Continue
c . OTHER GOVERNMENT SUPPORT	MIPRs	Fort Monmouth, NJ/Fort Hood, TX/Fort Belvoir, VA	3339	130	1Q	137	1Q	144	1Q	Continue	3750	Continue
Subtotal:			13111	1447		1520		1597		Continue	17675	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . EPG	MIPR	Fort Huachuca, AZ	2463	130	1Q	144	1Q	152	1Q	Continue	2889	0
Subtotal:			2463	130		144		152		Continue	2889	0

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February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
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PROJECT
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . SBIR/STTR	Various		792	0		0		0		0	792	0
Subtotal:			792	0		0		0		0	792	0

Project Total Cost:			123637	10296		16449		9336		Continue	Continue	Continue
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Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
C34

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
ABCS 6.3.X	1Q							
NATIONAL TRAINING CENTER (NTC) ROTATIONS	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
ABCS 6.4 SOFTWARE DEVELOPMENT and TESTING	1-4Q	1-2Q						
SBCT-2 FIELDING	1-3Q							
SBCT-3 FIELDING	1-4Q	1-3Q						
SBCT - 4 FIELDING	4Q	1-4Q	1-3Q					
SBCT-5 FIELDING		4Q	1-4Q	1-3Q				
SBCT-6 FIELDING			4Q	1-4Q	1-3Q			
FUTURE OPERATIONAL ARCHITECHTURE (OA)/SYSTEM ARCHITECTURE (SA)					1-4Q	1-4Q		
ABCS SYSTEMS ENGINEERING & INTEGRATION TRANSITION TO FCS					1-4Q	1-4Q		
FIELDING OF ABCS 6.4 TO ARMY	4Q	1-4Q	1-4Q	1-4Q	1Q			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar				PROJECT C39		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
C39 TACTICAL OPERATIONS CENTERS (TOCS)	6260	10387	3048	4408	0	0	0	0	Continuing	0

A. Mission Description and Budget Item Justification: The Tactical Operations Center (TOC) program provides commanders and their staffs with digitized platforms and command information centers, where courses of action become plans, plans become orders and battle tracking occurs. Based on the approved Operational Requirements Document (ORD), a new start TOC program consisting of Command Post Platforms (CPPs) with standardized shelters, installation kits, large screen displays, environmentally-controlled tents and trailer-mounted support systems, will be developed and fielded to future units. The CPPs will integrate Army Battle Command Systems (ABCS), communications equipment, intercoms, and local area networks into a standard Army platform. CPPs are digitized, tactically mobile, and fully integrated using military off-the-shelf, commercial off-the-shelf, non-developmental items, and emerging technologies. Network centric TOCs support joint interoperability, ensuring that information superiority and force synchronization are gained on the tactical and operational battlefield. Fielded TOCs include Current Force TOCs for 4ID and 1CD and Stryker Brigade Combat Teams (SBCT 1-3). Currently, the TOC program is providing OEF/OIF support to four units including the Coalition Forces Land Component Command (CFLCC), Coalition Joint Task Force 7, 1CD, and SBCT-2. TOCs/CPPs provide the command post migration path to Future Combat Systems (FCS). FY05 funding provides design, engineering and testing of Rigid Wall Shelter (RWS) CPP and Command Center System (CCS), SICPS family of tents, and supports the integration of TOCs for the Current Force and STRYKER Brigade Combat Teams (SBCTs). FY06 funding completes design, engineering and testing of RWS CPP and CCS, and SICPS family of tents. FY07 funding provides incorporation of engineering changes resulting from IOT&E and begins incorporation of Future Combat System technology spiraled forward.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Design, engineering and test of Stryker Brigade Combat Team TOCs	6260	800	0	0
Design, engineering and testing of Command Post Platforms (CPPs)	0	7013	2195	3324
Government Test Support	0	1476	600	826
In-house Government Support	0	1098	253	258
Totals	6260	10387	3048	4408

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control Hardware & Softwar

PROJECT
C39

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Other Procurement Army 2 - SSN: BZ9865	72026	49677	58339	48136	55591	54833	0	0	Continuing	Continuing

C. Acquisition Strategy: The TOC evolutionary acquisition strategy relies on non-developmental items (NDI), Commercial Off-the-Shelf (COTS), and Government-furnished equipment (GFE) to design, integrate, assemble, test, train, and field Tactical Operations Centers (TOCs) and Command Post Platforms (CPPs). A contract was awarded in August 2004, using full and open competition to design, develop and test CPPs Future Force TOCs.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
C39

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Current Force TOCs	C/CPFF	GDDS (Huntsville, AL)	10567	800		0		0		Continue	11367	Continue
b . Current Force TOCs			0	0		0		0		0	0	0
c . SBCTs 1,2 & 3	C/CPIF	NGMS (Huntsville, AL)	8745	0		0		0		0	8745	Continue
d . SBCTs 4	C/CPFF	PIF/JVIS	682	0		0		0		0	682	Continue
e . Command Post Platforms	C/CPIF	NGMS (Huntsville, AL)	365	7013	1Q	2195	1Q	3324	1Q	Continue	12897	Continue
f . In-House and Government Support		Various	1488	1098	1-2Q	253	1-2Q	258	1-2Q	0	3097	0
g . TOC 3D Survivable Carrier			4100	0		0		0		0	4100	0
Subtotal:			25947	8911		2448		3582		Continue	40888	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Government Test Support		various	110	1476	1-2Q	600	1-2Q	826	1-2Q	0	3012	0
Subtotal:			110	1476		600		826		0	3012	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			26057	10387		3048		4408		Continue	43900	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604818A - Army Tactical Command & Control
 Hardware & Softwar**

PROJECT
C39

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1st CD	IN																															
3rd ACR								OTC LAN																								
SBCTs 1-4	DESIGN/INT/FLD																															
(1) AROC, (2) MS B	AROC 1							MS B 2																								
(3) Development Contract Award								Dev C/A 3																								
Design, Develop, Test CPPs					Design, Develop, Test CPPs																											
(4) MS C																																
(5) LRIP Contract Award																																
(6) FUE																																
IOTE																																
(7) FRP Decision Review																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
C39

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
SBCTs Design/Int /Field	1-4Q	1-2Q						
AROC	1Q							
Milestone B	4Q							
Development Contract Award	4Q							
Design, Develop, Test CPPs		1-4Q	1-4Q	1Q				
Milestone C		4Q						
LRIP Contract Award		4Q						
First Unit Equipped			3Q					
Initial Operational Test & Evaluation			4Q					
Full Rate Production Decision Review				1Q				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar				PROJECT C3A		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
C3A ARMY AIRBORNE COMMAND & CONTROL SYS (A2C2S)	22105	7607	7521	10045	0	0	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project funds the development of an Airborne Battle Command On The Move System required to horizontally and vertically integrate a linear and non-linear battlefield. Tasks in this project support research efforts in the engineering and manufacturing development phase of this system. The Army Airborne Command and Control System (A2C2S) is an Army Airborne Battle Command acquisition program for a system supporting the unit of action, unit of employment, and Brigade Combat Teams. The A2C2S enables Commanders and their staffs, to traverse the battle space rapidly - maintaining situational awareness of all battlefield systems - and maintaining communications throughout the decision continuum. Using Battle Command Software and line-of sight and non-line-of sight voice and data communications the A2C2S provides information superiority through a common operational picture. In addition, A2C2S is to the airborne first-responder for Homeland Security and disaster relief by providing a robust communications platform for emergency response coordinators of air and ground operations. It will support initial and remote scene operations center capabilities, convoy operations, and disaster coordination between state, federal, civilian and military assets. This system is critical to enhance the Battle Command Group's ability to effectively perform combat unit operations and serve as a force multiplier in the Future Force. A2C2S supports the Chief's Vision and the modularity concept of the Army Over Time.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue System Development and Evaluation BLK I	22105	3107	3321	4945
Development of Supportability Package (Log and Training Products)	0	0	0	1250
Continue "Good Enough" Integration (ABCS 6.4 and NLOS SATCOM)	0	3000	2800	0
JTRS Design Integration	0	0	0	0
Continue AWQ, Development and Operational Test	0	1500	1400	700
MS C Prep, S/W Integration and Demonstrations	0	0	0	0
FCS C2 Design	0	0	0	2500
ECS Integration Design	0	0	0	650
Totals	22105	7607	7521	10045

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
C3A

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Airborne Command and Control SSN AA0710	26378	27496	28055	29623	32837	40009	9302	0	Continuing	Continuing

C. Acquisition Strategy: A competitive cost type contract was awarded for A2C2S development in August 2001 to Raytheon. Raytheon produced three (3) prototype systems in FY03 in support of OEF/OIF.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
C3A

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Dev and Eval BLK I	CPIF	Raytheon Huntsville, and TBD	8672	3851	1Q	4165	1Q	6973	1Q	Continue	23661	0
b . Prototype Integration (Systems 3 - 7)	CPIF	Raytheon	9497	0		0		0		Continue	9497	0
c . Software Integration/Development	CPIF	Raytheon Huntsville	2618	0	1Q	0		0		Continue	2618	0
d . Systems and Engineering Logistics Support	Various	Raytheon /AMCOM	12599	1285	1Q	500	1Q	500	1Q	Continue	14884	0
e . ABCS SE&I	MIPR	Ft. Monmouth, NJ	195	0		0		0		0	195	0
f . Inhouse/Government	Various	Various	0	560	1Q	1000	1Q	1400	1Q	0	2960	0
Subtotal:			33581	5696		5665		8873		Continue	53815	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
C3A

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Support of System 1 and 2 deployed to 4th ID and 101st ABN	Various	Various	3759	0	1Q	0		0		0	3759	0
Subtotal:			3759	0		0		0		0	3759	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Test & Evaluation and AWQ	MIPR/CPIF	ATEC/RTTC/AATD/AED/Raytheon	11903	1502	1Q	406	1Q	702	1Q	Continue	14513	0
b . Operational Test	Various	Various	1883	0	1Q	1000	1Q	0		Continue	2883	0
Subtotal:			13786	1502		1406		702		Continue	17396	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar	PROJECT C3A
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House/Gov't			5219	409	1Q	450	1Q	470	1Q	0	6548	0
Subtotal:			5219	409		450		470		0	6548	0

Project Total Cost:			56345	7607		7521		10045		Continue	81518	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604818A - Army Tactical Command & Control
 Hardware & Softwar**

PROJECT
C3A

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) MS C	▲ 1 MS C																															
Operational Assessment					Operational Assessment																											
ABCS Test					ABCS Test																											
Field Test					Field Test																											
(2) IOC					▲ 2 IOC - 5 Aug																											
(3) Materiel Release									▲ 3 Materiel Release - 6 Mar																							
(4) FUE									▲ 4 FUE																							
(5) IOT&E									▲ 5 IOT&E																							
(6) System Evaluation Report													▲ 6 System Evaluation Report																			
(7) FRP													▲ 7 FRP																			

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
C3A

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Continue System Development and Evaluation BLK I and P3I	1-4Q	1-4Q	1-4Q	1-4Q				
Continue/Complete A2C2S Prototype Fabrication and Platform Integration Systems	1-4Q							
Continue System Engineering, Software Integration and Logistics Planning for A2C2S	1-4Q	1-4Q	1-4Q	1-4Q				
Continue Development Testing	1-4Q	1-4Q	1-4Q	1-4Q				
Operational Testing	1-4Q	1-4Q	1-4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604819A - LOSAT					PROJECT 046		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
046 LINE-OF-SIGHT ANTI-TANK (LOSAT) MISSILE	29417	21744	0	0	0	0	0	0	0	61764

A. Mission Description and Budget Item Justification: The LOSAT weapon system consists of a Kinetic Energy Missile (KEM) launcher mounted on a heavy High Mobility Multi-purpose Wheeled Vehicle (HMMWV) chassis. Line-of-Sight Anti-Tank (LOSAT) and the KEM technology provides light forces needed lethality and the foundation for the Future KEM integration. This program focuses on the integration of the LOSAT weapon system into a light, early deployable configuration in order to help remedy the urgent need for the early entry force lethality shortfall against heavy armor. LOSAT offers a highly mobile, near-term, advanced capability for overwhelming armor destruction with a high rate of fire, increased range, and increased force survivability. LOSAT, deployed in the early entry force, will provide the decisive edge to win swiftly with minimum casualties and provides an assault support weapon capability. LOSAT is strategically and tactically deployable, giving Commanders and decision makers greater flexibility. Once in theater, LOSAT is extremely mobile and can be air dropped or sling loaded under CH-47 and UH-60L aircraft. The performance of this hypervelocity kinetic energy missile (velocity of a mile per second) is not affected by the proliferation of emerging threat active protective systems and enhanced reactive armors, which are both rapidly becoming available on the global marketplace. LOSAT was initiated as a DoD-approved Advanced Concept Technology Demonstration (ACTD) program in FY 1998 to position the technology for future acquisition decisions; demonstrate subsystem capabilities in flight tests and dirty battlefield environments; evaluate the utility of the LOSAT technology for the early entry forces; demonstrate an integrated HMMWV-based LOSAT system, in-flight tests, and advanced war fighting experiments; and evaluate affordability issues. The work in this program element is consistent with the Army Science and Technology Master Plan, and the Army Modernization Plan. In December 1999, the Army and OSD funded the LOSAT accelerated advanced development and procurement, by adding additional design activities, reducing risk, completing system qualification testing, and adding additional Operational tests to support transition to limited production of the LOSAT Weapon System.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Accomplished Fabrication of Enhanced Design Prototype Fire Units/Live Fire Units.	6956	0	0	0
Accomplished Supportability Analysis and Demonstration and Logistics Management Information.	5738	0	0	0
Delivered Enhanced Training Simulators and conducted Soldier Training for operational tests.	3892	0	0	0
Perform full Developmental/Operational Tests and Evaluations.	8280	1445	0	0
Perform Live Fire Test and Evaluation (LFTE).	4551	1194	0	0
Logistical documentation/design updates/fabrication of IOTE missiles(10)	0	14249	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604819A - LOSAT

PROJECT
046

Accomplishments/Planned Program B(continued)	FY 2004	FY 2005	FY 2006	FY 2007
Program management and technical support	0	4856	0	0
Totals	29417	21744	0	0

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	22628	0	0
Current Budget (FY 2006/2007 PB)	21744	0	0
Total Adjustments	-884	0	0
Net of Program/Database Changes			
Congressional Program Reductions	-327		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-557		
Adjustments to Budget Years			

<u>C. Other Program Funding Summary</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
H09000 LOSAT	34341	14942	0	0	0	0	0	0	0	49283
0603654A Line-of-Sight Technology Demo	8739	0	0	0	0	0	0	0	0	8739

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604819A - LOSAT

PROJECT

046

D. Acquisition Strategy: The Line-of-Sight Anti-Tank additional development and qualification effort is being conducted in conjunction with the on-going ACTD effort. The ACTD contract awarded in April 1998 was modified in December 2000 to include the System Development and Demonstration (SDD) effort.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604820A - RADAR DEVELOPMENT					PROJECT E10	
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
E10 SENTINEL	0	5851	5080	2547	2647	0	0	0	0	Continuing

A. Mission Description and Budget Item Justification: The Short Range Air Defense (SHORAD) Project Office merged with the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) Project Office on January 11, 2005 to become the Cruise Missile Defense System (CMDS) Project Office. On January 13, 2005, the Program Executive Office (PEO) for Air, Space and Missile Defense (PEO ASMD) which CMDS is assigned to merged with the PEO for Tactical Missiles (PEO TM) to become the PEO for Missiles and Space (PEO MS).

The Sentinel Modernization Program is part of the Missiles and Space System of Systems (SoS). This enables the Cruise Missile Defense Systems (CMDS) weapons to engage these targets at maximum effective range. Sentinel supports Missiles and Space (MS) SoS through efforts which are initiated in FY05. These are Surface Launched Advance Medium Range Air-to-Air Missile (SLAMRAAM) Integration (SI), Mode V (MV), Joint ID (JID) and Composite Sensor Net (CSN).

SLAMRAAM Integration modifies Sentinel to interface with the SLAMRAAM MS Common Software communications network and adds specific SLAMRAAM engagement support capabilities. Current budgeted funds for the Sentinel Program will accomplish initial Sentinel modification. The integration development effort is partially funded.

Mode 5 is a replacement for Mode 4. Mode 5 provides improvements over Mode 4 in Crypto sensitivity, range performance, probability of identification, Friend from Friend identification, lethal interrogation capability and reduced interference with Civil Air Traffic Control Systems.

Joint Identification leverages off of fielded Air Force and Navy Electronic Support Measures (ESM) Technology, to optimize the affordability and effectiveness to address Cruise and Unmanned Aerial Vehicles (UAV) threats. Cutting edge specific emitter identification technology and cruise missile emitter detection will be integrated with Sentinel to provide passive and semi-active target acquisition along with jointly accepted identification capability. Signal processing will be tailored to reduce ESM processing cost by 40 – 50% versus airborne ESM systems by multiplexing processing across emitter bands. This capability improves survivability, effectiveness against air breathing Weapons of Mass Destruction (WMD) delivery systems, and fully supports multi-service SoS sensor and joint identification capability

Composite Sensor Netting is a software and communications link that allows target data to be shared among sensors and the Command, Control, Communications, Computers and Intelligence (C4I) structure to support both hostile identification and sensor resource management. This software and communication link allows a Sentinel radar communication net to effectively exchange target acquisition, tracking and classification information with other Sentinel radars on the battlefield. It improves the ability to cue weapon systems to destroy fixed wing, rotary wing, unmanned aerial vehicles and cruise missiles. When integrated with SLAMARRAM system it improves the accuracy of the missile by providing 3 times the update rate of commands to the missile versus the current system.

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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PROJECT
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Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Initiate ASMD SoS Integration Development (SLAMRAAM/Sentinel SW Integration, Joint ID, Composite Sensor Netting, Mode 5)	0	5851	5080	2547
Totals	0	5851	5080	2547

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	6107	6393	2503
Current Budget (FY 2006/2007 PB)	5851	5080	2547
Total Adjustments	-256	-1313	44
Net of Program/Database Changes			
Congressional Program Reductions	-88		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-168		
Adjustments to Budget Years		-1313	44

Funds realigned FY06 -\$1.313 Million to higher priority requirements and budget realignments.

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C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	ToComp	TotalCost
PE 643869, MEADS	236823	251414	0	0	0	0	0	0	0	488237
PE654869M06, Patriot/MEADS CAP	0	0	288785	326352	454511	510672	510389	490441	0	2581150
PE 273801, PATRIOT PIP	45587	32082	16188	10607	10884	11119	12029	12520	0	151016
PE 654865, PAC-3	151318	61482	0	0	0	0	0	0	0	212800
PE C49100, PATRIOT	616942	487364	489700	494754	466004	471770	0	0	0	3026534
PE C50001, PATRIOT/MEADS CAP	0	0	0	0	88425	64338	423209	663557	0	1239529
SSN C53201, PATRIOT/MEADS GSE	0	0	0	0	56048	62482	97555	230684	0	446769
PE 172419, JLENS	57803	79316	106420	256893	471997	332428	0	0	0	1304857
PE BZ0525, JLENS PRODUCTION	0	0	0	0	0	29153	549707	397776	0	976636
PE 654802, SLAMRAAM	36103	63111	36102	29200	0	0	0	0	0	164516
PE C81001, SLAMRAAM	7397	2440	19315	21970	59273	13124	0	0	0	123519
PE WK 5057, Sentinel Production	20646	7337	8393	15373	25074	31572	34473	32552	0	175420
PE 643327, Integrated Fire Control AMD	40275	0	24961	42736	48894	50930	0	0	0	207796

C. Other Program Funding Summary: This PE is an integral part of the Air, Space and Missile Defense System of Systems (SoS) including Integrated Fire Control, JLENS, Patriot/MEADS Combined Aggregate Program (CAP), SLAMRAAM, JTAGS, SENTINEL, and on-going initiatives to achieve Single Integrated Air Picture (SIAP).

D. Acquisition Strategy: In FY 1998 a Sole Source Cost Plus Award Fee (CPAF) contract was awarded to the Sentinel radar developer/manufacturer for the system design, development (SDD) of an upgraded transmitter.

In FY 2000, a second Sole Source Cost Plus Fixed Fee (CPFF) under the Sentinel Modernization Program was awarded to the Sentinel developer/manufacturer for the SDD of the Enhanced Target, Range, and Classification (ETRAC) kits. The ETRAC SDD contract was executed in three phases taking advantage of already developed items and certain off-the-shelf technologies to minimize risk while ensuring cost, schedule and performance goals are achieved.

In FY 2005, a modification to the current SLAMRAAM System Development and Demonstration contract will be awarded for the Sentinel integration into

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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SLAMRAAM. Sentinel funded a part of the integration effort starting in FY 05. The balance will be funded from other sources. The System Design, Development and Production of Mode 5, Joint Identification and Composite Sensor Netting hardware and will be funded from several contract and government sources.

. In FY 2002, an initial Sole Source Firm Fixed Price (FFP) procurement contract was awarded to Thales Raytheon Systems (TRS) for procurement of Transmitter Mod Kits for installation into the Sentinel Fleet.

In FY 2003, an initial Sole Source Firm Fixed Price (FFP) procurement contract was awarded to TRS to procure and install the ETRAC Mod Kits and the Transmitter Mod kits (procured under a separate contract) into fielded Sentinel fleet.

IN FY 2004, a Sole Source FFP modification to the FY 2003 ETRAC production contract was issued for procurement of an additional twenty-two (22) Kits and installation of twenty (20) kits into the Sentinel fleet

Several Sole Source FFP procurement contracts are planned for award in TRS in FY 05 through FY 13 to procure and install ETRAC System Kits (integration of an upgraded Transmitter Mod Kit and an ETRAC Mod Kit into a single Mod kit) into the remaining Sentinel fleet.

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5 - System Development and Demonstration

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ETRAC System Development	SS/CFFP	Raytheon, CA, Sentinel PM/AMCOM, AL	102729	0		0		0		0	102729	79192
b . Initiate MS SoS Integration Development (SI, JID, MV, CSN)	SS/CPFF	Raytheon, CA Sentinel PM/AMCOM, AL	0	5191	2Q	4329		2128		0	11648	11648
Subtotal:			102729	5191		4329		2128		0	114377	90840

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ETRAC Product Support Services	MIPR/1095	AMCOM, Redstone Arsenal, AL	16930	0		0		0		0	16930	0
Subtotal:			16930	0		0		0		0	16930	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
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PROJECT
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ETRAC IOT&E, KPP Demonstration & other T&E Activities	MIPR/1095	OPTEC, VA; Redstone Technical Test Ctr, redstone Arsenal AI	34599	0		0		0		0	34599	0
Subtotal:			34599	0		0		0		0	34599	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ETRAC Product Manager support	CPFF; MIPR/1095	Raytheon, MA; PM Sentinel/AMCOM, AL ; Vista Tech, AL; O2K Contractor, AL	11398	0		0		0		0	11398	0
b . Initiate MS SoS Integration Development (SI, JID, MV, CSN)	CPFF; MIPR/1095	Sentinel PM, AMCOM, AL; Various SETA Contractors, AL	0	660		751		419		0	1830	1051
Subtotal:			11398	660		751		419		0	13228	1051

Project Total Cost:			165656	5851		5080		2547		0	179134	91891
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604820A - RADAR DEVELOPMENT

PROJECT
E10

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Sentinel SoS Integration:																																
SLAMRAAM Integration																																
Mode V Development/Production																																
Joint ID Development/Production																																
Composite Sensor Netting Development																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604820A - RADAR DEVELOPMENT

PROJECT
E10

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
SLAMRAAM Integration		3-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
Mode V Development/Production			2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	
Joint ID Development/Production			3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Composite Sensor Netting Development		3-4Q	1-4Q	1-4Q	1-4Q	1-4Q		

ETRAC = Enhanced Target Range and Classification

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604822A - General Fund Enterprise Business System (GFEBS)				PROJECT GF5		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
GF5 GENERAL FUND ENTERPRISE BUSINESS SYSTEM (GFEBS)	0	0	71119	61764	63053	30558	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification: The General Fund Business Enterprise System (GFEBS) is in the PRE-MAIS process and will follow the DoD Business Enterprise Architecture which is aligned to the mandated Federal Enterprise Architecture. GFEBS was implemented to fulfill the needs and comply with the Federal Financial Management Improvement Act (FFMIA), The Chief Financial Officers Act of 1990, the Government Performance and Results Act of 1993, the Government Management Reform Act of 1994, and the Clinger-Cohen Act of 1996 and to fulfill the stated mission of the Assistance Secretary of the Army for Financial Management and Management and Comptroller (ASA(FM&C)). GFEBS will replace financial systems over 30 years old like the Standard Finance Systems (STANFINS) and other costly feeder systems which do not allow the Department of Defense (DoD) or the U.S. government achieve an unqualified opinion on its financial statements. GFEBS will become the Department of the Army's new core financial management system for administering its General Fund. GFEBS will be a commercial off-the-shelf (COTS) Enterprise Resource Planning (ERP) system that is certified by the Joint Financial Management Improvement Program (JFMIP) and provides the six core financial functions. GFEBS will allow tactical commanders to make informed decisions on an almost real time system.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
System Concept Exploration and Development	0	0	27358	23727
System Engineering and Technical Support	0	0	32398	30080
System Initiation and Implementation	0	0	4663	0
Project Management	0	0	6700	7957
Totals	0	0	71119	61764

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604822A - General Fund Enterprise Business System (GFEBS)

PROJECT
GF5

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget	0	0	0
Current Budget (FY 2006/2007 PB)	0	71119	61764
Total Adjustments	0	71119	61764
Net of Program/Database Changes			
Congressional Program Reductions			
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years		71119	61764

Change Summary Explanation: Funding: FY 06/07 - Funding increase in support of the General Fund Business Enterprise System (GFEBS) program.

<u>C. Other Program Funding Summary</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 655013316	0	29254	0	0	0	0	0	0	0	29254
OPA, BE4168000	0	0	0	77358	115314	0	0	0	0	192672
OMA, 432612000	0	31800	6900	29600	43000	88700	89300	97600	0	386900

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604822A - General Fund Enterprise Business System (GFEBS)

PROJECT

GF5

D. Acquisition Strategy: GFEBS is being procured as a performance-based acquisition to encourage innovative and creative solutions and to avoid hampering, dictating, or prescribing how the work must be performed. Therefore, the focus of the Statement of Objectives (SOO) is on “what” the Army is trying to achieve instead of how it must be achieved. The use of a SOO is an emerging method that transforms the acquisition process by requiring each of the competing contractors to develop their unique proposed technical approach, work breakdown schedule, project plan and schedule, schedule of deliverable items, performance metrics, performance measurement plan, and quality assurance plan. To achieve its GFEBS project objectives, the Army will use an existing Blanket Purchase Agreement (BPA) to select a System Integrator (SI). The contract period of performance will have 1 base year with 9 option years. DoD through the Department of the Navy has established enterprise agreements for ERP System Integration Services with five qualified SI(s) that are GSA Federal Supply Service (FSS) Schedule holders under the Enterprise Software Initiative (ESI). Once the Army has selected the SI, all contractor work will be performed under the selected SI’s ESI-SI BPA through the award of one task order with several options. Multiple options are anticipated to support each project objective. The products and services described in task orders will be grouped and referenced as Contract Line Item Numbers (CLIN). All CLINs will be awarded on either a Fixed Price basis with performance based incentives and disincentives. The task order and all options exercised will be performance based, containing financial incentive and disincentive provisions. Offerors will be provided performance based metrics and be required to propose performance incentive and disincentive provisions by CLIN in their Quality Assurance Surveillance Plan (QASP) submitted in response to the Request for Quote (RFQ). The QASP elements will be evaluated as part of the evaluation of the Offerors’ proposals.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604822A - General Fund Enterprise Business
System (GFEBS)

PROJECT
GF5

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Concept Exploration/Development	TBD	TBD	0	0		27358	1-4Q	23727	1-4Q	Continue	51085	0
Subtotal:			0	0		27358		23727		Continue	51085	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Engineering and Support	TBD	TBD	0	0		32398	1-4Q	30080	1-4Q	Continue	62478	0
Subtotal:			0	0		32398		30080		Continue	62478	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604822A - General Fund Enterprise Business
System (GFEBS)

PROJECT
GF5

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Initiation and Implementation	TBD	TBD	0	0		4663	1-4Q	0		Continue	4663	0
Subtotal:			0	0		4663		0		Continue	4663	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management Office Services	TBD	TBD	0	0		6700	1-4Q	7957	1-4Q	0	14657	0
Subtotal:			0	0		6700		7957		0	14657	0

Project Total Cost:			0	0		71119		61764		Continue	132883	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604822A - General Fund Enterprise Business System (GFEBs)

PROJECT
GF5

Event Name	FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11				FY 12			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Solicitation Release	[Red bar]																															
(1) MS A		▲																														
Contract Award																																
Project Preparation/Evaluation				■																												
Map/Blueprint/Build Release 1.1				■	■	■	■																									
(2) MS B1							▲																									
Realization - Release 1.2							■	■	■	■	■	■																				
(3) MS B2												▲																				
IOC																																
Release 1.3 - Replace STANFINS																																
IOT&E																																
Full Deployment Decision Review																																
Increment 2: Replace SOMARDS																																
OTA																																
Full Deployment Decision Review 2																																
Hardware Fielding																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604822A - General Fund Enterprise Business System (GFEBs)

PROJECT
GF5

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Contract Solicitation Release		2Q						
MS A - Milestone		2Q						
Contract Award		3Q						
Project Preparation/Evaluation		4Q						
Map/Blueprint/Build Release 1.1		4Q	1-3Q					
MS B1			3Q					
Realization Release 1.2			3-4Q	1-4Q	1Q			
MS B2				2Q				
IOC					1Q			
Release 1.3 - Replace STANFINS					2-4Q			
IOT&E					4Q			
Full Deployment Decision Review						1Q		
Increment 2 Replace SOMARDS					4Q	1-2Q		
OTA						2-3Q		
Full Deployment Decision Review 2						3Q		
Hardware Fielding				2-4Q	1-4Q			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604823A - FIREFINDER

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	23103	21764	46061	69085	61314	78677	55008	30491	0	Continuing
L85 PHOENIX BATTLEFIELD SENSOR SYS AN/TPQ-47	23103	21764	0	0	0	0	0	0	0	Continuing
L86 LIGHTWEIGHT COUNTER MORTAR RADAR (LCMR)	0	0	23877	16677	2801	0	0	0	0	Continuing
L87 LONG RANGE COUNTERFIRE RADAR	0	0	0	0	5066	41285	37130	25404	0	108885
L88 ENHANCED AN/TPQ 36	0	0	22184	52408	53447	37392	17878	5087	0	Continuing

A. Mission Description and Budget Item Justification: This Program funds design, development and test of primary target acquisition and counterfire radars to automatically detect, locate and classify hostile indirect fire weapons (mortars, artillery, rockets, and missiles). This PE directly supports the prioritization, tracking, and locating of targets, and dissemination of that information for simultaneous attack of multiple threats. It provides the Warfighter with continuous and responsive counterfire target acquisition systems for all types and phases of military operations. Project L85, Phoenix Battlefield Sensor System AN/TPQ-47, is being re-structured in FY05 to an alternate contract conclusion due to technical challenges and competing near term radar performance shortfalls identified in Operation Iraqi Freedom (OIF). Project L86, Objective Lightweight Counter Mortar Radar (O-LCMR), will provide 360 degree coverage and be used to detect, locate and report hostile locations of enemy indirect firing systems out to a range of 10 kilometers. Project L87, Long Range Counterfire Radar, was established in response to a need for a longer range, more accurate and less manpower intensive radar. It will provide extended artillery range performance as well as a new capability for missile and rocket detection. Project L88, Enhanced AN/TPQ-36 (EQ-36), is a highly mobile radar system that will leverage the latest in solid state technology design to accelerate technology infusion and increase range while improving False Alarm Rate, reducing obsolescence and increasing reliability. EQ-36 will initially provide 90 degree coverage and extended range, with a spiral development to increase detection capability to 360 degrees. The EQ-36 will be interoperable with Firefinder and future Battle Command Systems.

Justification:

FY2006/2007 funds the development and fabrication of six O-LCMR prototype systems and begins development of operator and maintenance training systems.

FY2006/2007 begins development and fabrication of six EQ-36 prototype systems and begins development of operator and maintenance training systems.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604823A - FIREFINDER

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	18516	10717	5757
Current Budget (FY 2006/2007 PB)	21764	46061	69085
Total Adjustments	3248	35344	63328
Net of Program/Database Changes			
Congressional Program Reductions	-315		
Congressional Rescissions			
Congressional Increases	4200		
Reprogrammings	-12		
SBIR/STTR Transfer	-625		
Adjustments to Budget Years		35344	63328

FY2004 Reprogramming, below threshold reprogramming.

FY2005/2006 funds realigned to support the development of operator and maintenance training system. FY2007 funding was redirected to HQDA higher priority efforts.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604823A - FIREFINDER

PROJECT
L85

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L85 PHOENIX BATTLEFIELD SENSOR SYS AN/TPQ-47	23103	21764	0	0	0	0	0	0	0	Continuing

A. Mission Description and Budget Item Justification: The AN/TPQ-47, popular name "Phoenix Battlefield Sensor System (PBS2)", is being re-structured in FY05 to an alternate contract conclusion due to technical challenges and competing near term radar performance shortfalls identified in OIF. The program will no longer achieve the original threshold technical parameters. Program will conclude with a demonstration to characterize radar performance and a final report.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Develop a Radar Environmental Simulator System (RESS). Efforts include development, continual refinement during system development test, and maintenance.	773	0	0	0
Build, integration and contractor test of System #1. Efforts include design, materials, labor, and contractor acceptance test.	2591	0	0	0
Build, integration and contractor test of System #2. Efforts include design, materials, labor, and contractor acceptance test.	11440	0	0	0
Prime contractor activities to support Developmental Test and Limited User Test. Efforts include contractor conduct of Live Ammunition Tests at Yuma Proving Ground (YPG) and required fixes to hardware/software.	4318	0	0	0
Government Test Costs. Efforts include cost of range times at YPG, gun crews, ammunition and government manpower to support system test.	3981	0	0	0
Prime contractor activities for alternate contract completion. Efforts include preparing radar for demonstration and delivery of final report.	0	7650	0	0
Test costs associated with contractor demonstration at Yuma Proving Ground. Efforts include cost of range times, gun crews and ammunition.	0	1765	0	0
Revise radar strategy. Efforts include preparation of program documentation/decision reviews and support of revised program strategy.	0	12349	0	0
Totals	23103	21764	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)**February 2005**

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604823A - FIREFINDER

PROJECT

L85

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: The Contracting Officer issued a Stop Work Order 24 Sep 04. A Termination Letter was issued 18 Oct 04, but it allowed the contractor the option to submit a proposal for an alternative contract conclusion. The PM and contractor are negotiating that proposal. The MDA authorized the PM to proceed with a Firm Fixed Price (FFP) alternate contract conclusion which will finalize the Government's liability. This alternative approach was deemed the most advantageous to the Government to limit liability and program duration. A contract modification will be issued in 2QFY05 and all efforts will be concluded during this FY.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604823A - FIREFINDER

PROJECT
L85

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Primary Hardware Dev	C/CPIF OTA FFP	Thales-Raytheon Sys, El Segundo CA, Scotland, Forrest MI	159592	7100	2-4Q	0		0		0	166692	0
b . Ancillary Hardware Dev	SS/T&M	Various	5563	0		0		0		0	5563	0
c . Sys Engrg (Contractor)	SS/FP	Various	3035	300	2-4Q	0		0		0	3335	0
d . Sys Engrg (Government)	MIPR	CERDEC, Fort Monmouth, NJ	4039	100	1-4Q	0		0		0	4139	0
e . Software Engineering	C/CPAF	Telos, Lawton, OK	2274	0		0		0		0	2274	0
f . Alternate Radar Strategy			0	11499	1-4Q	0		0		0	11499	0
g . SSEB/MS C	MIPR	Various	227	0		0		0		0	227	0
Subtotal:			174730	18999		0		0		0	193729	0

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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PROJECT
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Support-Government	MIPR	Various	1383	0		0		0		0	1383	0
b . Integrated Logistics Spt (ILS) - Contractor	T&M	Various	589	0		0		0		0	589	0
c . ILS Support-Government	MIPR	CERDEC, Fort Monmouth, NJ	486	0		0		0		0	486	0
d . Configuration Mgmt Spt-Government	MIPR	CERDEC, Fort Monmouth, NJ	874	0		0		0		0	874	0
Subtotal:			3332	0		0		0		0	3332	0

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BUDGET ACTIVITY
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Demonstration	MIPR	Yuma, AZ WSMR, NM	0	1565	3-4Q	0		0		0	1565	0
b . Verification Testing	MIPR	Various	2212	0		0		0		0	2212	0
c . Test Support	MIPR	Various	1755	200	2-4Q	0		0		0	1955	0
Subtotal:			3967	1765		0		0		0	5732	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management - Contractor	C/FP	Various	2717	300	1-4Q	0		0		0	3017	0
b . Program Management - Government Matrix Spt	MIPR	CERDEC, Fort Monmouth, NJ	652	0		0		0		0	652	0
c . Program Management	In House	PM NV/RSTA, Fort Monmouth NJ	3691	700	1-4Q	0		0		0	4391	0
Subtotal:			7060	1000		0		0		0	8060	0

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Project Total Cost:			189089	21764		0		0		0	210853		0
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Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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PROJECT
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Alternate Conclusion Contract		1-4Q						
Receipt of Final Report		4Q						
Support to Alternate Radar Strategy		1-4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604823A - FIREFINDER					PROJECT L86	
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L86 LIGHTWEIGHT COUNTER MORTAR RADAR (LCMR)	0	0	23877	16677	2801	0	0	0	0	Continuing

A. Mission Description and Budget Item Justification: The Objective Lightweight Counter Mortar Radar (O-LCMR) will provide 360 degrees of azimuth coverage and be used to detect, locate, and report hostile locations of enemy indirect firing systems. It will cover a range of 500 meters to 10 kilometers and provide observed fires from friendly units. O-LCMR shall be a digitally connected, day/night mortar, cannon, and rocket locating system. The O-LCMR will be a spiral enhancement to the existing LCMR. The LCMR was originally designed to operate as a stand alone capability for Special Forces and is man portable when disassembled. This capability has been fielded to OIF as a Limited Procurement Urgent (LPU) capability. The RDTE program will transition in FY 2006 from Budget Activity 3, Advanced Technology Development, PE 0603772A to an Army 6.4 program of record.

FY2006/2007 funds development, fabrication, and test of six O-LCMR prototype systems and begins development of operator and maintenance training systems.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Develop/build six O-LCMR prototype systems as required to meet Army Capability Development Document (CDD).	0	0	19468	7941
Prime contractor activities to support Developmental Test and Limited User Test. Efforts include contractor conduct of Live Ammunition Tests at Yuma Proving Ground (YPG) and required fixes to hardware/software.	0	0	1737	2521
Government Test Costs. Efforts include cost of range times at YPG, gun crews, ammunition and government manpower to support system test.	0	0	828	3424
Conduct Milestone C (MS C). Efforts include preparation of program documentation necessary to support a successful MS C.	0	0	0	250
Logistics Development. Efforts include logistics analysis to develop training, System Support Package, Manprint Program, Safety Program, Built-in-Test development, Maintainability Demonstration and Electronic Technical Manuals.	0	0	1844	991
Training Devices. Efforts include design and development of operator and maintenance trainers.	0	0	0	1550
Totals	0	0	23877	16677

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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5 - System Development and Demonstration

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PE: 0603772 Advanced Tactical Computer Science & Sensor Tech (Congressional Plus Up)	0	2500	0	0	0	0	0	0	0	2500
SSN: B05201 Lightweight Counter Mortar	25000	5500	0	20020	43711	44115	12438	10290	0	161074

Radar

C. Acquisition Strategy: The Lightweight Counter Mortar Radar (LCMR) prototype was developed as a SOCOM program under the Office of Special Technology Broad Agency Announcement (BAA). The LCMR Engineering Development Program was also SOCOM funded and turned that concept into a fully functional system. This objective program, O-LCMR, will leverage the SOCOM developed program and serve as a spiral development effort and undergo Developmental Testing (DT) and a Limited User Test (LUT) to support Army's requirements. A determination on the viability of competing the SDD program will be made based on the results of a Request For Information (RFI) released Dec 04. SDD contract award is planned for 1QFY06, and the results of the DT/LUT will support a MS C Decision in FY07.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Primary Hardware Dev	TBD	TBD	0	0		4860	1-4Q	540	1-4Q	0	5400	0
b . Ancillary Hardware	TBD	Various	0	0		2564	1-2Q	1108	1-2Q	0	3672	0
c . Non Recurring Engineering	TBD	TBD	0	0		11489	1-4Q	6871	1-4Q	0	18360	0
d . Systems Engineering Contractor	SS/T&M	Various	0	0		880	1Q	653	1Q	168	1701	0
e . Systems Engineering Government	MIPR	CERDEC, Fort Monmouth, NJ	0	0		296	1Q	296	1Q	0	592	0
f . Logistics Development	TBD	TBD	0	0		1391	1-4Q	700	1-4Q	0	2091	0
g . MS C	MIPR	Various	0	0		0		250	1-2Q	0	250	0
h . Trainer Devices	TBD	TBD	0	0		0		1550	2Q	2440	3990	0
Subtotal:			0	0		21480		11968		2608	36056	0

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Support (Government)	MIPR	Various	0	0		123	1Q	51	1Q	0	174	0
b . Integrated Logistics Support (ILS) (Government)	MIPR	CERDEC, Fort Monmouth, NJ	0	0		252	1Q	175	1Q	0	427	0
Subtotal:			0	0		375		226		0	601	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering Test	MIPR	Yuma, AZ	0	0		128	3Q	500	1Q	0	628	0
b . Developmental Test & Evaluation	MIPR	Yuma, AZ/WSMR, NM	0	0		150	3Q	2150	1-2Q	0	2300	0
c . Limited User Test	MIPR	Various	0	0		0		600	2Q	0	600	0
d . Test Support	MIPR	Various	0	0		227	2Q	194	1-2Q	0	421	0
Subtotal:			0	0		505		3444		0	3949	0

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management (Contractor)	C/FP	Various	0	0		188	1Q	75	1Q	0	263	0
b . Program Management	In House	PM NV/RSTA, Fort Monmouth, NJ	0	0		575	1-4Q	503	1-4Q	143	1221	0
c . Program Management (Government Matrix)	MIPR	CERDEC, Fort Monmouth, NJ	0	0		754	1Q	461	1Q	50	1265	0
Subtotal:			0	0		1517		1039		193	2749	0
Project Total Cost:			0	0		23877		16677		2801	43355	0

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604823A - FIREFINDER

PROJECT
L86

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
MS B			1Q					
Systems Development and Demonstration (SDD)			1-4Q	1-3Q				
Engineering Test/Development Test			4Q	1-2Q				
Conduct Limited User Test (LUT)				3Q				
Milestone C				3Q				
Prototype Initial Operating Capability (IOC)				4Q				
Develop Training Devices				3-4Q	1-2Q			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604823A - FIREFINDER

PROJECT
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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L88 ENHANCED AN/TPQ 36	0	0	22184	52408	53447	37392	17878	5087	0	Continuing

A. Mission Description and Budget Item Justification: The Enhanced AN/TPQ-36 (EQ-36) is a highly mobile radar system designed to classify targets for automatic first-round location of mortar, cannon and rocket enemy fires and to provide observed fires from friendly units. Initially, the EQ-36 will provide 90 degree coverage and extended range, with a spiral development to 360 degree coverage. The EQ-36 will provide 35KM range coverage for mortars/cannon and 50KM for rockets. This program will leverage the latest in solid state technology design to provide increased range as well as increased reliability, availability, and maintainability. The EQ-36 will provide digital communications and be interoperable with Firefinder and future Battle Command Systems. The system will be capable of drive-on/drive off C-130 and will be HMMWV class vehicle mountable.

FY2006/2007 begins development and fabrication of six Enhanced AN/TPQ-36 prototype systems. Development of operator and maintenance training systems will begin in FY2007.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Develop/build six Enhanced AN/TPQ-36 prototype systems. Efforts include non-recurring systems engineering, procurement of hardware, software development and system integration.	0	0	18096	34434
Prime contractor test activities. Efforts include conduct of contractor Live Ammunition Testing at Yuma Proving Ground (YPG), support to Government Developmental and Operational Testing and any required modifications/fixes to hardware and software.	0	0	790	6288
Government test activities. Efforts include cost of range time at YPG, gun crews, ammunition, and manpower to support system test.	0	0	552	5495
Interoperability. Efforts include systems engineering required to assure interoperability with other Firefinder systems and future Battle Command Systems.	0	0	1664	3500
Logistics. Efforts include development of logistics documentation such as training and System Support Packages, Manprint, Safety, Electronic Technical Manuals, Built-in-Test, and conduct of a Maintainability Demonstration.	0	0	1082	1891
Training Devices. Efforts include design and development of Operator and Maintenance trainers.	0	0	0	800
Totals	0	0	22184	52408

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
B05310 Enhanced AN/TPQ-36	0	0	0	0	15389	71166	78742	75120	0	240417

C. Acquisition Strategy: The Enhanced AN/TPQ-36 (EQ-36) will leverage technology developed in the Multi-Mission Radar Advanced Technology Objective (ATO) program to incorporate a solid state antenna into the AN/TPQ-36. A Request For Information (RFI) will be released in 2QFY05 to assess technology readiness and viability of competition in industry. SDD contract award is planned NLT 1QFY06 following a Milestone B Approval.

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BUDGET ACTIVITY
5 - System Development and Demonstration

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PROJECT
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Primary Hardware	TBD	TBD	0	0		10400	1-4Q	28000	1-4Q	Continue	38400	0
b . Ancillary Hardware	TBD	Various	0	0		2290	1-4Q	4039	1-2Q	Continue	6329	0
c . Non Recurring Engineering	TBD	TBD	0	0		5564	1-4Q	12480	1-4Q	Continue	18044	0
d . Systems Engineering (Contractor)	SS/T&M	Various	0	0		996	1Q	2190	1Q	Continue	3186	0
e . Systems Engineering (Government)	MIPR	CERDEC, Fort Monmouth, NJ	0	0		296	1Q	296	1Q	Continue	592	0
f . Logistics Development	TBD	TBD	0	0		650	1-4Q	800	1-4Q	Continue	1450	0
g . Training Devices	TBD	TBD	0	0		0		800	3-4Q	Continue	800	0
			0	0		20196		48605		Continue	68801	0
Subtotal:												

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
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PROJECT
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Support (Government)	MIPR	Various	0	0		137	1Q	209	1Q	Continue	346	0
b . Integrated Logistics Support (ILS) Contractor	MIPR	CERDEC, Fort Monmouth, NJ	0	0		252	1Q	0		Continue	252	0
Subtotal:			0	0		389		209		Continue	598	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering Test (Contractor)	MIPR	Yuma, AZ	0	0		0		400	2-3Q	Continue	400	0
b . Development & Evaluation Test (Government)	MIPR	Yuma, AZ, WSMR, NM	0	0		0		800	3Q	Continue	800	0
c . Test Support	MIPR	Various	0	0		276	2Q	343	1-2Q	Continue	619	0
Subtotal:			0	0		276		1543		Continue	1819	0

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management (Contractor)	C/FP	Various	0	0		213	1Q	326	1Q	Continue	539	0
b . Program Management (Government)	In House	PM NV/RSTA, Fort Monmouth, NJ	0	0		720	1-4Q	1275	1-4Q	Continue	1995	0
c . Program Management (Matrix)	MIPR	CERDEC, Fort Monmouth, NJ	0	0		390	1Q	450	1Q	Continue	840	0
Subtotal:			0	0		1323		2051		Continue	3374	0
Project Total Cost:			0	0		22184		52408		Continue	74592	0

Schedule Detail (R4a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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PROJECT
L88

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
MS B			1Q					
Contract Award			1Q					
Systems Development and Demonstration (SDD)			1-4Q	1-4Q	1-4Q	1-4Q	3Q	
Engineering Test/DT & OT (90 Degrees)				3-4Q	1-3Q			
Prototype IOC (90 Degrees)					4Q			
Engineering Test/DT & OT (360 Degrees)						2-4Q	1-2Q	
Prototype IOC (360 Degrees)							3Q	
MS C							3Q	
Develop Training Devices				4Q	1-4Q	1-4Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604827A - Soldier Systems - Warrior Dem/Val

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	0	57818	27086	29935	29927	41877	46842	0	233485
S56 MOUNTED WARRIOR	0	0	7600	0	0	0	0	0	0	7600
S57 LAND WARRIOR	0	0	50218	27086	29935	29927	41877	46842	0	225885

A. Mission Description and Budget Item Justification: Not applicable for this item.

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	0	0	0
Current Budget (FY 2006/2007 PB)	0	57818	27086
Total Adjustments	0	57818	27086

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604827A - Soldier Systems - Warrior Dem/Val

PROJECT
S56

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S56 MOUNTED WARRIOR	0	0	7600	0	0	0	0	0	0	7600

A. Mission Description and Budget Item Justification: The Army has moved funds from PE 0604713A-680 effective FY06. Mounted Warrior (MW) provides combat crewmembers and vehicle commanders in the Current and Future force with increased mission effectiveness on the network centric battlefield in the areas of lethality, command and control, communications, survivability, mobility, and sustainability. MW Soldier Systems (MWSS) will provide the combat commander increased capabilities to conduct offensive and defensive operations by providing uninterrupted viewing of their immediate surroundings while remaining connected to on-board platform C4I capabilities, thereby providing crews with continuous situational awareness. MWSS Helmet Mounted Display extends fire control information to vehicle commanders while they are standing up in the hatch, or dismounted allowing them to maintain immediate situational awareness of their direct battle space, while simultaneously controlling inter-netted fires, vehicle, or dismounted soldiers. MWSS will provide remote digital connectivity to the Force XXI Battle command Brigade and Below (FBCB2) information system via the vehicles C4I capabilities. The MWSS will maximize crew mobility, providing hands free, tetherless communications.

Prior to FY06 this funding was under PE 0604713A, Project 680.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY2006 Planned Program: Continue developmental engineering, prototype manufacturing and systems engineering and program management support for Battalion quantity of Mounted Warrior.	0	0	7600	0
Totals	0	0	7600	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0604827A - Soldier Systems - Warrior Dem/Val

PROJECT
S56

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0604713A, D680, Mounted Warrior	0	2685	0	0	0	0	0	0	0	2685
OPA 3, M80600, Mounted Warrior	0	0	1600	0	0	0	0	0	0	1600
RDTE, 0604713A, D667, Land Warrior	78183	72974	0	0	0	0	0	0	0	151157
RDTE, 0604827A, S57, Land Warrior	0	0	50218	27086	29935	29927	41877	46842	Continuing	Continuing
RDTE, 0303001, DJ50, Future Warrior Technology	43806	49143	56034	40286	44956	44998	42526	43976	Continuing	Continuing
OPA 4, MS3610, Land Warrior Initial Spares	643	708	492	1574	1622	1613	629	632	Continuing	Continuing
OPA 3, M80500, Land Warrior	1538	8862	35700	21198	49066	70884	28680	3087	Continuing	Continuing

C. Acquisition Strategy: The Army has moved funds from PE 0604713A-680 effective FY06. The MW program provides the spiral fielding of mature technologies and advanced capabilities to meet the needs of the Combat Vehicle Crewman (CVC). The first spiral will equip a Stryker battalion with mature/existing technologies to be used to develop tactics, techniques and procedures (TTPs), which will be used to define the requirements for future spirals.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604827A - Soldier Systems - Warrior Dem/Val

PROJECT
S56

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Develop Mounted Warrior technologies	TBD	TBD	0	0		5852	2Q	0		0	5852	0
Subtotal:			0	0		5852		0		0	5852	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Mounted Warrior Program Support	OGA, MIPR	Various	0	0		600	1-4Q	0		0	600	0
Subtotal:			0	0		600		0		0	600	0

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0604827A - Soldier Systems - Warrior Dem/Val

PROJECT
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Soldier Warrior oversight of MW program	In-House/Task Order	PM Soldier Warrior, Ft. Belvoir, VA	0	0		1148	1-4Q	0		0	1148	0
Subtotal:			0	0		1148		0		0	1148	0

Project Total Cost:			0	0		7600		0		0	7600	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604827A - Soldier Systems - Warrior Dem/Val

PROJECT
S56

Event Name	FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11				FY 12			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Heads-Up Display Development/Fabrication																																
MW Development																																
MW Initiate Long Leads																																
MW Limited Testing & Evaluation																																
(1) Stryker BN Equipped																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604827A - Soldier Systems - Warrior Dem/Val

PROJECT
S56

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Heads-up Display Development/Fabrication		2-4Q						
MW Development		2-4Q						
MW Initiate Long Leads		3-4Q	1-2Q					
MW Limited T & E		3-4Q	1-2Q					
(1) Stryker BN equipped			3Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604827A - Soldier Systems - Warrior Dem/Val

PROJECT
S57

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S57 LAND WARRIOR	0	0	50218	27086	29935	29927	41877	46842	0	225885

A. Mission Description and Budget Item Justification: The Army has moved funds from PE 0604713A-667 effective FY06. In an effort to comply with Congressional intent and to leverage from the success of current developed Land Warrior (LW) components, the Army has refocused the LW program to spiral out Dismounted Battle Command System (DBCS) capabilities (e.g. Commander's Digital Assistant (CDA), Enhanced Position Location and Reporting System (EPLRS) MicroLight Radio) to Soldiers in the field for near-term capability. Accelerating components of the Land Warrior System also addresses the Soldier component of Future Combat System (FCS). Land Warrior integrated ensemble systems, to include applicable long-lead items, will be produced for a Stryker Battalion for evaluation purposes in the Fiscal Year 2006 (FY06) timeframe. The Ground Soldier System (GSS) will leverage the technological advancements transitioned from the Science and Technology (S&T) community including Future Force Warrior (FFW) to develop the Ground Soldier capability for FCS. The LW program and FFW Advanced Technology Demonstration (ATD) have made progress in the consolidating in accordance with the FY05 Appropriations Language and a report has been submitted to Congress.

Prior to FY06 this funding was under PE 0604713A, Project 667.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY06: Prime contractor continues development engineering efforts for DBCS capabilities and for the LW integrated ensemble systems for the Stryker Battalion.	0	0	32284	11492
FY07: Funds are for the Prime contractor developing one company's worth of prototype devices for DBCS capabilities and for continuing development engineering efforts for the LW integrated ensemble systems for the Stryker Battalion. These efforts provide a segue for initial development of the Ground Soldier capability for FCS.				
FY06: Funds will be used for Operational testing for the DBCS capability efforts and for the LW integrated ensemble systems for the Stryker Battalion.	0	0	7215	5350
FY07: Funds will be used to perform developmental and operational testing on the DBCS capability for Light Forces.				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604827A - Soldier Systems - Warrior Dem/Val

PROJECT
S57

Accomplishments/Planned Program (continued)

FY06 and FY07: Funds will be used for program management and systems engineering support for overall program efforts. Continue minimal operation of PM Land Warrior - Fort Monmouth, and maintain appropriate activity at PM Land Warrior - Fort Bragg. Program development and execution of Memoranda of Agreement (MOAs) and support agreements with other PMs related to DBCS and FCS capabilities. Conduct technical and program reviews for DA Level In Process Reviews (IPR), ASARC Milestone preparations, develop, maintain, report out on required ACAT 1 program documentation requirements. Support NATO Land Group 3 and other partnered countries to ensure compatibility with potential multinational military operations.

FY 2004	FY 2005	FY 2006	FY 2007
0	0	10719	10244
0	0	50218	27086

Totals

B. Other Program Funding Summary

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0604713A, D667, Land Warrior	78183	72974	0	0	0	0	0	0	0	151157
OPA 3, M80500, Land Warrior	1538	8862	35700	21198	49066	70884	28680	3087	Continuing	Continuing
OPA 4, MS3610, Land Warrior Initial Spares	643	708	492	1574	1622	1613	629	632	Continuing	Continuing
RDTE, 0603001, DJ50, Future Warrior Technology Insertion	43806	49143	56034	40286	44956	44998	42526	43976	Continuing	Continuing
RDTE, 0604817A, D902 Combat Identification	8021	0	0	0	0	0	0	0	0	8021
RDTE, 0604713A, Mounted Warrior	0	2685	0	0	0	0	0	0	0	2685
RDTE, 0604827, S56, Mounted Warrior	0	0	7600	0	0	0	0	0	0	7600
OPA 3, M80600, Mounted Warrior	0	0	1600	0	0	0	0	0	0	1600

C. Acquisition Strategy: The Army has moved funds from PE 0604713A-667 effective FY06. Funds are under PE 0604827A-S57 after FY 2005. Efforts are refocused as LW ramps down development engineering and integration for DBCS capabilities, and ramps up development engineering for the Soldier Component of the Future Combat System (FCS) Unit of Action(UA). In an effort to comply with Congressional intent and to leverage from the success of current developed Land Warrior (LW) components, the Army has refocused the LW program to spiral out Dismounted Battle Command System (DBCS) capabilities (e.g. Commander's Digital Assistant (CDA), Enhanced Position Location and Reporting System (EPLRS) MicroLight Radio) to Soldiers in the field for near-term capability. Accelerating components of the Land Warrior System also addresses the Soldier component of Future Combat System (FCS). Land Warrior integrated ensemble systems, to include applicable long-lead items, will be produced for a Stryker Battalion for evaluation purposes in the Fiscal Year 2006 (FY06) timeframe.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604827A - Soldier Systems - Warrior Dem/Val

PROJECT

S57

The Ground Soldier System (GSS) will leverage the technological advancements transitioned from the Science and Technology (S&T) community including Future Force Warrior (FFW) to develop the Ground Soldier capability for FCS. The LW program and FFW Advanced Technology Demonstration (ATD) have made progress in the consolidating in accordance with the FY05 Appropriations Language and a report has been submitted to Congress.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604827A - Soldier Systems - Warrior Dem/Val

PROJECT
S57

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Develop DBCS capabilities, LW integrated ensemble systems, and GSS capability	CPFF	GDDS, Scottsdale, Arizona	0	0		32284	1-4Q	11492	1-4Q	Continue	43776	0
Subtotal:			0	0		32284		11492		Continue	43776	0

Remarks: Award dates covering multiple quarters reflect multiple awards.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Modern Tech Inc - Support Contractors	Task Order	Modern Tech Inc, Springfield, VA	0	0		2500	1-4Q	2500	1-4Q	0	5000	0
b . TSM, PM Land Warrior North Support, and others	OGA, MIPR	various	0	0		1000	1-4Q	1000	1-4Q	0	2000	0
Subtotal:			0	0		3500		3500		0	7000	0

Remarks: Buys government and contract engineering and logistical support for overall program support.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604827A - Soldier Systems - Warrior Dem/Val

PROJECT
S57

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various Testing Organizations	OGA, MIPR	ATC, TTC/YPG/DTC/EPG/ ARL-SLAD, etc	0	0		7215	1-4Q	5350	1-4Q	0	12565	0
Subtotal:			0	0		7215		5350		0	12565	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Soldier Warrior - oversight of LW program	In-House Task Order	Various	0	0		7219	1-4Q	6744	1-4Q	0	13963	0
Subtotal:			0	0		7219		6744		0	13963	0

Remarks: Award dates covering multiple quarters reflect multiple awards.

Project Total Cost:			0	0		50218		27086		Continue	77304	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604827A - Soldier Systems - Warrior Dem/Val

PROJECT
S57

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) DBCS Critical Design Review					▲ DBCS CDR																											
DBCS System Development & Demo									■ DBCS System Development & Demo																							
DBCS Testing									■ DBCS Testing																							
(2) DBCS Milestone C									▲ DBCS MS C																							
DBCS Production & Deployment													DBCS Production & Deployment																			
DBCS Operational Test													■ DBCS OT																			
(3) DBCS First Unit Equipped													▲ DBCS FUE																			
LW Stryker System Development									■ LW Stryker System Development																							
LW Stryker Initiate Long Leads									■ LW Stryker Long Leads																							
LW Stryker Limited Testing & Evaluation									■ LW Stryker Limited T & E																							
(4) Stryker BN Equipped									▲ Stryker BN Equipped																							
(5) GSS Milestone B									▲ GSS MS B																							
GSS System Development & Demo													System Development & Demo																			
(6) GSS Milestone C																					▲ GSS MS C LRIP											

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604827A - Soldier Systems - Warrior Dem/Val

PROJECT
S57

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
DBCS CDR		2Q						
DBCS System Development & Demo		2-4Q						
DBCS Testing		4Q	1Q					
DBCS MS C		4Q						
DBCS Production & Deployment		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
DBCS Operational Test			3Q					
DBCS FUE			3Q					
LW Stryker Development		2-4Q						
LW Stryker Initiate Long Leads		4Q	1-3Q					
LW Stryker Limited Testing & Evaluation		4Q	1-3Q					
Stryker BN Equipped			3Q					
GSS MS B			4Q					
GSS System Development & Demo			4Q	1-4Q	1-4Q	1-2Q		
GSS MS C LRIP					4Q			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604854A - Artillery Systems - EMD

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	31174	12022	5476	1625	5918	5528	5684	0	0	99068
509 LIGHTWEIGHT 155M HOWITZER	30629	8403	677	0	5918	5528	5684	0	0	82295
516 PALADIN/FAASV	545	3619	4799	1625	0	0	0	0	0	16773

A. Mission Description and Budget Item Justification: This program element supports the Joint Light Weight 155mm Howitzer (LW155) and the Paladin/FAASV Improvement programs.

The LW155, a joint program with the Marine Corps, provides the replacement for the current 1970's vintage M198, 155mm Towed Howitzer. The LW155 provides significant improvement in strategic and tactical mobility over the M198. The Army portion of the joint development is the Towed Artillery Digitization (TAD). TAD is the digital fire control system for the LW155. TAD provides increased accuracy, survivability, and lethality for Army and USMC 155mm Towed Artillery. The LW155 will be the first towed platform capable of firing the Excalibur precision munition, which will provide precision strike capability out to ranges of 40 kilometers with 10 meter accuracy.

The Paladin/FAASV project integrates several system improvements that provide for: stowage and automated dispensing of M231/M232, Modular Artillery Charge System (MACS) that is displacing the current propelling charges; the Graphical User Interface (GUI) software; the Defense Advanced GPS Receiver (DAGR); and upgrading components of the Paladin Digital Fire Control System (PDFCS) to avoid obsolescence, as well as develop and integrate XM982 Extended Range Projectile requirements in the PDFCS. In addition, other system improvements include the battlefield digitization trainer, the direct drive generator, and development of the Paladin Operations Center Vehicle (Pal OCV). The system improvements provide significantly improved mission effectiveness, increased reliability, maintainability, supportability, and Battle Command on-the-move, as well as reduced life cycle costs.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604854A - Artillery Systems - EMD

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	9550	1389	0
Current Budget (FY 2006/2007 PB)	12022	5476	1625
Total Adjustments	2472	4087	1625
Net of Program/Database Changes			
Congressional Program Reductions	-182		
Congressional Rescissions			
Congressional Increases	3000		
Reprogrammings			
SBIR/STTR Transfer	-346		
Adjustments to Budget Years		4087	1625

FY06 (\$4,087,000.) and FY07 (\$1,625,000.) increased to support Paladin/Excalibur Integration.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604854A - Artillery Systems - EMD

PROJECT
516

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
516 PALADIN/FAASV	545	3619	4799	1625	0	0	0	0	0	16773

A. Mission Description and Budget Item Justification: The Paladin/FAASV project allows for integration of several system improvements which will provide for: development of Battlefield Digitization Trainer software, and development and integration of the EXCALIBUR (XM982) extended Range Projectile requirements into the Paladin Digital Fire Control System (PDFCS). These system improvements provide significantly improved mission effectiveness, increased reliability, maintainability and supportability, as well as reduced life cycle costs and obsolescence (e.g. Battlefield Digitization Trainer software development will modernize the training system to match the current fielded vehicle's fire control system, and Integration of EXCALIBUR (XM982) requirements into the PDFCS allows the Paladin to accept EXCALIBUR (XM982) fire missions.) FY05 funding in the amount of \$3M for EXCALIBUR development and Integration into the PDFCS was a Congressional Plus-Up.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Develop and integrate the EXCALIBUR (XM982) Extended Range Projectile requirements into the Paladin Digital Fire Control System	0	2800	4497	1519
Program management of Paladin/FAASV program	0	221	302	106
Non Recurring Development Engineering of Government and STS contractor and System Testing for an improved Travel Lock Actuator Device	530	0	0	0
Develop Battlefield Digitization Trainer software which combines the current Paladin Fire Control PC trainer with the Force XX1 Battle Command Brigade and Below (FBCB2) Digitization trainer. This combined package will allow for realistic classroom training for the First Digitized Corps and the Counter Attack Corps.	0	598	0	0
Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR)	15	0	0	0
Totals	545	3619	4799	1625

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604854A - Artillery Systems - EMD

PROJECT
516

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PA, WTCV, GA0400 Paladin	34335	18279	14801	29110	33929	42883	26452	18259	0	218048
PA, WTCV, GA8010 FAASV PIP	10900	7266	6439	0	0	0	0	0	0	24605
OMA, FAASV Recap, MDEP RR17	14248	13960	15090	0	0	0	0	0	0	43298
OMA, FAASV SDO, MDEP RR17	321	149	150	0	0	0	0	0	0	620

C. Acquisition Strategy: The Paladin/FAASV project will leverage both Government and Contractor capabilities to accomplish the development of the Paladin/FAASV system improvement projects. Government in-house engineering will perform some component level design and system integration. Final System Level Testing will be performed by Other Government Agencies (OGA). Competitive contracts will be used for many of the component level design and hardware fabrication. To the extent possible, maximum use of existing commercial off-the-shelf hardware and software will be utilized.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604854A - Artillery Systems - EMD

PROJECT
516

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Component Design and Software Development	ESTS	Northrop Grumman, Carson, CA	4825	1557	2Q	600	2Q	319	2Q	0	7301	6095
b . System Integration	STS	UDLP, York Pa	4304	200	2Q	3000	2Q	0		0	7504	7504
c . TDP Development	MIPR	Other Gov't Agencies	452	0		0		0		0	452	510
d . Software Development & System Integration	MIPR	TACOM-ARDEC, Picatinny, NJ	0	1144	2Q	600	2Q	500	2Q	0	2244	2244
e . Misc Other Gov't Agencies	TBD	Other Gov't Agencies	0	497	2Q	297	2Q	0		0	794	794
Subtotal:			9581	3398		4497		819		0	18295	17147

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604854A - Artillery Systems - EMD

PROJECT
516

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Logistics	MIPR	TACOM-ACALA, Moline, IL	229	0		0		0		0	229	370
Subtotal:			229	0		0		0		0	229	370

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Component Level Testing	MIPR	TACOM-ARDEC, Picatinny, NJ	953	0		0		0		0	953	1158
b . System Level Testing	MIPR	Various OGAs	930	0		0		700	3Q	0	1630	4022
Subtotal:			1883	0		0		700		0	2583	5180

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604854A - Artillery Systems - EMD

PROJECT

516

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PMO Support	NA	PM Paladin/FAASV, Picatinny, NJ	627	221	1Q	302	1-2Q	106	1Q	0	1256	1215
Subtotal:			627	221		302		106		0	1256	1215

Project Total Cost:			12320	3619		4799		1625		0	22363	23912
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Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604854A - Artillery Systems - EMD

PROJECT
516

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Award Contract for Development of Travel Lock Acuator Device	3Q							
Award Contract for sys integration of Paladin Battlefield Digitization Trainer and Excalibur SW		2Q						
Perform sys integr & engr support of the Paladin Battlefield Digitization Trainer & Excalibur SW		2-4Q						
Award OGA for Software Dev of XM982 requirements into the Paladin Digital Fire Control System			1Q					
Award Contract to Develop and Integrate the XM982 rqmts into the Paladin Digital Fire Control Sys			2Q					
Perform Development and Integration of XM982 requirements into the Paladin Digital Fire Control Sys.			1-4Q					
Award Contract for Integration of XM982 rqmts into the Paladin Digital Fire Control System.				2Q				
Perform Integration of XM982 requirements into Paladin Digital Fire Control System.				1-3Q				
Award OGA for Testing of XM982 requirements in the Paladin Digital Fire Control System.				3Q				
Perform Testing of XM982 requirements in the Paladin Digital Fire Control System.				3-4Q				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604865A - Patriot PAC-3 Theater Missile Defense Acq - EMD					PROJECT 01C		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
01C PATRIOT ADVANCED CAPABILITY (PAC) - 3	156827	61482	0	0	0	0	0	0	0	212800

A. Mission Description and Budget Item Justification: Patriot is a mobile, Unit of Employment air defense system which uses guided missiles to simultaneously engage and destroy multiple target types at varying ranges. The Patriot Advanced Capability 3 (PAC-3) Upgrade Program is the latest evolution of the phased materiel change improvement program to Patriot. The materiel changes will provide improved performance across the spectrum for system and threat intercept performance. In addition to modernization of the ground support equipment, funding resources the PAC-3 and Missile Segment Enhancement (MSE) missile design providing a high velocity, hit to kill, surface to air missile with the range, accuracy, and lethality necessary to effectively intercept and destroy tactical missiles with Nuclear Biological Chemical/High Explosive (NBC/HE) warheads and air breathing threats. The full capability will provide defense against short to medium range theater ballistic missiles (TBMs), cruise missiles (CMs), unmanned aerial vehicles (UAVs) and other air breathing threats as part of the Ballistic Missile Defense (BMD) systems, a multi-layered Theater Air and Missile Defense Architecture. In support of achieving full air and missile defense capability, this PE funds the improvement of connectivity and situational awareness within the Battle Management Command, Control, Communications, Computers and Intelligence (BMC4I) through interaction and cooperation with the Air Defense Command and Control System to enable functionality with MEADS and other air defense systems. This PE is an integral part of the Program Executive Office (PEO) Missile and Space (MS) System of Systems (SOS).

Note: The FY06/07 budget combines the PAC-3/MEADS program based on a Milestone B decision 1 July 2004. The Army revised the MEADS acquisition strategy to combine management, development, and fielding of both the MEADS and Patriot systems. The Patriot/MEADS Combined Aggregate Program (CAP) will provide for the evolution of the Patriot/PAC-3 system to the MEADS objective system through the early incremental introduction of selected MEADS Major End Items. This approach provides for earlier fielding of enhanced air and missile defense capabilities across the currently fielded force to counter the evolving threat and leverage the knowledge gained in the development and fielding of the Patriot System into the MEADS program. The PAC-3 missile is the baseline missile for the MEADS system. The MSE missile, which provides for greater ranges, will be the objective missile for the system. PAC-3 RDTE funding has been combined with MEADS RDTE funding under PE 0604869A for FY 06 and beyond.

On January 13, 2005, the Program Executive Office (PEO), Air, Space and Missile Defense (ASMD) merged with the PEO, Tactical Missiles to become the PEO, Missiles and Space.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604865A - Patriot PAC-3 Theater Missile Defense Acq - EMD	PROJECT 01C
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<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Continue follow-on Block test program.	40925	13578	0	0
Evolutionary Development.	15271	21900	0	0
Missile System Enhancement (MSE) Development	100631	26004	0	0
Totals	156827	61482	0	0

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	64178	21415	29386
Current Budget (FY 2006/2007 PB)	61482	0	0
Total Adjustments	-2696	-21415	-29386
Net of Program/Database Changes			
Congressional Program Reductions	-929		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-1767		
Adjustments to Budget Years		-21415	-29386

FY06/07 funds transferred to the Patriot/MEADS Combined Aggregate Program (CAP), PE 0604869A.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604865A - Patriot PAC-3 Theater Missile
Defense Acq - EMD

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C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	ToComp	TotalCost
PE 0603869 MEADS	236823	251414	0	0	0	0	0	0	0	488237
PE 0604869 Patriot/MEADS Combined Aggregate Program (CAP)	0	0	288785	326352	454511	510672	510389	490441	0	2581150
PE 0203801, Patriot Product Improvement	45587	32082	16188	10607	10884	11119	12029	12520	Continue	Continue
SSN C49100, Patriot System	616942	487364	489700	494754	466004	471770	0	0	0	3026534
SSN C50001, Patriot/MEADS CAP	0	0	0	0	88425	64338	423209	663557	22957360	24196889
PE 0102419, JLENS	57803	79316	106420	256893	471997	332428	0	0	0	1304857
SSN BZ0525, JLENS Production, OPA	38300	0	0	0	0	764	14957	11226	0	65247
PE 0604802, SLAMRAAM	36103	63111	36102	29200	0	0	0	0	0	164516
SSN C81001, SLAMRAAM	7397	2440	19315	21970	59273	13124	0	0	0	123519
PE 0604820, SENTINEL	0	5851	5080	2547	2647	0	0	0	0	16125
SSN WK5057, OPA, SENTINEL Production	20646	7337	8393	15373	25074	31572	34473	32552	0	175420
PE 0603327, Project S23, Integrated Fire Control AMD	40275	0	24961	42736	48894	50930	0	0	0	207796

C. Other Program Funding Summary: This PE is an integral part of the PEO, Missiles and Space System of Systems (SoS) including Integrated Fire Control, JLENS, Patriot/MEADS Combined Aggregate Program (CAP), SLAMRAAM, JTAGS, SENTINEL, and on-going initiatives to achieve Single Integrated Air Picture (SIAP).

D. Acquisition Strategy: The design objective of the Patriot system is to provide an element of an integrated Ballistic Missile Defense system capable of being modified to cope with the evolving threat. This strategy minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems. The Patriot program consists of two interrelated acquisition programs - the Patriot PAC-3 Growth Program and the PAC-3 Missile Program. Growth Program modifications are grouped into configurations which are fielded in the same time frame as they technically mature. However, incremental increases in performance are determined for each configuration in order to provide benchmarks for configuration testing and for the development of user doctrine and tactics. This incremental approach to fielding will continue through the CAP as Patriot is evolved to MEADS. The PAC-3 Missile Program focuses on developing, fabricating and testing the high velocity, hit to kill, surface to air missile and associated ground support equipment to provide essential increases in battle space, accuracy, lethality and firepower to

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counter and destroy evolving air defense threats. The missile performance is demonstrated through a series of flight tests and modeling and simulation activities. PAC-3 Block Evolutionary development efforts will further improve system interoperability, commonality, and capabilities against emerging and reactive threats. The Army has revised the MEADS acquisition strategy to combine management, development, and fielding of both the MEADS and Patriot systems. The Patriot/MEADS combined aggregate program will provide for the evolution of the Patriot/PAC-3 system to the MEADS objective system through the early introduction of the MEADS Major End Items (MEI). This approach provides for earlier fielding of enhanced air and missile defense capabilities across the currently fielded force to counter the evolving threat and allow for the knowledge that was gained in the development and fielding of the Patriot System to be fused into the MEADS program. The PAC-3 missile is the baseline missile for the MEADS system. The Missile Segment Enhancement (MSE) missile, which provides for greater ranges, will be the objective missile for the system.

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BUDGET ACTIVITY
5 - System Development and Demonstration

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . LMMFC MSE	SS-CPIF	LMMFC-D, TX	64708	16086	2Q	0		0		0	80794	0
b . Raytheon MSE	SS-FP	Raytheon, MA	10958	5418	2Q	0		0		0	16376	0
c . Raytheon Evolutionary Development	SS-FP	Raytheon, MA	11804	17016	2-3Q	0		0		0	28820	0
d . RDEC	MIPR	MRDEC, AL	5820	2718	1-4Q	0		0		0	8538	0
e . PAC-3 Missile FOT	SS-CPFF	LMMFC-D, TX	20413	9088	2-3Q	0		0		0	29501	0
f . PAC-3 Missile FOT	SS-FP	Raytheon, MA	11082	2190	2-3Q	0		0		0	13272	0
Subtotal:			124785	52516		0		0		0	177301	0

ARMY RDT&E COST ANALYSIS(R3)

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5 - System Development and Demonstration

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . SETA	FFP	CAS, AL	2350	1400	2Q	0		0		0	3750	0
b . OGA/In-House	PO	RSA/Lower Tier Project Office (LTPO)	9042	766	1-4Q	0		0		0	9808	0
Subtotal:			11392	2166		0		0		0	13558	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . White Sands Missile Range	MIPR	WSMR, NM	7915	3800	1-4Q	0		0		0	11715	0
b . Operational Test Support	MIPR	Various	1500	1000	2Q	0		0		0	2500	0
c . Targets	MIPR	SMDC/AL	11235	2000	1-4Q	0		0		0	13235	0
Subtotal:			20650	6800		0		0		0	27450	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604865A - Patriot PAC-3 Theater Missile Defense Acq - EMD	PROJECT 01C
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:												
Project Total Cost:			156827	61482		0		0		0	218309	0

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604865A - Patriot PAC-3 Theater Missile Defense
 Acq - EMD**

PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11																																					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																																		
PAC-3 MISSILE PROGRAM MILESTONES																																																																		
(1) DAB IPR PATRIOT/MEADS COMBINED PROG, (2) PAC-3 Missile IOC	▲ 1		▲ 2																																																															
(3) OIPT/DAB																																	▲ 3																																	
MISSILE SEGMENT ENHANCEMENT (MSE) Development (Transferred to CAP)	MSE Development																																																																	
LOW-RATE INITIAL PRODN	PAC-3																																																																	
BLOCK 2002 PRODUCTION DELIV	PAC-3 BLOCK 2002																																																																	
(4) PAC-3 BLOCK 2004 PRODN Decision																																	▲ 4																																	
BLOCK 2004 PRODUCTION DELIV	PAC-3 BLOCK 2004																																																																	
(5) PAC-3 BLOCK 2006 PRODN Decision																																	▲ 5																																	
Block 2006 PRODUCTION DELIV	PAC-3 Block 2006																																																																	
RECAPITALIZATION	RECAPITALIZATION (SYNCHRONIZED UPGRADES)																																																																	

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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0604865A - Patriot PAC-3 Theater Missile Defense
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
PAC-3 Missile Block 04 Production Decision		2Q						
PAC-3 IOC	3Q							
PAC-3 Missile Block 06 Production Decision				4Q				
DAB PAC-3/MEADS Combined Program	4Q							

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604869A - Patriot/MEADS Combined						PROJECT M06		
			Aggregate Program (CAP)								
	COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
M06	PATRIOT/MEADS COMBINED AGGREGATE PROGRAM (CAP)	0	0	288785	326352	454511	510672	510389	490441	0	2581150

A. Mission Description and Budget Item Justification: The Combined Aggregate Program (CAP) is the process by which the Patriot system transitions to the Medium Extended Air Defense Systems (MEADS). The MEADS mission is to provide low-to-medium altitude air and missile defense (AMD) with the capability to counter, defeat, or destroy tactical ballistic missiles (TBMs), air breathing threats (ABTs) to include cruise missiles (CMs), unmanned aerial vehicles (UAVs), tactical air-to-surface missiles (TASMs), and anti-radiation missiles (ARMs). Patriot currently provides a significant capability against these threats; however, as the system continues to age, maintaining the system will become more costly as the system components become obsolete and difficult to acquire and maintain.

MEADS will be interoperable with other airborne, ground-based, and sea-based sensors, and will provide 360-degree coverage with improved seeker/sensor components. MEADS will provide air and missile defense of vital unit of employment and unit of action assets associated with Army and Marine Corps maneuver forces. MEADS will provide forces with defense against multiple and simultaneous attacks and will have a netted distributed architecture with modular components to increase survivability and flexibility of employment in a number of operational configurations. MEADS will offer tactical mobility via C-130 and helicopter transport that is not possible with Patriot. In addition, MEADS requirements for strategic lift are significantly reduced due to the use of smaller and lighter weight end items.

MEADS consists of the following Major End Items (MEI's): Patriot Advanced Capability (PAC)-3 Missile and Missile Segment Enhancement (MSE); Battle Management Command, Control, Communications, Computers, and Intelligence (BMC4I) Tactical Operations Center (TOC); Surveillance Radar (SR); Multi-Function Fire Control Radar (MFCR); Launcher; and Launcher Reloader.

The CAP strategy will achieve MEADS objective capability through an evolutionary approach by incrementally inserting MEADS MEIs into the current Patriot force. The MEIs will be developed and fielded in three acquisition increments.

MEADS is a tri-national co-development program among the U.S., Germany, and Italy to replace the U.S. Patriot air defense systems, Patriot and HAWK systems in Germany, and NIKE Hercules systems in Italy. Participating countries will sign a Memorandum of Understanding (MOU) for each successive program phase. The North Atlantic Treaty Organization (NATO) MEADS Management Agency (NAMEADSMA) is the NATO contract authority providing management of the MEADS program on behalf of the participating nations of the U.S., Italy, and Germany and is responsible for managing the system acquisition. The U.S. and Italy signed the Design and Development (D&D) MOU on September 24, 2004, and September 27, 2004, respectively.

Contract efforts are planned with the MEADS and Patriot major systems contractors for the SDD phase of the CAP.

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5 - System Development and Demonstration

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Aggregate Program (CAP)

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MEADS International (MI) will continue to develop the core objective MEADS system for all three countries. The D&D contract objective is to design, develop, test and evaluate production representative MEADS hardware. The D&D contract is an international contract awarded and administered by NAMEADSMA. The D&D letter contract was awarded on September 28, 2004, at a not-to-exceed value of \$3.4B.

As a result of a delay in Germany's political process until early 2005, NAMEADSMA entered into the D&D letter contract with MI that covers the entire D&D effort and allows incremental funding. This provision allows the U.S. and Italy to obligate funds and permits Germany to enter into the D&D phase by March 2005. The risk to the U.S. and Italy during this first increment is limited to the amount of U.S. and Italy's CY 2004 and CY 2005 funding. The contract allows the U.S. and Italy to terminate the contract or to restructure the program with U.S. and Italian funds if Germany does not commit to the D&D phase.

The Patriot Advanced Capability (PAC)-3 Missile Segment Enhancement (MSE) contract was awarded as a letter contract to Lockheed Martin Missiles and Fire Control (LMMFC) on June 27, 2003, at a not-to-exceed amount of \$260M. The MSE improves upon the current PAC-3 missile capability with a higher performance solid rocket motor, modified lethality enhancer, more responsive control surfaces, upgraded guidance software, and insensitive munitions improvements. At the completion of the development effort, the change to the missile will be incorporated into production currently planned for FY2010.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue the U.S. contribution to the North Atlantic Treaty Organization (NATO) MEADS Management Agency (NAMEADSMA) International Program Office operational and management budgets to manage the Design and Development (D&D) Phase contract to design, develop, build, test and evaluate the production representative MEADS hardware. FY05 and FY06 efforts will develop the BMC4I to support Increment 1 testing in FY07 with initial production in FY08 and subsequent fielding to be completed in FY10.	0	0	143755	170800
Implement program integration efforts that will examine Department of Defense (DOD) Joint Vision and Army Transformation Future Force mix and integration issues; support Patriot / MEADS CAP in the test and evaluation of Air and Missile Defense (AMD) task force interoperability and Army System-of-Systems (in a netted and distributed architecture); support development and maintenance of Joint Data Network interface requirements; and appropriate planning of MEADS manpower, training, human factors, safety issues, cost reduction initiatives, and protection of U.S. background technology.	0	0	49930	58852
Continue management, support and salaries for the national and international program offices.	0	0	5100	6700
Continued single canister and engage on remote development. Includes efforts to support Missile Segment Enhancement.	0	0	90000	90000

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604869A - Patriot/MEADS Combined Aggregate Program (CAP)	PROJECT M06
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Accomplishments/Planned Program B(continued)	FY 2004	FY 2005	FY 2006	FY 2007
Totals	0	0	288785	326352

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget	0	0	0
Current Budget (FY 2006/2007 PB)	0	288785	326352
Total Adjustments	0	288785	326352
Net of Program/Database Changes			
Congressional program reductions			
Congressional rescissions			
Congressional increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years		288785	326352

The Army adjusted funding as directed by a Defense Acquisition Board (DAB) Acquisition Decision Memorandum (ADM) in order to fully fund the Patriot/MEADS Combined Aggregate Program to the Office of the Secretary of Defense (OSD) Cost Analysis Improvement Group (CAIG) estimate. Army adjusted budget to meet this requirement.

FY04 funding displayed in PE 0604865 PAC-3 and 0603869A MEADS. FY05 funding displayed in PE 0603869A MEADS.

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604869A - Patriot/MEADS Combined
Aggregate Program (CAP)

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M06

C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PE 0604865A, PAC-3	151318	61482	0	0	0	0	0	0	0	212800
PE 0203801, Patriot Product Improvement	45587	32082	16188	10607	10884	11119	12029	12520	Continue	Continue
SSN C49100, PAC-3 Missile	616942	487364	489700	494754	466004	471770	0	0	0	3026534
SSN C50001, Patriot/MEADS CAP	0	0	0	0	88425	64338	423209	663557	22957360	24196889
PE 0102419, JLENS	57803	79316	106420	256893	471997	332428	0	0	0	1304857
SSN BZ0525, OPA, JLENS	0	0	0	0	0	29153	549707	397776	0	976636
PE 0604082, Project S23 SLAMRAAM	36103	63111	36102	29200	0	0	0	0	0	164516
SSN C81001, SLAMRAAM	7397	2440	19315	21970	59273	13124	0	0	0	123519
PE 0604820, SENTINEL	0	5851	5080	2547	2647	0	0	0	0	16125
SSN WK5057, OPA, SENTINEL	20646	7337	8393	15373	25074	31572	34473	32552	0	175420
PE 0603327, Project E88, Integrated Fire	40275	0	24961	42736	48894	50930	0	0	0	207796

C. Other Program Funding Summary: PAC-3 / MEADS CAP RDTE funding are combined and under PE0604869A in FY06 and beyond. This PE is an integral part of the Air, Space and Missile Defense System of Systems (SoS) including Integrated Fire Control (IFC), JLENS, Patriot/MEADS Combined Aggregate Program (CAP), SLAMRAAM, JTAGS, SENTINEL and on-going initiatives to achieve Single Integrated Air Picture (SIAP).

D. Acquisition Strategy: The Under Secretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) issued guidance to the Army in the Acquisition Decision Memorandum (ADM) dated December 2, 2002, to develop a plan for combining management, development, and fielding of Patriot and MEADS. The Defense Acquisition Board (DAB) convened on April 7, July 29, and December 17, 2003, to review the Army's plans to integrate Patriot and MEADS capability. A Milestone B DAB review was conducted on July 1, 2004, to decide on the Army's request for entry into System Development and Demonstration (SDD). The DAB approved the Army's Patriot/MEADS CAP request and USD (AT&L) signed the ADM on August 6, 2004, approving Milestone B for all three increments of CAP with a First Unit Equipped date of FY2015. The Acquisition Program Baseline (APB) and Acquisition Strategy were also approved for SDD. The U.S. and Italy signed the Design and Development (D&D) Memorandum of Understanding (MOU) on September 24, 2004 and September 28, 2004, respectively. Germany is expected to sign by 2QFY05 after the German Parliament approves the program. NAMEADSMA, the NATO contracting authority, awarded a MEADS D&D letter contract to MEADS International (MI) on September 28, 2004. The D&D letter contract definitization process is on going.

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**0604869A - Patriot/MEADS Combined
Aggregate Program (CAP)**

PROJECT

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Under the CAP acquisition strategy, as MEADS MEIs demonstrate maturity, a Milestone C decision review will be conducted for entry into production. The MEADS MEIs will be developed and fielded in three acquisition increments that integrate with and are in support of PEO Missiles and Space and Joint System of Systems (SoS) capabilities. Acquisition Increment 1 integrates the emerging MEADS BMC4I capability with Patriot battalions. Acquisition Increment 2 fields the lightweight launcher and MSE. Acquisition Increment 3 fields the Surveillance Radars and Multi-Function Fire Control Radars, and delivers the MEADS objective capability. For the SoS, the MEADS objective capability fully synergizes the interoperability and joint functionality between sensors, shooters, and BMC4I components, which addresses current Service-centric system shortfalls and provides enhanced capability through expanded engagement battlespaces and increased force protection. This incremental approach will maintain the current Patriot capability to protect the forces during the incremental transformation to MEADS. Entrance criteria have been established for the MEIs to enter Low Rate Initial Production (LRIP) and Full Rate Production (FRP). MEADS performance objectives established in the International Common Operational Requirements (ICOR) document and Capability Development Document (CDD) will be assessed during MEADS system testing, which includes developmental flight testing and Initial Operational Test and Evaluation (IOT&E).

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604869A - Patriot/MEADS Combined Aggregate Program (CAP)

PROJECT
M06

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Design and Development	CPIF	NAMEADSMA, Huntsville, AL	0	0		122000	2-3Q	143500	2-3Q	Continue	265500	0
b . Missile Segment Enhancement - LMMFC	SS-CPIF	LMMFC, Dallas, TX	0	0		60000	1-2Q	49500	1-2Q	Continue	109500	0
c . Missile Segment Enhancement - Raytheon	SS-FP	Raytheon, Boston, MA	0	0		8000	1-2Q	11000	1-2Q	Continue	19000	0
d . Program Integration	Various	Various, Huntsville, AL	0	0		28060	1Q	33282	1Q	Continue	61342	0
e . U.S. Only Security	MIPR	Lockheed Martin, Sycracuse, NY, Dallas, TX & Orlando, FL	0	0		2750	1-2Q	2750	1-2Q	Continue	5500	0
f . U. S. OGA's	MIPR	Various, Huntsville, AL	0	0		3390	2-3Q	3740	2-3Q	Continue	7130	0
g . In-House	Program Office	PO, Huntsville, AL	0	0		7200	2-3Q	8600	2-3Q	Continue	15800	0
h . U.S. Only Combined Aggregate Program (CAP)	Various	Various, Huntsville, AL & Dallas, TX	0	0		19655	2-3Q	25000	2-3Q	Continue	44655	0
Subtotal:			0	0		251055		277372		Continue	528427	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0604869A - Patriot/MEADS Combined Aggregate
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Int'l Program Office	Program Office	NAMEADSMA, Huntsville, AL	0	0		2100	2Q	2300	2Q	Continue	4400	0
b . U.S. Contracts	Various	CAS, Huntsville, AL	0	0		5530	2Q	5980	2Q	Continue	11510	0
c . Systems Engineering	MIPR	MRDEC, Huntsville, AL	0	0		7500	2Q	10000	2Q	Continue	17500	0
Subtotal:			0	0		15130		18280		Continue	33410	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Range Support	MIPR	WSMR, White Sands, NM	0	0		5500	1Q	7000	1Q	Continue	12500	0
b . Targets	MIPR	SMDC, Huntsville, AL	0	0		8000	1Q	10000	1Q	Continue	18000	0
c . Mod & Sim	MIPR	Huntsville, AL	0	0		4000	1Q	7000	1Q	Continue	11000	0
Subtotal:			0	0		17500		24000		Continue	41500	0

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604869A - Patriot/MEADS Combined Aggregate Program (CAP)

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Internal Operating	LOE	NAMEADSMA, Huntsville, AL	0	0		5100	2-3Q	6700	2-3Q	Continue	11800	0
Subtotal:			0	0		5100		6700		Continue	11800	0
Project Total Cost:			0	0		288785		326352		Continue	615137	0

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604869A - Patriot/MEADS Combined Aggregate Program (CAP)

PROJECT
M06

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
RISK REDUCTION EFFORT	RRE																															
Missile Segment Enhancement (MSE) Development (CAP Funded)	MSE DEVELOPMENT																															
RRE MODIFICATION	RREM																															
(1) MS B			▲1																													
(2) ADM			▲2																													
DESIGN AND DEVELOPMENT	DESIGN AND DEVELOPMENT																															
(3) Program Decision (GE Signature)							▲3																									
(4) SRR							▲4																									
(5) MEADS System PDR: Preliminary Design Review												▲5																				
MSE LRIP - Long Lead																																
(6) MEADS System CDR: Critical Design Review																																▲6
(7) MSE LRIP Contract Award																																▲7
MSE LRIP																																MSE LRIP

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604869A - Patriot/MEADS Combined Aggregate Program (CAP)

PROJECT
M06

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone B	4Q							
Acquisition Decision Memorandum (ADM)	4Q							
U.S. & Italy Program Decision (MOU Signatures)	4Q							
Design and Development Phase Contract Award	4Q							
Program Decision (Germany Signature)		2Q						
System Requirement Review		3Q						
System Preliminary Design Review (PDR)				3Q				
MSE LRIP - Long Lead Items						1Q		
System Critical Design Review (CDR)							1Q	
MSE LRIP Contract Award							1Q	
MSE LRIP							1Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	60983	95836	63662	71523	65630	62070	49480	31597	0	548556
087 DISTRIBUTED LEARNING SYSTEM (DLS)	0	712	4839	1272	397	397	397	397	0	11211
099 ARMY HUMAN RESOURCE SYSTEM (AHRS)	3625	5516	5056	3325	1679	1482	1509	1534	0	32578
137 TRANS COORDINATORS' AUTO INFO FOR MOVEMENT SYS II	15298	17965	17824	22964	20047	22853	19940	2090	0	148726
184 INSTALLATION SUPPORT MODULES (ISM)	912	3795	1012	1099	1124	1145	1163	1172	0	13085
185 ARMY RECRUITING INFORMATION SUPPORT SYSTEM (ARISS)	2159	0	0	0	0	0	0	0	0	12520
193 MEDICAL COMMUNICATIONS FOR COMBAT CASUALTY CARE	8802	11974	8303	10872	9670	8661	7818	7979	0	77613
196 CHIEF INFORMATION OFFICE (CIO)	5011	8623	0	0	0	0	0	0	0	15612
252 TACMIS	5044	5215	0	0	0	0	0	0	0	15450
316 STACOMP	20132	37352	7732	14032	9421	6553	3994	4077	0	106944
474 ENTERPRISE TRANSMISSION SYSTEMS	0	4684	5478	3043	1008	1002	3036	4561	0	22812
738 ACQUISITION COLLABORATIVE ENVIRONMENT	0	0	13418	14916	22284	19977	11623	9787	0	92005

A. Mission Description and Budget Item Justification: Supports efforts to plan, design, develop, and test information technology solutions to fulfill the Army's Warfighter Support Mission and accommodate changing Army requirements while fulfilling future Army needs. Provides for development and acquisition of Combat Service Support (CSS) and business information technology solutions to help arm, sustain, fix, move, train and man the force. Completed development/acquisition efforts will also enhance sustaining base functions and power projection capabilities and facilitate global messaging and electronic data interchange (EDI). Ongoing development efforts support multiple functional areas including logistics, personnel, transportation, training, medical/health protection, and sustaining base.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	95261	80335	83011
Current Budget (FY 2006/2007 PB)	95836	63662	71523
Total Adjustments	575	-16673	-11488
Net of Program/Database Changes			
Congressional Program Reductions	-1459		
Congressional Rescissions			
Congressional Increases	4550		
Reprogrammings			
SBIR/STTR Transfer	-2516		
Adjustments to Budget Years		-16673	-11488

FY06 and FY07 reflect adjustments for the Distance Learning System (DLS), Medical Communications for Combat Casualty Care (MC4), Transportation Coordinator's Automated Information for Movements System II (TC-AIMS II), Standard Army Management Information System Tactical Computer (STACOMP), Chief Information Office (CIO), Tactical Management Information System (TACMIS), Tactical Logistics Data Digitation (TLDD), and Enterprise Transmission Systems (ETS). FY06 and FY07 also reflect the creation of a new PE (0605013A 738) for the Advanced Collaborative Environment.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0605013A - Information Technology Development				PROJECT 087		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
087 DISTRIBUTED LEARNING SYSTEM (DLS)	0	712	4839	1272	397	397	397	397	0	11211

A. Mission Description and Budget Item Justification: The Distributed Learning System (DLS) is an Army Acquisition Category 1 Army Component (ACAT 1AC) major automated information system that will modernize training delivery in the Army training and education system by leveraging information technology (IT). DLS is an integral component of the Department of Defense Advanced Distributed Learning Initiative (ADLI), and Strategic Plan for Transforming DOD Training, which calls for the full exploitation of technologies to support quality education and training. DLS supports the E-Government strategy by using the Web to provide training materials, by enabling the intra-agency sharing of training data, and by adopting commercial practices and products to reduce operating costs. DLS supports the President's Management Agenda by making use of e-Learning to leverage scarce training funds and to provide greater agency access to training materials. DLS provides standard automation and supporting infrastructure to improve Army's ability to train service members and supporting civilian workforce in all Army components by introducing proven distance learning (DL) enhancements into the Army training inventory. DLS capability increments are: Increment 1, Installation/Unit Digital Training Facilities (DTF) fielding complete FY2005; Increment 2, Networked DLS fielding complete FY2005; Increment 3, Army Learning Management System (LMS) Full Rate Production (FRP) FY2004 with annual enhancements (system releases) FY2005-2011; and, Increment 4, Deployed Digital Training Campus (DDTC) System Design, Specification and Development (SSD) beginning FY2005.

FY 2006/2007 funding enables the development of a future system release for Increment 3 (LMS), the prototyping and developmental testing of Increment 4 (DDTC), and the operational test and evaluation (OTE) and full rate production (FRP) decision for Increment 4 (DDTC).

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Program Management	0	300	875	120
Increment 3 (LMS) - Enhancement (System Releases)	0	0	500	500
Increment 4 (DDTC) - System Design, Specification, and Development (SSD)	0	412	3464	0
Increment 4 (DDTC)- Operational Test & Evaluation (OT&E)	0	0	0	652
Totals	0	712	4839	1272

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
087

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OMA APEs 432615/432612/432126	30268	36907	38737	45182	39725	43429	45900	47377	Continuing	Continuing
OPA SSN BE4173 THE ARMY DISTANCE LEARNING PROGRAM	4843	5269	12523	6581	8441	8393	13308	7694	Continuing	Continuing

C. Acquisition Strategy: Distributed Learning System (DLS) will follow an evolutionary acquisition strategy using a spiral development process based on the following rationale: (1) cost savings can be realized immediately upon implementation of even a limited set of facilities, courseware, and media types; (2) requirements for future increments are dependent upon technology maturation. DLS will be executed using four discrete increments narrow in scope and as brief in duration as practical to deliver a measurable net benefit independent of future segments. Each increment satisfies a set of requirements identified in the Capabilities Production Document (CPD) and provides a militarily useful and operationally supportable function, which permits additional increments to be added over time without having to completely re-design and redevelop those portions of the system already fielded. New capabilities requirements will be integrated with the existing functional baseline system as technologies and capabilities mature using system releases where feasible. A rigid configuration management program is established to maintain the integrity of each functional and technical baseline. The approved DLS acquisition strategy identifies four increments for implementation. Two previously identified capability requirements (Video-to-the-Desktop and Simulations) are best satisfied by changes to the existing Increment 2 (Networked DLS) platform as future system releases.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
087

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Software Integration (System Releases) - Increment 3	C /CPAF	TBD	0	0		500	2Q	500	2Q	Continue	1000	0
b . Engineering Integration - Increment 4	C/FP	TBD	0	327	1Q	0		0		0	327	0
c . System Prototyping - Increment 4	C/CPIF	TBD	0	0		3004	1-2Q	0		Continue	3004	0
d . Developmental Test & Evaluation [DT&E] - Increment 4	C/CPIF	TBD	0	0		460	3-4Q	0		Continue	460	0
Subtotal:			0	327		3964		500		Continue	4791	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
087

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Support	C/FP	Titan Corporation, Newport News, VA	762	150	2Q	750	1-4Q	0		Continue	1662	0
b . Engineering/Tech Support	MIPR	ISEC, Fort Huachuca, AZ	0	85	1Q	0		0		0	85	0
Subtotal:			762	235		750		0		Continue	1747	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Operational Test & Evaluation [OT&E]	MIPR	ATEC: ATC, Washington, DC;OTC, Ft. Hood, TX	792	0		0		652	1Q	Continue	1444	0
Subtotal:			792	0		0		652		Continue	1444	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0605013A - Information Technology Development

PROJECT

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Managment Operations	N/A	PMO DLS, Newport News, VA	707	150	1-4Q	125	1-4Q	120	1-4Q	Continue	Continue	0
Subtotal:			707	150		125		120		Continue	Continue	0

Remarks: Program Management Operations includes direct pay of PMO government employees, TDY, training, supplies, etc.

Project Total Cost:			2261	712		4839		1272		Continue	Continue	0
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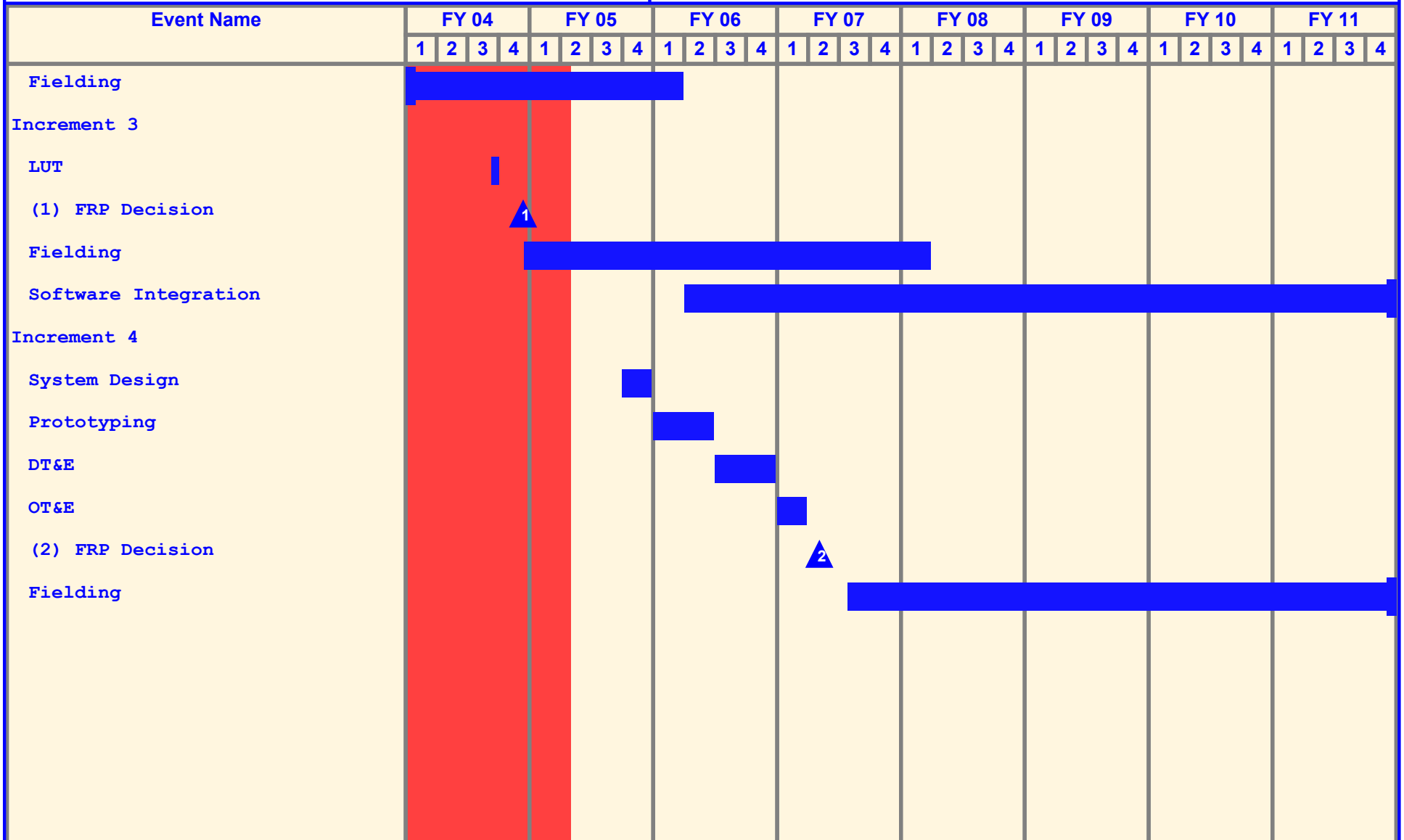
Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
087



Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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087

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Fielding Increments 1/2	1-4Q	1-4Q	1-2Q					
Full Rate Production [FRP] Decision/Fielding - Increment 3 [LMS]	4Q	1-4Q	1-4Q	1-4Q	1Q			
Software Integration - Increment 3 [LMS]			2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
System Design - Increment 4 [DDTC]		4Q						
Prototyping - Increment 4 [DDTC]			1-2Q					
Developmental Test & Evaluation (DT&E) [DDTC]			3-4Q					
Operational Test & Evaluation [OT&E]- Increment 4 [DDTC]				1Q				
Full Rate Production Decision - Increment 4 [DDTC]				2Q				
Fielding Increment 4				2-4Q	1-4Q	1-4Q	1-4Q	1-4Q

FY06 supports Deployable System Design, Specification & Development of Increment 4, Deployed Digital Training Campus (DDTC).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0605013A - Information Technology Development				PROJECT 099		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
099 ARMY HUMAN RESOURCE SYSTEM (AHRS)	3625	5516	5056	3325	1679	1482	1509	1534	0	32578

A. Mission Description and Budget Item Justification: Army Human Resource System (AHRS)- is a family of personnel systems that replaces previous versions of Standard Installation Division Personnel System (SIDPERS-3) for Active Army Personnel Operations and provides the Reserve Components a standard software system for use during mobilization. AHRS provides commanders and managers the necessary personnel information to make informed decisions regarding military personnel resources. The implementation of AHRS requires the development of an authoritative Army Corporate database to support the migration to the Defense Integrated Military Human Resource System (DIMHRS). The corporate database will require supporting information/data management processes, reporting, Human Resources (HR) applications, systems, and worldwide access.

Personnel Transformation (PT)-Army Enterprise Human Resource (eHR) System- The Personnel Transformation mission is to develop, field, and sustain a relevant, reliable, reachable, Army-wide electronic Human Resource (HR) system using a web-based military/civilian, multi-component Empirical approach for all HR functions. Army PT -eHR is crucial to the Army's effort to develop the necessary interfaces, standards, and analyses of current systems for integration into the joint DOD solution for personnel management DIMHRS. To date PT technology compatibility with unit set fielding and future combat systems is a goal; however, research or integration funding have not occurred in the integration of personnel technology, which is key to smaller footprint and ability to operate in flexible locations. In FY 06/FY 07, PT will initiate the development of and/or integration of technology that allows the reporting of personnel casualties (active, guard, reserve, military, civilian, and contractor) and theater accountability of personnel without direct human intervention. PT will integrate with passive accountability efforts and future combat system efforts such that maneuver commanders can access information from consul within maneuver Tactical Operations Center (TOC).

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
AHRS - Post Deployment Software Support (PDSS) - Engineering Change Packages (ECPs)/System Change Packages (SCPs) Interim Change Packages (ICPs)	3625	1379	1009	925
AHRS - Development	0	2868	916	439
AHRS - Enterprise Datastore	0	1269	961	532
Personnel Transformation - Research of PT impacts on Objective Force	0	0	2170	1429
Totals	3625	5516	5056	3325

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
099

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
AHRS, OPA, SSN W00800, STACOMP	5076	4248	4851	5061	10001	10579	10781	10987	Continuing	Continuing
AHRS, OMA, 432612/432615	4182	3609	4332	4480	5570	5586	5736	5888	Continuing	Continuing
Personnel Transformation, OPA, BE4164000	4362	0	2995	2985	3043	3243	3305	3368	Continuing	Continuing
Personnel Transformation, OPA, SSN W00800	2575	4952	0	0	0	0	0	0	Continuing	Continuing
Personnel Transformation, OMA, 432612	0	19999	23556	18120	25155	22320	22879	23433	Continuing	Continuing

C. Acquisition Strategy: PM Army Human Resource System (AHRS) makes extensive use of Integrated Product Teams (IPTs). Sub-elements of the acquisition (engineering and design, logistics planning, testing, etc.) are intensively managed by integrated teams of government and contractor personnel. Task performance is tracked against the Work Breakdown Structure (WBS) and resources allocated to each task are adjusted based on performance against the WBS. AHRS contractual efforts are acquired on a time and materials basis through GSA schedule and existing contractual vehicles. The Title 10 functionality has transferred to AHRS. Additionally, as the Personnel community manages their migration to the Defense Integrated Military Human Resource System (DIMHRS), the functionality resident in the 320+ external interface current systems will migrate to AHRS. This migration began in FY03, and will ensure the personnel community retains functionality necessary to meet operational requirements, while addressing Transformation requirements.

Personnel Transformation's mission is to develop, field, and sustain a relevant, reliable, reachable, Army-wide electronic Human Resource (HR) system using a web-based military/civilian, multi-component Enterprise approach for all HR functions. This system is crucial to meet the needs for developing the necessary interfaces, standards, and gap analyses of the legacy systems for integration in to the Defense Integrated Military Human Resource System (DIMHRS). As the Army PT approaches Initial Operating Capability (IOC) in 2006, there is an urgent need to strengthen the PeopleSoft technical and planning capabilities of the Army eHRS office. FY06/07 procures hardware and software required to integrate Army-specific functions into DIMHRS.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
099

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . AHRS - PDSS ECPs/SCPs/ICPs	C/FP	Electronic Data Systems, Herndon, VA	7880	1379		1009		901		Continue	11169	Continue
b . AHRS - Software Development		Electronic Data Systems, Herndon, VA	22272	4137		1877		995		Continue	29281	Continue
Subtotal:			30152	5516		2886		1896		Continue	40450	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Personnel Transformation - Research/Development PT Impacts on Objective Force	C/FP	Science Applications International Corp (SAIC) , San Diego, CA	0	0		2170		1429		Continue	3599	0
Subtotal:			0	0		2170		1429		Continue	3599	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
099

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			30152	5516		5056		3325		Continue	44049	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
099

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Migration DIMHRS																																
AHRS eMILPO Enhancements																																
DTAS Fielding																																
Personnel Transformation Development																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
099

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
AHRS eMILPO Enhancement	1-4Q	1-4Q	1-4Q	1-4Q				
Migration DIMHRS	1-4Q	1-4Q	1-4Q	1-4Q	1Q			
Personnel Transformation			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Deployed Theater Accountability Software (DTAS) Fielding		1-4Q	1-4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0605013A - Information Technology Development				PROJECT 137		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
137 TRANS COORDINATORS' AUTO INFO FOR MOVEMENT SYS II	15298	17965	17824	22964	20047	22853	19940	2090	0	148726

A. Mission Description and Budget Item Justification: Transportation Information Systems (TIS) Project Office funding supports design, development, testing, and program management functions for the Transportation Coordinators' - Automated Information for Movement System II (TC-AIMS II).

TC-AIMS II--

- o Provides standard DoD integrated information transportation system capability for deployment, sustainment, and redeployment operations during both war and peacetime operations for the active and reserve forces.
- o Consolidates the management of unit/installation-level transportation functions of Unit Movement, Load Planning and Installation Transportation Office/Traffic Management Office (ITO/TMO) operations, and facilitates the movement and support of personnel and cargo during all phases of military operations in all environments, including sustainment; reception, staging, onward movement and integration (RSO&I); and battlefield operations.
- o Supports routine and surge requirements and automates shipping/receiving, and deployment; sustainment and redeployment processes; produces movement documentation, unit move data; and furnishes timely transportation information to major commands, transportation component commands, United States Transportation Command, and the Joint deployment community.
- o Provides In-Transit Visibility data and control over cargo and passenger movement, as a DoD source movement information system.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Joint Project Management Office (JPMO) Contractor Support	6607	6251	5188	5153
JPMO Operations	2279	2311	2592	2711
Facility Lease/Service Management	1897	1955	2013	2073
Block 3 (Movements Control & Planning; Map Graphics) System Development	4515	6586	0	0
Block 3 (Movements Control & Planning; Map Graphics) System Test and Evaluation	0	862	877	891
Block 4 (Maritime Prepositioning Force; Theater Operations) System Development	0	0	7154	12136
Totals	15298	17965	17824	22964

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA - SSN: BZ8900 TC AIMS II	16747	16049	31356	30149	29499	26099	21026	27309	Continuing	Continuing
OMA - APE: 432612	11511	13377	14907	26808	23175	23202	33254	33393	Continuing	Continuing
OPA - SSN: BE4166	346	193	0	0	0	0	0	0	Continuing	Continuing

C. Acquisition Strategy: Transportation Information Systems (TIS) Project Office for the Transportation Coordinators' - Automated Information for Movement System II (TC-AIMS II) uses an Integrated Support Cost Plus Award Fee contract to develop, maintain, and field (including training) the software. A separate contract provides program management support. TC-AIMS II system development is following a multi-block, phased development and fielding strategy to reduce technical, program, and user acceptance risks. TC-AIMS II system capability is broken into five separate, stand-alone software blocks including: Block 1 – Unit Move, Block 2 – Enhanced Unit Move (Web), Block 3 – Movements Control & Planning; Map Graphics, Block 4 – Maritime Pre-positioning Force; Theater Operations, and Block 5 – ITO/TMO. Infrastructure requirements are being satisfied by the establishment of an Enterprise Architecture composed of a Central Management Facility supporting Multiple Regional Access Nodes. Additional infrastructure requirements include the acquisition and deployment of Commercial-Off-The-Shelf (COTS) hardware to provide a breakaway client-server capability which will function in isolated workgroups or in stand-alone modes. Funding supports the operations of a Central Management Facility (CMF) with a minimum of three Regional Access nodes. This Enterprise Management System operating at the CMF supports central software distribution to remote sites. Funding for Army hardware is included in the TIS, TC-AIMS II procurement program.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
137

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Development	C/CPAF	Computer Sciences Corporation (CSC), Springfield, VA	21975	6586	3Q	7154	3Q	12136	3Q	0	47851	0
Subtotal:			21975	6586		7154		12136		0	47851	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Facility Lease/Service Management	C/FFP	SMART TECH, Springfield, VA	5859	1955	1Q	2013	1Q	2073	1Q	Continue	Continue	Continue
b . Joint Project Management Office (JPMO) Contractor Support	C/FP	Various	14832	6251	1-4Q	5188	1-4Q	5153	1-4Q	Continue	Continue	Continue
c . JPMO Operations	NA	JPMO, Springfield, VA	7033	2311	1-4Q	2592	1-4Q	2711	1-4Q	Continue	Continue	Continue
Subtotal:			27724	10517		9793		9937		Continue	Continue	Continue

Remarks: JPMO Operations includes direct pay of government employees, TDY, training, supplies, etc.

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5 - System Development and Demonstration

PE NUMBER AND TITLE
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . OT & DT	MIPR	Various	5264	862		877		891		Continue	Continue	0
Subtotal:			5264	862		877		891		Continue	Continue	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			54963	17965		17824		22964		Continue	Continue	Continue
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Schedule Profile (R4 Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Block 1 (Unit Move) Tng & Fldg/ Block 2 (Enhanced Unit Move (Web)) Dev/Test																																
(1) Block 2 (Enhanced Unit Move (Web)) MS C/Block 3 MS B			▲ 1																													
Block 3 Development & Testing																																
(2) Block 3 MS C/Block 4 MS B									▲ 2																							
Block 3 Training and Fielding																																
Block 4 (Maritime Prepositioning Force; Theater Opns) Dev & Test																																
(3) Block 4 (Maritime Prepositioning Force; Theater) MS C/Block 5 MS B																	▲ 3															
Block 4 Training and Fielding																																
Block 5 (Theater Operations) Development & Testing																																
(4) Block 5 (Theater Operations) MS C																													▲ 4			
Block 5 Training and Fielding																																

Schedule Detail (R4a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Block 1 (Unit Move) Training & Fielding	1-2Q							
Block 2 (Enhanced Unit Move (Web)) Milestone C	3Q							
Block 3 (Development & Testing)	3-4Q	1-4Q	1-2Q					
Block 3 (Movements Control & Planning; Map Graphics) Milestone C			2Q					
Block 3 Training & Fielding			2-4Q	1-4Q	1-3Q			
Block 4 (Maritime Prepositioning Force; Theater Operations) Development and Testing			2-4Q	1-4Q	1-4Q			
Block 4 (Maritime Prepositioning Force; Theater Operations) Milestone C					4Q			
Block 4 Training & Fielding					4Q	1-4Q	1-2Q	
Block 5 (Theater Operations) Development and Testing						1-4Q	1-4Q	1Q
Block 5 Milestone C								1Q
Block 5 Training and Fielding								1-4Q

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BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0605013A - Information Technology Development				PROJECT 184		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
184 INSTALLATION SUPPORT MODULES (ISM)	912	3795	1012	1099	1124	1145	1163	1172	0	13085

A. Mission Description and Budget Item Justification: Continues the migration of the fielded Installation Support Modules (ISM) software (DOS character based) applications to a more modern graphical user interface in a web based environment. The web based applications connect to a single, centralized database, which stores data for the ISM modules. The single database is replicated to regional servers located in CONUS and eventually OCONUS. Replicating the database to the regional sites provides multiple points of access instead of a single access point; resulting in faster response time for users located at installations around the world. By employing an architecture that has a centralized, replicated database, the modernized ISM system provides installations with data that is up to date, accurate, and always available. The first increment of the modernized ISM software applications was deployed the 2nd Quarter of FY04. Follow on increments will be fielded in FY05 and FY06. ISM provides Installation Commanders a more efficient and effective process to conduct normal day-to-day business operations. The ISM program consists of nine standard automated applications that support soldier readiness and deployment/redeployment processing in the areas of personnel management, training and logistics. The ISM modules are: In-Processing (INPROC), Out-Processing (OUTPROC), Personnel Locator (PERSLOC), Education Management (EDMIS), Drug and Alcohol Management (DAMIS), Transition Processing (TRANSPROC), Central Issue Facility (CIF), Range Facility Management Support System (RFMSS) and Automated Instructional Management System (AIMS-PC). The ISM system is currently deployed at sixty-six Army installations to include all power projection and power support platforms. Webifying the applications will increase usage by allowing any authorized user who has a web browser access to the system regardless of location. The Joint Warrior Interoperability Demonstration (JWID) is an annual, Chairman of the Joint Chiefs of Staff event that enables U.S. Combatant Commands and the international community to conduct testing and demonstrations of command and control, communications and computer (C4) solutions that focus on selected core objectives. The JWID and its integral network provide emerging public sector and other government agency technologies the opportunity to demonstrate their utility to solving coalition interoperability problems. Each military service provides proportionate funding to the JWID Management Office in affecting this annual demonstration. The US Army funding for this annual demonstration supports the establishment of both services and networks to facilitate the global coalition network through which interoperability trials are executed.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Independent Verification and Validation (IV&V) Testing	50	32	50	60
Post-Deployment Software Support (PDSS) - Engineering Change Packagess (ECPs)/System Change Packages (SCPs)	224	240	278	327
Joint Warfighter Interoperability Demonstration (JWID)	638	1616	684	712
Define requirements and assess needs for a Rock Island Arsenal operations center and install force protection equipment and software (Congressional Add)	0	1907	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY
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Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007						
Totals	912	3795	1012	1099						
<u>B. Other Program Funding Summary</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OMA APE: 432612/432100	10597	11072	12352	12694	13094	12152	12460	12775	Continuing	Continuing
BE4162 MACOM AUTOMATION SYSTEMS	778	427	772	789	804	824	841	859	Continuing	Continuing

C. Acquisition Strategy: This system is in Post Deployment Software Support (PDSS). The present concept calls for the use of full and open competition to implement enhancements as defined by the Functional Proponent, Army Chief Information Officer (CIO)/G-6.

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BUDGET ACTIVITY
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PDSS ECPs/SCPs/ICPs	C/FP	Systems Research & Applications, Fairfax, VA	8640	240	2Q	278	2Q	327	2Q	Continue	9485	Continue
b . JWID Development - Army	MIPR	OSD	638	1616	1Q	684	1Q	712	1Q	0	3650	0
c . Rock Island Ops Center	C/FP	Intergraph, Huntsville, AL	0	1837		0		0		0	1837	0
Subtotal:			9278	3693		962		1039		Continue	14972	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Support	MIPR	AMRDEC, Redstone Arsenal, AL	0	70		0		0		0	70	0
Subtotal:			0	70		0		0		0	70	0

Remarks: AMRDEC - Aviation and Missile Research, Development and Engineering Center (US Army Aviation and Missile Command)

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BUDGET ACTIVITY
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Independent Verification and Validation (IVV) Testing	C/FP	ANTEON Corp, Fairfax, VA	1548	32	1Q	50	1Q	60	1Q	Continue	1690	Continue
Subtotal:			1548	32		50		60		Continue	1690	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			10826	3795		1012		1099		Continue	16732	Continue
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Schedule Profile (R4 Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ISM Hardware Fielding	[Redacted]																															
PPSS	[Redacted]																															
	[Redacted]																															

Schedule Detail (R4a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Post Deployment Software Support	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0605013A - Information Technology Development				PROJECT 185		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
185 ARMY RECRUITING INFORMATION SUPPORT SYSTEM (ARISS)	2159	0	0	0	0	0	0	0	0	12520

A. Mission Description and Budget Item Justification: The US Army Accessions Command Integrated Automation Architecture (AAC-IAA), formerly known as the Army Recruiting Information Support System (ARISS), provides a robust integrated automation capability to enhance Army recruiting business processes. The AAC-IAA helps Army attract highly qualified, capable recruits while reducing individual recruiter workload. Army used an incremental approach to acquire/deploy the AAC-IAA capability. The AAC-IAA provides individual recruiters with powerful multi-media laptop computers to aid in performing assigned missions. Other planned enhancements will aid the Army in meeting new accession goals in an era of steadily dwindling resources and a shrinking pool of applicants for military service. There are no RDTE funds requested in this line after FY04.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Begin development to transition LEADS and MPA to Web-Based	500	0	0	0
Personnel Module, recruiting Impropriety Module, Enhancements	0	0	0	0
Development of Point of Sale and ERM	0	0	0	0
Guidance Counselor Re-Design to support Points of Sale Enhancements	400	0	0	0
Complete and Field Guidance Counselor Re-design	0	0	0	0
RWS Web Based Enhancements to Support Point of Sale	0	0	0	0
Continue Data Warehouse/BI Portal/Common Portal project	0	0	0	0
Integration of Enhanced Software	469	0	0	0
Testing	0	0	0	0
Software Engineering	110	0	0	0
USER Fielding Training	411	0	0	0
User Review	204	0	0	0
Small Business Innovative Research/Small Business Technology Transfer Programs	65	0	0	0
Totals	2159	0	0	0

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
BE4164, Personnel Automation System	12984	9268	11131	7021	0	0	0	0	0	40404
331715	28390	34069	56311	58548	57632	61477	0	0	0	296427

The funding outlined above supports the entire automation support structure of US Army Recruiting Command(USAREC). It is not purely dedicated to the capabilities formerly titled ARISS, but supports all aspects of the infrastructure, including copiers, personnel salaries, IT maintenance, sustainment of systems, and office automation lifecycle costs.

C. Acquisition Strategy: US Army Accessions Command Integrated Automation Architecture (AAC-IAA), formerly known as Army Recruiting Information Support System (ARISS), Incremental Implementation: Alpha increment - Provided recruiter workstation (RWS) infrastructure consisting of a mobile multimedia laptop computer with sales presentation and office automation capabilities. Initial deployment to all recruiters was completed in FY99. Recruiter Workstation (RWS) increment - Supports recruiter level missions. The first RWS module, Packet Projection (P/P) was deployed to all recruiters in FY99. Fielding in FY01 included: Leads/Reports - which provided applicant data projection; Force Structure, Address and Zip Code Realignment (FAZR) - FAZR provides central management of station, position and equipment data enabling the creation/management of marketing areas (schools and zipcodes), the foundation for LEADS distribution, mission assignment and a critical feeder to GoARMY.com; Mission, Product and Awards (MPA) - which automated the processing of mission assignments, and mission accomplishments. The Data Warehouse (DW) is the integrated historical repository and Business Intelligence Portal for recruiting. It retains organizational and production data which is used by the Program Analysis and Evaluation staff to assist in mission assignment and market placement of the recruiting force. In FY02 the ISA finished and fielded the Personnel (PER) Module, which manages all personnel data (including contractors) for USAAC and NGB recruiting and is the key to systems security management for all AAC enterprise technology resources. We also worked heavily on Guidance Counselor-Redesign (GC-R), which re-engineers the Guidance Counselor processes to allow for simplification of functions, movement toward web-based processing, and set the foundation for "paperless processing" of enlistment documents. In FY03 the ISA completed and fielded the GC-R module. Additional performance adjustments were added to improve responsiveness and reliability. We also worked heavily on Leads improvements and improvements to the Recruiter Workstation software to support proof of concept for Point of Sale. Point of Sale (POS) builds upon the GC-R effort and moves recruiting functions toward a web-based environment (where possible). The intent of POS is to provide qualified recruiters with enlistment capabilities and authority (similar to those of the Guidance Counselor) for use at the applicant's location. We also increased development on applicant self-processing. Over time, limited applicant self-processing or qualification will be supported over the Internet with temporary reservations for training seats. We continued development of the Business Intelligence Portal and the data warehouse and used best business practices with software integration and testing to assure most efficient development efforts.

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BUDGET ACTIVITY
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . EDS - AAC IT Enhancements	Time &Material	Fort Knox, KY	18474	0	1Q	0		0		0	18474	0
b . EDS - System Integration	Time & Material	Fort Knox, KY	6156	0	1Q	0		0		0	6156	0
c . Grumman Northrup - WEB	Time and Materials	Fort Knox, KY	2400	0		0		0		0	2400	0
Subtotal:			27030	0		0		0		0	27030	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Operations	MIPR	TRADOC/USAREC, KY	804	0		0		0		0	804	0
b . PM Support	C/FFP	Various	380	0		0		0		0	380	0
c . Engineering/Tech Spt	MIPR	ISEC, NJ	1091	0	1Q	0		0		0	1091	0
d . Fielding Training	MIPR and PerDiem		1346	0	1-2Q	0		0		0	1346	0

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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			3621	0		0		0		0	3621	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . EDS	Time and Material	Fort Knox KY	2549	0		0		0		0	2549	0
b . - User Review	TDY- Perdiem	USAREC Funtional SME	432	0	1-2Q	0		0		0	432	0
Subtotal:			2981	0		0		0		0	2981	0

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Operations	In House	Ft Knox, KY	200	0		0		0		0	200	0
Subtotal:			200	0		0		0		0	200	0
Project Total Cost:			33832	0		0		0		0	33832	0

Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Complete and Field PER Module, RI Module								
Complete and Field Guidance Counselor Redesign								
Complete and Field GC-R ERM								
Move Client Server Recruiting Systems /Develop Web Based New Recruiting Systems IAW AKM Goals	4Q							
Common Portal Development for the Recruiting community of Interest in the Public Space	4Q							
Develop/Complete Point of Sale	4Q							
Develop Applicant Self Processing								
Develop Point of Sale ERM								
Develop Single Tier Architecture								
Complete Paperless Applicant Processing								
Complete Mobile Web based Recruiting								

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0605013A - Information Technology Development				PROJECT 193		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
193 MEDICAL COMMUNICATIONS FOR COMBAT CASUALTY CARE	8802	11974	8303	10872	9670	8661	7818	7979	0	77613

A. Mission Description and Budget Item Justification: The Medical Communications for Combat Casualty Care (MC4) System provides multipliers to the medical force structure through the acquisition of digital communications and information technology solutions for the deployable medical forces. The MC4 System will also fulfill the requirements highlighted in United States Code; Title 10; Subtitle A; Part II; Chapter 55; Section 1074f; Medical tracking system for members deployed overseas. The MC4 System will also interface Force Health Protection information with Army Battle Command and Combat Service Support information technology systems as they evolve to support the Army Transformation. Initial MC4 Program efforts are focused on system engineering, integration, testing and fielding automation infrastructure for Army users of the Joint Theater Medical Information Program (TMIP) suite of software. FY 2006/2007 funding procures support system engineering, integration and developmental testing of information management/information technology to better support Force Health Protection in the Army Campaign Plan and Global War On Terrorism units as well as overall MC4 Project Management. This funding also supports the future integration of the Future Force Warrior and Future Combat System.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Program Management	1904	3422	2513	3513
Logistics Support Planning for Block I	744	1256	0	0
Logistics Support Planning for P3I and System Upgrades	0	0	493	709
Engineering and Technical Support for Block I	1345	1269	0	0
Engineering and Technical Support for P3I and System Upgrades	174	1269	1538	2538
MC4 Testing for P3I and System Upgrades	1984	2637	967	1567
MC4/TMIP Integration and Testing for P3I and System Upgrades	2651	2121	2792	2545
Totals	8802	11974	8303	10872

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BUDGET ACTIVITY
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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA SSN MA8046 (MC4)	6321	4569	8262	9097	9306	3329	8882	5665	Continuing	Continuing
OMA APE 432612	2904	2011	6052	6870	7789	8988	9288	9625	Continuing	Continuing

C. Acquisition Strategy: The MC4 Program supports a number of Army Medical Information Technology/Communications initiatives. The near and mid-term focus of the MC4 program is to engineer, design, test, acquire and field the Army specific automation/communications infrastructure capabilities, supporting the Joint Theater Medical Information Program (TMIP) integrated software application suite and other Army requirements. The hardware being procured is Commercial-off-the-Shelf (COTS). Since TMIP software is a major component of the MC4 System, the MC4 Program will deliver capabilities in increments, recognizing the need for future system upgrades and Preplanned Product Improvements (P3Is). The MC4 Program will continue to work with the user community to continually define and refine additional requirements and match them with available technologies to provide the user enhanced capabilities. These enhanced capabilities will be provided to the user at the earliest possible date. This approach yields the most operationally useful and supportable capability in the shortest time possible with Cost As an Independent Variable. Moreover, this approach provides an initial capability with the explicit intent of delivering improved and updated capability in subsequent upgrades and P3Is. This spiral development approach will be accomplished through a rapid prototyping process that will progress the system from its current functional capabilities to fully integrated objective capabilities. Appropriate commercial technology enhancements (e.g. advances in operating systems, voice activated technology, etc) will be incorporated into MC4 products and systems as they become available. Each MC4 System component will undergo a full range of developmental testing to include software unit testing, integration testing, interoperability testing and software qualification testing.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PMO Support	C/CPFF	CACI Inc-Federal, Arlington, VA	1975	1497	1Q	436	1Q	636	1Q	Continue	Continue	Continue
b . Logistics Planning	In House	PMO, Ft. Detrick, MD	979	736	1-4Q	191	1-4Q	407	1-4Q	Continue	Continue	Continue
c . Logistics Planning Spt	C/CPFF	CACI Inc-Federal, Arlington, VA	1381	520	1Q	302	1Q	302	1Q	Continue	Continue	Continue
d . Engineering & Technical Spt	In House	PMO, Ft. Detrick, MD	803	533	1-4Q	473	1-4Q	473	1-4Q	Continue	Continue	Continue
e . Engineering & Tech Spt	C/CPFF	Titan, Reston, VA	2431	2005	1Q	1065	1Q	2065	1Q	Continue	Continue	Continue
Subtotal:			7569	5291		2467		3883		Continue	Continue	Continue

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MC4 Integration and Testing	C/CPFF	Titan, Reston, VA	3012	1335	1Q	1659	1Q	1412	1Q	Continue	7418	Continue
b . PMO Testing Spt	MIPR	ATEC/AMEDD Board	1621	200	1-4Q	100	1-4Q	100	1-4Q	Continue	2021	Continue
c . MC4/TMIP System Engineering	C/CPFF	John Hopkins University (JHU) Applied Physics Lab, Laurel, MD	4672	2500	1Q	2000	1Q	2600	1Q	Continue	Continue	Continue
Subtotal:			9305	4035		3759		4112		Continue	Continue	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prog Mgmt Operations	In House	PMO, Ft Detrick, MD	3042	2648	1-4Q	2077	1-4Q	2877	1-4Q	Continue	10644	0
Subtotal:			3042	2648		2077		2877		Continue	10644	0

Remarks: Program Management Operations includes direct pay of PMO government employees, TDY, training, supplies, etc.

Project Total Cost:			19916	11974		8303		10872		Continue	Continue	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MC4 Block 1 Milestone B/MC4 Block 1 Milestone C																																
IOT&E																																
(1) FRPDR																																
MC4 P3I development, test, and integration																																

Schedule Detail (R4a Exhibit)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
MC4 Block I Milestone B/MC4 Block I Milestone C	2-3Q							
MC4 Block I IOT&E		2Q						
MC4 Block I Full Rate Production Decision Review (FRPDR)		3Q						
MC4 P3I development, test, and integration		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0605013A - Information Technology Development				PROJECT 196		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
196 CHIEF INFORMATION OFFICE (CIO)	5011	8623	0	0	0	0	0	0	0	15612

A. Mission Description and Budget Item Justification: The Chief Information Office (CIO) project establishes interoperability, standardization and integration across the Program Executive Office Enterprise Information Systems (PEO EIS). It is responsible for design, development and engineering of standard technical and systems architectures for Army business systems and the establishment of the standardized infrastructure architecture to support those systems. This is accomplished through sound engineering practices to produce synergy across program lines through reuse of software and hardware as well as interoperability between tactical and Combat Service Support (CSS) systems. The CIO sets the common framework for PEO EIS level guidance and support in the Army's Installation Information Infrastructure and Architecture (I3A). CIO serves as the Information Assurance Program Manager (IAPM) for the entire PEO with roles in Department of Defense Information Technology Security Certification and Accreditation Process (DITSCAP), Certification and Accreditation (C&A), information technology security issues, Networkiness, Connection Approval Process (CAP), and comprehensive information assurance program establishment. Beginning in FY06 this program will transfer to the Operation & Maintenance, Army (OMA) appropriation.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
CIO - Continue engineering/technical support and information assurance to support PEO EIS programs.	3856	6543	0	0
CIO Operations	1155	2080	0	0
Totals	5011	8623	0	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OMA, 432162, TLAIS (CIO)	0	0	12118	12787	12848	13040	20360	20660	Continuing	Continuing

C. Acquisition Strategy: The Chief Information Office (CIO) supports interoperability, standardization, and integration across the Program Executive Office Enterprise Information Systems (PEO EIS) by capitalizing on a common approach to software development through introduction of new technologies and methodologies.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:												

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CIO Engr/Security	Various	Various	3979	2792	1Q	0		0		0	6771	Continue
b . CIO Technical Support	C/FP	FC Business, Falls Church,VA	1337	571	1Q	0		0		0	1908	0
c . CIO Technical Support	C/FP	Titan Sys Corp, Billerica,MA	6622	3180	1Q	0		0		0	9802	Continue
Subtotal:			11938	6543		0		0		0	18481	Continue

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BUDGET ACTIVITY
5 - System Development and Demonstration

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CIO Operations	In House	CIO, Ft Belvoir, VA	2870	2080	1-4Q	0		0		0	4950	Continue
Subtotal:			2870	2080		0		0		0	4950	Continue

Project Total Cost:			14808	8623		0		0		0	23431	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0605013A - Information Technology Development				PROJECT 252		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
252 TACMIS	5044	5215	0	0	0	0	0	0	0	15450

A. Mission Description and Budget Item Justification: The Tactical Management Information Systems (TACMIS) Office leverages best business practices across logistics systems and provides acquisition support to all Program Executive Office Enterprise Information Systems (PEO EIS) managed Combat Service Support (CSS) programs to include hardware acquisition, fielding, logistics, and contract support. Funding supports civilian pay for 30 civilians, transportation, communications, contract and matrix support for logistics, training, contract administration, and ordering/tracking. Centralization of these functions assures that critical deployment and logistics related tasks are accomplished in a consistent manner for all PEO managed CSS programs. Beginning in FY06 this program will transfer to the Operation & Maintenance, Army (OMA) appropriation.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue TACMIS operations.	3749	3754	0	0
Continue contract and matrix support.	1295	1461	0	0
Totals	5044	5215	0	0

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OMA, 432612, TLAIS (TACMIS)	0	0	6258	7534	7715	7972	7854	7854	Continuing	Continuing

C. Acquisition Strategy: This budget line funds the Tactical Management Information System (TACMIS) office operations. This includes acquisition support to all Program Executive Office Enterprise Information Systems (PEO EIS) Combat Service Support (CSS) program managers for hardware acquisition, fielding, logistics, and contractual support.

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0605013A - Information Technology Development

PROJECT
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:												

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Technical Services	C/FP	Titan Corp, Billerica, MA	2318	675	1Q	0		0		0	2993	Continue
b . Technical Services	C/FP	BearingPoint (formerly KPMG), McLean, VA	2501	580	1Q	0		0		0	3081	Continue
c . Engineering/Logistics/Legal Matrix Support	MIPR	Various	946	108	1Q	0		0		0	1054	Continue
Subtotal:			5765	1363		0		0		0	7128	Continue

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BUDGET ACTIVITY
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Office Operations	In House	TACMIS, Ft Belvoir, VA	15770	3852	1-4Q	0		0		0	19622	Continue
Subtotal:			15770	3852		0		0		0	19622	Continue

Project Total Cost:			21535	5215		0		0		0	26750	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0605013A - Information Technology Development					PROJECT 316		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
316 STACOMP	20132	37352	7732	14032	9421	6553	3994	4077	0	106944

A. Mission Description and Budget Item Justification: The Standard Army Management Information System (STAMIS) Tactical Computers (STACOMP) program provides acquisition, logistics, and integration support to numerous tactical logistics programs (i.e., Global Combat Support System (GCSS-Army), Tactical Logistics Data Digitization (TLDD), etc) through in-house matrix and contract support. This support includes managing the Program Executive Office (PEO) warranty program for hardware and software products; developing and managing the PEO Integrated Logistics System (ILS) program for all systems; serving as the policy advisor on related matters, and maintaining liaison with the Headquarters, Department of the Army (HQDA) Logistics Studies Steering Committee (LCSS) and other members of the Acquisition Logistics community across the Army and Department of Defense (DoD). Support also includes managing contract negotiations and legal reviews; software/hardware evaluation testing; and contractor customer support for 24 hour hotline, technical upgrades, order processing/tracking reports, and World Wide Web (WWW) site.

The Tactical Logistics Data Digitization (TLDD) program will provide Army equipment operators with rapid digital access to technical data on the battlefield, at the motor pool, and at the school house; reduce operator ordering errors; allow the right materiel to be delivered at the right place and the right time; and to provide an Integrated Parts Selection (IPS) ("point and click") capability to the operators and maintainers. TLDD software includes the Electronic Technical Manual Interface (ETM-I), Digital Log Book (DLB) and Digital Preventive Maintenance Checks and Services (DPMCS) applications. TLDD supports all deployable forces including the "Stryker Force".

The General Fund Enterprise Business System (GFEB) is in the PRE-Major Automated Information System (MAIS) process and will follow the DoD Business Enterprise Architecture which is aligned to the mandated Federal Enterprise Architecture. GFEB was implemented to comply with the Federal Financial Management Improvement Act (FFMIA), the Chief Financial Officers (CFO) Act of 1990, the Government Performance and Results Act of 1993, the Government Management Reform Act of 1994, and the CLINGER- Cohen Act of 1996 and to fulfill the stated mission of the Assistant Secretary of the Army for Financial Management and Comptroller (ASA(FM&C)). The Principal Deputy for the ASA (FM&C) has directed the implementation of GFEB to replace 30+-year-old financial systems and other costly systems like, the Standard Finance Systems (STANFINS), Standard Operations and Maintenance, Army R&D System (SOMARDS), Defense Joint Accounting System (DJAS), and Database Commitment Accounting System (DbCAS/WebCas). GFEB will become the Department of the Army's new core financial management system for administering its general fund to improve performance, standardize processes and ensure that it can meet future needs. GFEB will be a commercial off-the-shelf (COTS) Enterprise Resource Planning (ERP) System that is certified by the Joint Financial Management Improvement Program (JFMIP) and provides the six core financial functions: general ledger management, payment management, receivable management, funds management, cost management, and reporting. GFEB outcomes will include the achievement of a qualified opinion by FY 2008 and an unqualified opinion by FY 2011. Beginning in FY06 the GFEB program has been transferred to a new Army Program Element - 654822 GF5.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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5 - System Development and Demonstration

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<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Project Office Operations	352	278	0	0
Continue providing sustained support in the areas of Integrated Logistics Support maintenance, configuration management, and test and evaluation.	576	536	0	0
Continue engineering and acquiring commercial-off-the-shelf hardware and software to meet the requirements for standard combat service support (CSS) automation information systems using all available Army, DoD and General Services Administration (GSA) contract preferred purchase vehicles to best meet the customer requirements.	2871	2206	0	0
Tactical Logistics Data Digitization (TLDD) - Developed Software. Applies the systematic use of technical knowledge and programming skills to meet specific TLDD performance and functional requirements through developmental software.	7433	930	3038	5438
TLDD - Government Project Management. The business and administrative planning, organizing, directing, coordinating, controlling and approval actions designated to accomplish the overall TLDD program objectives during the development phase.	1600	937	1194	1194
TLDD - Contractor Support. System Engineering Technical Analysis contractors augment the TLDD program by supporting the accomplishment of technical, functional, and programmatic analyses and documentation. FY04 Congressional funds will cover FY05 contractor support.	3200	0	3500	4900
General Fund Enterprise Business System (GFEBS)- Product Development. Blueprinting, Architecture Development, & GAP Analysis	0	4062	0	0
General Fund Enterprise Business System (GFEBS)- Support Costs. GFEBS Engineering and Technical Services	0	18147	0	0
General Fund Enterprise Business System (GFEBS)- Test and Evaluation. GFEBS Testing and Evaluation	0	2306	0	0
General Fund Enterprise Business System (GFEBS)- Management Services. Project Office Operations/SI	0	5439	0	0
Army Field Support Command Information Technology Initiative	1000	0	0	0
TLDD - Army Test and Evaluation Command	500	0	0	2500
Knowledge Management System consolidating diverging armament development and sustainment knowledge bases into an integrated data environment	2600	2511	0	0
Totals	20132	37352	7732	14032

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA, W00800, STACOMP (STAMIS)	2798	3490	2000	2049	3693	3800	3803	3807	Continuing	Continuing
OPA, W00800, TLDD	0	6189	3000	4166	11066	14506	19542	19716	Continuing	Continuing
OMA, 432612, TLDD	0	986	2475	3825	5400	7200	7200	7200	Continuing	Continuing
OMA, 432612, TLAIS (STACOMP)	0	0	4599	5350	5346	5402	5402	5402	Continuing	Continuing

C. Acquisition Strategy: The Standard Army Management Information System (STAMIS) Tactical Computer (STACOMP) supports acquisition and deployment of Program Executive Office (PEO) logistics personnel systems.

The strategy to acquire the Tactical Logistics Data Digitization (TLDD) solution will be accomplished via full and open competition through the evolutionary acquisition of time-phased requirements consisting of an initial block of capability, and some number of subsequent blocks necessary to provide the full capability required. Each block will enhance capability by building on its predecessor.

GFEBs acquisition strategy will be accomplished via a performance-based acquisition procurement effort through the evolutionary acquisition of time-phased requirements consisting of an initial block of capability and subsequent blocks necessary to provide the full capabilities required. A Request for Quotation (RFQ) will be sent to selected General Services Administration Federal Supply Schedule holders to provide the suite of services and software necessary to implement GFEBs with the best capability to assist the Army with achieving its GFEBs objectives. The Army will select a System Integrator (SI) that has an Enterprise Software Initiative (ESI)-SI Blanket Purchase Agreement (BPA) with DoD through the Department of the Navy.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TLDD - Developed Software	C/FFP	TBD	5827	930	2Q	3038	1Q	5438	1Q	Continue	15233	Continue
b . GFEBs - Blueprinting, Architecture Development, & GAP Analysis	C/FFP	TBD	0	4062	3Q	0		0		Continue	4062	0
c . Knowledge System Management	C/FFP	Applied Ordnance Technology, INC, Johnstown, PA	2600	2511	2Q	0		0		0	5111	0
Subtotal:			8427	7503		3038		5438		Continue	24406	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Technical services	C/FP	Bearing Point (formerly KPMG), McLean, VA	9686	2206	2Q	0		0		Continue	11892	Continue
b . Logistics/Contract Support	MIPR	CECOM, Fort Monmouth, NJ	1640	536	1-4Q	0		0		Continue	2176	Continue
c . SCC II Support	C/FP	GTSI, Chantilly, VA	800	0		0		0		0	800	0

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BUDGET ACTIVITY
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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
d . Software Executive Center - Belvoir	MIPR	SEC-B, Fort Belvoir, VA	911	0		0		0		Continue	911	Continue
e . TLDD - Technical Services	C/FFP	Titan Corporation, Colonial Heights, VA	1000	0		700	1Q	1100	1Q	Continue	2800	Continue
f . TLDD - Engineering and Technical Services	C/FFP	Bearing Point (formerly KPMG), Ft. Monmouth, NJ	1600	0		1300	1-4Q	1300	1-2Q	Continue	4200	Continue
g . TLDD - Engineering , Technical & Logistics Services	C/FP	CHM/TLC, Virginia Beach VA	0	0		1500	1-4Q	2500	1-2Q	Continue	4000	Continue
h . TLDD - Engineering and Technical Services	C/FP	Pacific Northwest National Lab (PNNG), Ft. Lewis, WA	1600	0		0		0		0	1600	0
i . GFEBS - Engineering and Technical Services	C/FFP	TBD	0	18147	3Q	0		0		Continue	18147	0
Subtotal:			17237	20889		3500		4900		Continue	46526	Continue

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BUDGET ACTIVITY
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . GFEBS - Testing and Evaluation	C/FFP	TBD	0	2306	4Q	0		0		Continue	2306	Continue
b . TLDD - Testing and Evaluation	MIPR	ATEC, Ft Hood, TX	1500	0		0		2500	1-2Q	Continue	4000	Continue
Subtotal:			1500	2306		0		2500		Continue	6306	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Office Operations	In House	PM, Ft. Belvoir, VA	1137	278	1-4Q	0		0		Continue	1415	Continue
b . TLDD - Project Office Operations	In House	PM, Ft. Monmouth, NJ	1600	937	1-4Q	1194	1-4Q	1194	1-4Q	Continue	4925	Continue
c . GFEBS - Project Office Operations	In House	TBD	0	5439	1-4Q	0		0		Continue	5439	Continue
Subtotal:			2737	6654		1194		1194		Continue	11779	Continue

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Project Total Cost:

29901

37352

7732

14032

Continue 89017

Continue

Schedule Profile (R4 Exhibit)

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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) TLDD MS A, (2) TLDD MS B, (3) TLDD MS C TLDD Fielding									▲ 1				▲ 2				▲ 3															

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Acquisition Support	1-4Q	1-4Q						
GFEBs - Acquisition Support		1-4Q						
TLDD - MS A			1Q					
TLDD - MS B					1Q			
TLDD - MS C					4Q			
TLDD - Fielding					4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0605013A - Information Technology Development				PROJECT 474		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
474 ENTERPRISE TRANSMISSION SYSTEMS	0	4684	5478	3043	1008	1002	3036	4561	0	22812

A. Mission Description and Budget Item Justification: Combat Service Support (CSS) Automated Information System Interface (CAISI) is a high-data-rate wireless system that provides sensitive but unclassified (SBU) data and is the backbone for logistics connectivity down to each Combat Service Support (CSS) computer systems located within the tactical battlespace. The CAISI design effort focuses on integrating COTS equipment from various manufacturers to create a standard deployable set of communications equipment. Current CAISI equipment is being fielded with new equipment training to logistics units Army-wide. Maintenance support is provided at a depot level with additional support at forward repair activities. Computer based training and on-line refresher training and technical support is also provided for CAISI users. A standard set of CAISI equipment currently provides network communications to up to 40 tents, vans, or shelters within a 7 x 7 kilometer area using wireless bridging between tents. CAISI design is developed from a lifecycle perspective to ensure reliability and supportability in real world conditions. Ongoing design efforts are being focused on three areas: 1) updating security accreditation for compliance with new communications security regulations, 2) improving the distance and range capabilities, 3) design of a lifecycle replacement version of CAISI scheduled for fielding starting FY 2007.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Research Test and evaluate COTS equipment for upgrades to CAISI to extend range capabilities, improve security posture of CAISI system to meet new wireless regulations, and develop a new version of CAISI with improved capabilities ready to field in FY07 as a life-cycle replacement.	0	4684	5478	3043
Totals	0	4684	5478	3043

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA, BD7000	3747	5537	6428	9794	9937	10089	10114	10140	0	65786
OMA, 423612	978	2591	2709	3563	3622	3684	3684	3684	0	24515

C. Acquisition Strategy: Acquisition strategy will be to obtain engineering support, satellite air time as well as various hardware and software to augment and enhance CAISI capabilities. FY06-07 funds the development of prototypes, test and select of most promising lifecycle replacement equipment, and develops additional components for the new CAISI to fulfill unforeseen emerging regulatory requirements.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: None of this will be a COTS effort. All funding will be used for test and evaluation.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: All of this effort will be overseen with personnel using OPA and OMA funding.

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test satellite links and associated equipment	C/FFP	ISEC, Ft Huachuca, AZ	0	4684	2Q	5478		3043		Continue	13205	0
Subtotal:			0	4684		5478		3043		Continue	13205	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605013A - Information Technology Development	PROJECT 474
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:												

Remarks: All of this effort will be overseen with personnel funded with OPA and OMA dollars.

Project Total Cost:			0	4684		5478		3043		Continue	13205	0
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
474

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Test and Evaluation																																

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
474

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Test and Evaluation		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0605013A - Information Technology Development					PROJECT 738		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
738 ACQUISITION COLLABORATIVE ENVIRONMENT	0	0	13418	14916	22284	19977	11623	9787	0	92005

A. Mission Description and Budget Item Justification: Advanced Collaborative Environment (ACE) will establish a common, collaborative, net-centric and digital environment allowing Army acquisition enterprise resources and decision makers to effectively participate as integrated service-oriented "business units" within the larger Army system acquisition process. The ACE environment will be characterized by a single collaborative environment, common acquisition community-wide processes and standards, and accessible acquisition community-wide data sources. ACE will operate through a Net-Centric Enterprise Services (NCES) Environment comprised of one virtual network and shared data. It will provide an evolutionary capability to electronically and seamlessly collaborate through secure, authorized two-way information channels associated with well-defined acquisition communities of interest (COI). It will also be the system that binds Domain "edge user" resources into integrated COIs and would not fundamentally replace any edge user resources. Fully deployed, ACE will reduce, and likely eliminate, the proliferation of stovepipe Acquisition Lifecycle Management (ALM) systems, and enable manpower, management resources and funds to be more effectively and efficiently channeled to acquisition end items and the warfighter rather than the acquisition management process.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Analysis and Design, Development and Integration	0	0	7066	8177
Training (Hub, New user, Node, Documentation)	0	0	428	468
Application Licenses	0	0	3350	3410
Program Management	0	0	2574	2861
Totals	0	0	13418	14916

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
738

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OMA APE 432612	0	0	10182	8577	7059	12432	10900	9439	0	58589

C. Acquisition Strategy: The Advanced Collaborative Environment (ACE) acquisition strategy will make extensive use of integrated product teams (IPTs) consisting of in-house matrix and contract support. The strategy will be accomplished via performance-based acquisition procurement efforts. Spiral software development will be employed through the evolutionary acquisition of time-phased requirements through blocks of capability building on preceding blocks while ongoing to full, interoperable capability. ACE must support the near term needs of the acquisition community while achieving the long-term goal of a collaborative business enterprise environment. The evolutionary acquisition approach ACE is taking will acquire contractor support and services for program management and integration early in its acquisition life cycle phases. Phased implementation and incremental development will align with the Acquisition Business Enterprise Architecture. Implementation of maturing technology and commercial off-the-shelf software (COTS) will provide the necessary flexibility for building an information technology environment to sustain a collaborative business enterprise and achieve the Department of Defense goal for a Global Information Grid (GIG).

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
738

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Analysis and Design, Development , Integration and Testing	TBD	TBD	0	0		9071	1Q	8992	1Q	Continue	18063	0
Subtotal:			0	0		9071		8992		Continue	18063	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Training	TBD	TBD	0	0		428	1Q	468	1Q	Continue	Continue	0
Subtotal:			0	0		428		468		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test and Evaluation			0	0		625	1Q	1775	1Q	Continue	Continue	0
Subtotal:			0	0		625		1775		Continue	Continue	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	TBD	TBD	0	0		2574	1Q	2861	1Q	Continue	Continue	0
b . Government FTE	TBD		0	0		720	1Q	820	1Q	Continue	Continue	0
Subtotal:			0	0		3294		3681		Continue	Continue	0

Project Total Cost:			0	0		13418		14916		Continue	Continue	0
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Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
738

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
ACE - enable 3 key COI's			1-4Q	1-4Q				
Milestone B decision				2Q				
Tech Prototyping & Component Integration Readiness and Benefits Assessments			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-3Q
Milestone C decision					2Q			
Produce and Deploy 13 remaining COI's					1-4Q	1-4Q	1-4Q	
Evolve and Sustain 16 COI's					1-4Q	1-4Q	1-4Q	1-4Q
Test and Evaluation			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q