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Supporting Data FY 2009 Budget Estimate – February 2008

DESCRIPTIVE SUMMARIES OF THE



**RESEARCH, DEVELOPMENT, TEST AND EVALUATION
Army Appropriation, Budget Activities 6 and 7**

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

Persuasive in Peace, Invincible in War

VOLUME III

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**DESCRIPTIVE SUMMARIES FOR PROGRAM ELEMENTS
OF THE
RESEARCH, DEVELOPMENT, TEST AND
EVALUATION, ARMY
FY 2009
BUDGET ESTIMATE
FEBRUARY 2008**

**VOLUME III
Budget Activities 6 and 7**

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

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**FY 2009 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 2007 through FY 2009.

2. Relationship of the FY 2009 Budget Submission to the FY 2008 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.

OLD <u>PE/PROJECT</u>	<u>NEW PROJECT TITLE</u>	NEW <u>PE/PROJECT</u>
0603460A/JA2	Joint Air-to-Ground Missile (JAGM)	0605450A/JA6
0603782A/355	Warfighter Information Network – Tactical (WIN-T) – Increment 2 – Initial Networking on the Move	0603782A/367
0603782A/355	WIN-T Increment 3 – Full Networking on the Move	0603782A/372
0603827A/S51	ACIS Engineering Development	0604601A/S61
0604642A/E40	Joint Light Tactical vehicle (JLTV) – Advanced Development	0603804A/L04
0605326A/312	Current Force Capability Gaps	0605326A/317

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

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C. Establishment of New FY 2009 Program Elements/Projects. There are no major system new starts. Minor new initiatives for FY 2009 are shown below.

<u>TITLE</u>	<u>PE/PROJECT</u>
Robotics Autonomy, Manipulation, and Portability Research	0601102A/T63
Network Science And Technology Research Center	0601104A/J22
Warfighter Information Network – Tactical (WIN-T) – Increment 2 – Initial Networking on the Move	0603782A/367
Joint Light Tactical Vehicle (JLTV) – Advanced Development	0603804A/L04
Current Force Capability Gaps	0605326A/317
Joint Air-to-Ground Missile (JAGM)	0605450A/JA6

D. FY 2009 programs for which funding existed in the FY 2008 President’s Budget Submit (February 2007), but which are no longer funded in the FY 2009 President’s Budget Submit.

<u>PE/PROJECT</u>	<u>TITLE</u>	<u>BRIEF EXPLANATION</u>
0603327A/S32	Joint Single Integrated Air Picture (SIAP)	Program Terminated
0603460A/JA2	Joint Air-to-Ground Missile (JAGM)	Program Restructured
0603782A/355	Warfighter Information Network – Tactical (WIN-T)	Program Restructured
0604642A/E40	Light Tactical Vehicle (LTV)	Program Restructured

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

0203801A/DF8/DF9	0603009A
0203808A	0603020A
0301359A	0603322A
0602122A	0603710A/C65
0603005A/C66	0604328A

4. The Consolidated Appropriations Act, 2008 (P.L. 110-161). The Research, Development, Test and Evaluation, Army appropriation did not receive any FY 2008 Consolidated Appropriations Act funding.

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5. Performance Metrics. Performance metrics used in the preparation of this justification book may be found in the FY 2009 Army Performance Budget Justification Book, dated March 2008.

6. Program Assessment Rating Tool (PART). In accordance with the President's Management Agenda, Budget and Performance Integration initiative, this program has been assessed using PART. Remarks regarding program performance and plans for performance improvement can be located at the Expectmore.gov website.

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Exhibit R-1

08-Jan-2008

		Thousands of Dollars	
	FY 2007	FY 2008	FY 2009
Summary Recap of Budget Activities			
Basic Research	353,401	379,064	379,393
Applied Research	1,188,678	1,175,294	723,502
Advanced Technology Development	1,253,792	1,336,998	738,858
Advanced Component Development And Prototypes	522,833	1,140,451	951,822
System Development And Demonstration	5,179,195	5,181,817	4,981,024
Management Support	1,462,511	1,186,345	1,113,197
Operational System Development	1,390,182	1,640,365	1,632,454
Total RDT&E, Army	11,350,592	12,040,334	10,520,250

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				Thousands of Dollars		
				FY 2007	FY 2008	FY 2009
Basic Research						
1	0601101A	01	In-House Laboratory Independent Research	18,404	21,528	19,832
2	0601102A	01	Defense Research Sciences	166,403	165,020	176,959
3	0601103A	01	University Research Initiatives	76,331	82,416	76,980
4	0601104A	01	University And Industry Research Centers	92,263	110,100	105,622
TOTAL: Basic Research				353,401	379,064	379,393
Applied Research						
5	0602105A	02	Materials Technology	62,254	64,517	26,985
6	0602120A	02	Sensors And Electronic Survivability	48,396	62,910	46,147
7	0602122A	02	Tractor Hip	8,261	4,338	18,192
8	0602211A	02	Aviation Technology	39,383	43,280	42,013
9	0602270A	02	Electronic Warfare Technology	30,458	30,013	16,611
10	0602303A	02	Missile Technology	66,141	60,935	48,174
11	0602307A	02	Advanced Weapons Technology	25,996	32,705	19,664
12	0602308A	02	Advanced Concepts And Simulation	23,921	22,903	17,048
13	0602601A	02	Combat Vehicle And Automotive Technology	88,749	93,622	55,234
14	0602618A	02	Ballistics Technology	62,516	68,899	71,550
15	0602622A	02	Chemical, Smoke And Equipment Defeating Technology	12,665	8,976	2,295
16	0602623A	02	Joint Service Small Arms Program	6,012	6,962	7,531
17	0602624A	02	Weapons And Munitions Technology	120,794	102,681	30,576
18	0602705A	02	Electronics And Electronic Devices	80,621	105,492	45,278
19	0602709A	02	Night Vision Technology	35,324	34,924	25,647
20	0602712A	02	Countermines Systems	26,332	30,294	21,815
21	0602716A	02	Human Factors Engineering Technology	40,705	39,763	17,348
22	0602720A	02	Environmental Quality Technology	19,203	20,076	16,064
23	0602782A	02	Command, Control, Communications Technology	46,332	36,955	24,014
24	0602783A	02	Computer And Software Technology	6,602	9,803	5,495
25	0602784A	02	Military Engineering Technology	50,817	58,693	52,066
26	0602785A	02	Manpower/Personnel/Training Technology	15,705	16,102	16,412
27	0602786A	02	Warfighter Technology	43,200	36,237	21,948
28	0602787A	02	Medical Technology	228,291	184,214	75,395
Total: Applied Research				1,188,678	1,175,294	723,502

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				Thousands of Dollars		
				FY 2007	FY 2008	FY 2009
Advanced Technology Development						
29	0603001A	03	Warfighter Advanced Technology	63,981	86,103	46,793
30	0603002A	03	Medical Advanced Technology	291,716	299,676	59,043
31	0603003A	03	Aviation Advanced Technology	93,880	98,899	57,277
32	0603004A	03	Weapons And Munitions Advanced Technology	95,165	85,981	73,697
33	0603005A	03	Combat Vehicle And Automotive Advanced Technology	200,974	245,629	107,992
34	0603006A	03	Command, Control, Communications Advanced Technolog	11,626	14,082	9,183
35	0603007A	03	Manpower, Personnel And Training Advanced Technology	9,022	6,740	6,853
36	0603008A	03	Electronic Warfare Advanced Technology	49,542	56,591	50,961
37	0603009A	03	Tractor Hike	9,217	12,553	14,562
38	0603015A	03	Next Generation Training & Simulation Systems	21,561	22,365	18,881
39	0603020A	03	Tractor Rose	5,018	6,485	11,575
40	0603100A	03	IED Defeat Technology Development		2,385	
41	0603103A	03	Explosives Demilitarization Technology	25,004	21,511	10,564
42	0603105A	03	Military HIV Research	12,559	14,903	7,116
43	0603125A	03	Combating Terrorism - Technology Development	12,953	12,978	13,064
44	0603238A	03	Global Surveillance/Air Defense/Precision Strike Techn	12,469		
45	0603270A	03	Electronic Warfare Technology	24,674	41,951	23,996
46	0603313A	03	Missile And Rocket Advanced Technology	69,885	77,259	63,998
47	0603322A	03	Tractor Cage	18,467	18,330	12,372
48	0603606A	03	Landmine Warfare And Barrier Advanced Technology	29,406	30,700	30,797
49	0603607A	03	Joint Service Small Arms Program	11,788	10,629	8,809
50	0603710A	03	Night Vision Advanced Technology	73,826	53,910	39,916
51	0603728A	03	Environmental Quality Technology Demonstrations	16,651	14,887	15,519
52	0603734A	03	Military Engineering Advanced Technology	27,100	28,355	7,654
53	0603772A	03	Advanced Tactical Computer Science And Sensor Technology	67,308	74,096	48,236
Total: Advanced Technology Development				1,253,792	1,336,998	738,858
Advanced Component Development And Prototypes						
54	0603024A	04	Unique Item Identification (UID)	1,498	665	649
55	0603305A	04	Army Missile Defense Systems Integration	85,637	127,408	14,005
56	0603308A	04	Army Space Systems Integration	29,109	49,285	19,986
57	0603327A	04	Air And Missile Defense Systems Engineering	134,355	170,383	116,410
58	0603460A	04	Joint Air-To-Ground Missile (JAGM)		53,160	
59	0603619A	04	Landmine Warfare And Barrier - Adv Dev	1,022	24,580	29,234
60	0603627A	04	Smoke, Obscurant And Target Defeating Sys-Adv Dev	5,314	9,363	3,840

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				Thousands of Dollars		
				FY 2007	FY 2008	FY 2009
61	0603639A	04	Tank And Medium Caliber Ammunition	3,476	47,474	45,866
62	0603653A	04	Advanced Tank Armament System (ATAS)	8,391	143,568	108,012
63	0603747A	04	Soldier Support And Survivability ¹	20,865	5,751	30,716
64	0603766A	04	Tactical Electronic Surveillance System - Adv Dev	20,001	14,423	12,275
65	0603774A	04	Night Vision Systems Advanced Development	5,168	3,432	2,588
66	0603779A	04	Environmental Quality Technology - Dem/Val	23,693	18,580	5,355
67	0603782A	04	Warfighter Information Network-Tactical - Dem/Val	119,288	320,068	414,357
68	0603790A	04	NATO Research And Development	4,189	4,927	5,041
69	0603801A	04	Aviation - Adv Dev	8,848	6,440	7,455
70	0603804A	04	Logistics And Engineer Equipment - Adv Dev	9,799	37,993	44,141
71	0603805A	04	Combat Service Support Control System Evaluation	8,403	14,959	17,788
72	0603807A	04	Medical Systems - Adv Dev	22,511	29,689	26,308
73	0603827A	04	Soldier Systems - Advanced Development	10,135	20,090	36,558
74	0603850A	04	Integrated Broadcast Service	1,131	38,213	11,238
Total: Advanced Component Development And Prototypes				522,833	1,140,451	951,822
System Development And Demonstration						
75	0604201A	05	Aircraft Avionics	43,662	57,420	71,562
76	0604220A	05	Armed, Deployable OH-58D	217,203	181,145	135,652
77	0604270A	05	Electronic Warfare Development	41,540	57,169	32,325
78	0604321A	05	All Source Analysis System ²	10,338	5,384	16,465
79	0604328A	05	Tractor Cage	15,574	17,707	16,807
80	0604329A	05	Common Missile	24,210		
81	0604601A	05	Infantry Support Weapons ³	44,550	63,026	42,414
82	0604604A	05	Medium Tactical Vehicles	12,469	6,354	1,949
83	0604609A	05	Smoke, Obscurant And Target Defeating Sys - Eng Dev	5,129	1,339	5,603
84	0604622A	05	Family Of Heavy Tactical Vehicles	13,034	12,666	2,901
85	0604633A	05	Air Traffic Control	7,877	8,899	14,214
86	0604642A	05	Light Tactical Wheeled Vehicles ⁴	24,358	38,256	

¹ FY 2007 funding total includes \$7,625 received in GWOT Supplemental. FY 2008 funding total does not include \$31,621 previously requested for current FY 2008 GWOT requirements.

² FY 2007 funding total includes \$3,400 received in GWOT Supplemental.

³ FY 2007 funding total includes \$8,158 received in GWOT Supplemental. FY 2008 funding total does not include \$8,158 previously requested for current FY 2008 GWOT requirements.

⁴ FY 2008 funding total does not include \$20,000 previously requested for current FY 2008 GWOT requirements.

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				Thousands of Dollars		
				FY 2007	FY 2008	FY 2009
87	0604645A	05	Armored Systems Modernization (ASM) - Eng Dev	2,927,532		
88	0604646A	05	Non-Line Of Sight Launch System	313,981	253,075	200,099
89	0604647A	05	Non-Line Of Sight Cannon	108,689	136,929	89,841
90	0604660A	05	FCS Manned Grd Vehicles & Common Grd Vehicle		592,254	774,257
91	0604661A	05	FCS Systems Of Systems Engr & Program Mgmt		1,497,321	1,413,945
92	0604662A	05	FCS Reconnaissance (UAV) Platforms		43,388	34,379
93	0604663A	05	FCS Unmanned Ground Vehicles		90,091	96,918
94	0604664A	05	FCS Unattended Ground Sensors		10,929	12,967
95	0604665A	05	FCS Sustainment & Training R&D		647,649	539,145
96	0604666A	05	Modular Brigade Enhancement	27,900	64,385	64,900
97	0604710A	05	Night Vision Systems - Eng Dev	40,325	47,317	44,508
98	0604713A	05	Combat Feeding, Clothing, And Equipment	2,922	2,485	2,499
99	0604715A	05	Non-System Training Devices - Eng Dev	122,258	35,731	35,424
100	0604741A	05	Air Defense Command, Control And Intelligence - Eng Dev ¹	58,492	21,375	22,415
101	0604742A	05	Constructive Simulation Systems Development	38,849	31,645	26,244
102	0604746A	05	Automatic Test Equipment Development ²	7,896	9,961	23,582
103	0604760A	05	Distributive Interactive Simulations (Dis) - Eng Dev	20,052	18,180	16,095
104	0604780A	05	Combined Arms Tactical Trainer (CATT) Core	37,683	36,800	29,468
105	0604783A	05	Joint Network Management System	5,026	2,759	676
106	0604802A	05	Weapons And Munitions - Eng Dev	96,673	65,236	52,140
107	0604804A	05	Logistics And Engineer Equipment - Eng Dev	33,205	47,108	37,718
108	0604805A	05	Command, Control, Communications Systems - Eng Dev	10,766	9,942	9,795
109	0604807A	05	Medical Materiel/Medical Biological Defense Equipment	22,226	27,745	34,971
110	0604808A	05	Landmine Warfare/Barrier - Eng Dev	97,555	160,079	126,475
111	0604814A	05	Artillery Munitions - EMD	99,344	64,214	78,197
112	0604817A	05	Combat Identification	38	11,290	10,909
113	0604818A	05	Army Tactical Command & Control Hardware & Software	67,619	100,132	67,535
114	0604820A	05	Radar Development	2,446	7,022	
115	0604822A	05	General Fund Enterprise Business System (GFEBS)	59,998	111,873	60,308
116	0604823A	05	Firefinder	53,408	76,767	47,845
117	0604827A	05	Soldier Systems - Warrior Dem/Val	28,227	1,589	15,790
118	0604854A	05	Artillery Systems - EMD	1,598	24,067	42,300
119	0604869A	05	Patriot/Meads Combined Aggregate Program (CAP)	322,915	369,786	431,270

¹ FY 2007 funding total includes \$31,100 received in GWOT Supplemental. FY 2008 funding total does not include \$38,900 previously requested for current FY 2008 GWOT requirements.

² FY 2008 funding total does not include \$6,500 previously requested for current FY 2008 GWOT requirements.

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				Thousands of Dollars		
				FY 2007	FY 2008	FY 2009
120	0604870A	05	Nuclear Arms Control Monitoring Sensor Network	7,193	7,253	6,260
121	0605013A	05	Information Technology Development ¹	104,435	106,075	73,740
122	0605450A	05	Joint Air-To-Ground Missile (JAGM)			118,517
Total: System Development And Demonstration				5,179,195	5,181,817	4,981,024
Management Support						
123	0604256A	06	Threat Simulator Development	23,258	23,339	21,416
124	0604258A	06	Target Systems Development	10,113	17,787	13,498
125	0604759A	06	Major T&E Investment	64,067	66,276	64,618
126	0605103A	06	Rand Arroyo Center	20,792	19,149	16,339
127	0605301A	06	Army Kwajalein Atoll	173,455	180,052	174,601
128	0605326A	06	Concepts Experimentation Program	24,787	29,652	28,271
129	0605502A	06	Small Business Innovative Research	272,163	2,385	
130	0605601A	06	Army Test Ranges And Facilities	381,740	355,715	342,079
131	0605602A	06	Army Technical Test Instrumentation And Targets	82,525	85,862	74,624
132	0605604A	06	Survivability/Lethality Analysis	42,769	41,681	41,066
133	0605605A	06	Dod High Energy Laser Test Facility	16,135	8,746	2,835
134	0605606A	06	Aircraft Certification	4,524	4,658	5,054
135	0605702A	06	Meteorological Support To RDT&E Activities	8,302	8,294	8,289
136	0605706A	06	Materiel Systems Analysis	16,464	16,423	17,028
137	0605709A	06	Exploitation Of Foreign Items	4,974	3,291	3,530
138	0605712A	06	Support Of Operational Testing	79,212	78,797	72,942
139	0605716A	06	Army Evaluation Center	55,554	61,295	63,382
140	0605718A	06	Simulation & Modeling For Acq, Rqts, & Tng (SMART)	5,270	6,302	5,325
141	0605801A	06	Programwide Activities ²	70,598	73,256	73,748
142	0605803A	06	Technical Information Activities	51,266	42,715	42,905
143	0605805A	06	Munitions Standardization, Effectiveness And Safety	36,145	40,947	20,857
144	0605857A	06	Environmental Quality Technology Mgmt Support	4,279	4,926	5,125
145	0605898A	06	Management HQ - R&D	13,893	14,797	15,665
146	0909999A	06	Financing For Cancelled Account Adjustments	226		
Total: Management Support				1,462,511	1,186,345	1,113,197
Operational System Development						
147	0603778A	07	MLRS Product Improvement Program	63,189	53,712	59,749
148	0603820A	07	Weapons Capability Modifications UAV	1,549	3,875	

¹ FY 2008 funding total does not include \$5,000 previously requested for current FY 2008 GWOT requirements.

² FY 2008 funding total does not include \$20 previously requested for current FY 2008 GWOT requirements.

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			Thousands of Dollars		
			FY 2007	FY 2008	FY 2009
149	0102419A	07 Aerostat Joint Project Office	237,795	478,204	356,434
150	0203726A	07 Adv Field Artillery Tactical Data System	18,848	16,730	15,860
151	0203735A	07 Combat Vehicle Improvement Programs	13,873	41,192	141,114
152	0203740A	07 Maneuver Control System	33,947	45,191	37,151
153	0203744A	07 Aircraft Modifications/Product Improvement Programs	299,405	328,514	452,787
154	0203752A	07 Aircraft Engine Component Improvement Program	836	1,467	332
155	0203758A	07 Digitization	14,490	9,675	9,534
156	0203759A	07 Force XXI Battle Command, Brigade And Below (FBCB2)	26,068	32,194	38,418
157	0203764A	07 Tactical Wheeled Vehicle Improvement Program	11,742		
158	0203801A	07 Missile/Air Defense Product Improvement Program	16,529	30,026	37,871
159	0203802A	07 Other Missile Product Improvement Programs	19,086	1,885	1,527
160	0203808A	07 Tractor Card	7,013	16,467	19,601
161	0208010A	07 Joint Tactical Communications Program (TRI-TAC)	5,621	1,527	920
162	0208053A	07 Joint Tactical Ground System	14,987	23,215	1,957
163	0208058A	07 Joint High Speed Vessel (JHSV)	19,752	5,116	2,936
164	0301359A	07 Special Army Program			
165	0301555A	07 Classified Programs			
166	0301556A	07 Special Program			
167	0303028A	07 Security And Intelligence Activities	11,788	4,571	
168	0303140A	07 Information Systems Security Program ¹	56,583	31,403	38,090
169	0303141A	07 Global Combat Support System	47,092	94,089	104,934
170	0303142A	07 SATCOM Ground Environment (Space)	31,790	107,092	106,327
171	0303150A	07 WWMCCS/Global Command And Control System ²	16,392	24,620	12,922
172	0303158A	07 Joint Command And Control Program (JC2) ³	3,929	10,330	15,203
173	0305204A	07 Tactical Unmanned Aerial Vehicles	171,257	100,854	50,976
174	0305206A	07 Airborne Reconnaissance Systems	22		
175	0305208A	07 Distributed Common Ground/Surface Systems ⁴	135,298	90,088	57,704
176	0702239A	07 Avionics Component Improvement Program	1,281	1,017	1,023
177	0708045A	07 End Item Industrial Preparedness Activities	109,335	87,311	69,084
178	1001018A	07 NATO Joint Stars	685		

¹ FY 2007 funding total includes \$31,600 received in GWOT Supplemental. FY 2008 funding total does not include \$23,300 previously requested for current FY 2008 GWOT requirements.

² FY 2008 funding total does not include \$3,800 previously requested for current FY 2008 GWOT requirements.

³ FY 2008 funding total does not include \$6,200 previously requested for current FY 2008 GWOT requirements.

⁴ FY 2008 funding total does not include \$12,300 previously requested for current FY 2008 GWOT requirements.

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08-Jan-2008

	Thousands of Dollars		
	FY 2007	FY 2008	FY 2009
Total: Operational System Development	1,390,182	1,640,365	1,632,454
Total: RDT&E, Army	11,350,592	12,040,334	10,520,250

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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0604256A - THREAT SIMULATOR DEVELOPMENT					PROJECT 976	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
976 ARMY THREAT SIM (ATS)	23258	23339	21416	22200	17011	17393	17789	

A. Mission Description and Budget Item Justification: This program supports the design, development, acquisition, integration and fielding of realistic mobile threat simulators and realistic threat simulation products utilized in Army training and developmental and operational tests. While this project originally funded simulators representing Soviet equipment, the changing world order has expanded the scope of this program to address other world threats. Army Threat Simulator and Threat Simulation products are utilized to populate test battlefields for U.S. Army Test and Evaluation Command (ATEC), to conduct developmental and operational tests, and to support Program Executive Office (PEO) required user testing in System Integration Laboratories and hardware/simulation in-the-loop facilities. Army threat simulator and threat simulation products developed or fielded under this program support Army-wide, non-system specific threat product requirements. Each capability is pursued in concert and coordination with existing Army and tri-service capabilities to eliminate duplication of products and services, while providing the proper mix of resources needed to support Army testing and training. These battlefield simulators represent systems (e.g. missile systems, command, control and communications systems, electronic warfare systems, etc.) that are used to portray a realistic threat environment during testing of U.S. weapon systems. Simulator development is responsive to Office of the Secretary of Defense and General Accounting Office guidance for the Army to conduct operational testing in a realistic threat environment. Actual threat equipment is acquired when appropriate (in lieu of development) and total package fielding is still required (i.e., instrumentation, operations and maintenance, manuals, new equipment training, etc.). Threat simulator development is accomplished under the auspices of the Project Manager for Instrumentation, Targets and Threat Simulators (PM ITTS) and the Director, Operational Test and Evaluation, Threat Simulator Investment Working Group.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Completed development of the Intelligence and Electronic Warfare scenario generation system for test scenario planning and execution.	5785		
Completed development product enhancements for XM11S simulator threat system.	746		
Continue development of Network Exploitation Test Tool (NETT).	2526	1144	1223
Develop Advanced Electronic Order of Battle (AEOB) upgrade and develop mobile threat emitter system interoperable with threat scenario outputs.	2118	1919	
Conduct Threat Systems Management Office Operations efforts.	6168	6469	6548
Develop Threat Intelligence and Electronic Warfare Environment to simulate Electronic Warfare capabilities.	2133	2560	2853
Completed development of radio frequency (RF) Surface-to-Air Missile (SAM) radar prototype.	1300		
Develop simulations of threat camouflage, concealment, deception and obscurants (CCD&O) techniques (formerly known as threat deception techniques).	1182	1139	1502
Follow-on development for an Electronic Combat and Counter Terrorism Training Range for threat scenarios. This is a follow-on to a FY07 Congressional Add Threat Systems Management satellite office for Townsend Electronic Combat Training Range.	1300	1600	
Begins development of the functionality of the Threat Battle Command Center (TBCC) to support new threat systems/equipment.		3781	3867
Begins development of Threat Signal Injection Jammer.		1060	1894

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
6 - Management support	0604256A - THREAT SIMULATOR DEVELOPMENT	976	
Begins development on location tracking capability of MCNI-TR.		1437	
Begins development of Threat Wireless Network Exploitation Test Tool (NETT).		1797	3529
Small Business Innovative Research/Small Business Technology Transfer Programs		433	
Total	23258	23339	21416

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0604256A - THREAT SIMULATOR DEVELOPMENT	PROJECT 976
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<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	23517	21887	21482
Current BES/President's Budget (FY 2009)	23258	23339	21416
Total Adjustments	-259	1452	-66
Congressional Program Reductions		-148	
Congressional Rescissions			
Congressional Increases		1600	
Reprogrammings	173		
SBIR/STTR Transfer	-432		
Adjustments to Budget Years			-66

FY08 Program Change Summary includes a Congressional Add of \$1,600 thousand for Electronic Combat and Counter Terrorism Training and (\$148 thousand) for Congressional Program Reductions.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE					
6 - Management support		0604258A - TARGET SYSTEMS DEVELOPMENT					
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
Total Program Element (PE) Cost	10113	17787	13498	13703	8888	8943	9004
238 AERIAL TARGETS	6341	6176	6226	6415	5082	5199	5318
459 GROUND TARGETS	3772	11611	7272	7288	3806	3744	3686

A. Mission Description and Budget Item Justification: This program funds aerial and ground target hardware and software development, maintenance, and upgrades. The overall objective is to ensure validation of weapon system accuracy and reliability by developing aerial and ground targets essential for test and evaluation (T&E). These targets are economical and expendable, remotely controlled or stationary, and often destroyed in use. The Army is the Tri-Service lead under Reliance for providing rotary wing, mobile ground, towed, and designated targets for T&E. The Army executes development of some Service-peculiar target requirements in support of quality assurance, lot acceptance, and training and continues development of Service-peculiar and on-going target materiel upgrades to maintain continuity with current weapons technology and trends in modern and evolving Army weapons.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
6 - Management support	0604258A - TARGET SYSTEMS DEVELOPMENT		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	12785	13499	13570
Current BES/President's Budget (FY 2009)	10113	17787	13498
Total Adjustments	-2672	4288	-72
Congressional Program Reductions		-112	
Congressional Rescissions			
Congressional Increases		4400	
Reprogrammings	-2357		
SBIR/STTR Transfer	-315		
Adjustments to Budget Years			-72

The FY07 Change Summary includes realigning the congressional add "Next Generation Ice Protection Technologies for UAVs" (\$2.0 million) to PM UAV (0305204A), to execute in accordance with Congressional intent. FY08 Change Summary includes \$4.4 million of Congressional Adds (\$2.0 million for Next Generation Ice Protection Technologies for Unmanned Aerial Vehicles and \$2.4 million for Mobile Objects for Net-Centric Operations) and (\$112 thousand) of Congressional Program Reductions.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0604258A - TARGET SYSTEMS DEVELOPMENT					PROJECT 238	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
238 AERIAL TARGETS	6341	6176	6226	6415	5082	5199	5318

A. Mission Description and Budget Item Justification: Aerial Targets support Army Transformation and the Global War on Terrorism by providing for development, acquisition, operation, storage, update, and maintenance of realistic surrogate or acquired threat high-performance, multi-spectral aerial targets and development of virtual target computer models of aerial targets. Modern weapons require test, evaluation, and training using threat representative aerial targets to assess their effectiveness on the battlefield. This program encompasses a family of rotary and fixed-wing targets; full-scale, miniature and subscale targets; virtual targets; ancillary devices; and their control systems. These products are required to adequately stress weapon systems undergoing test and evaluation (T&E). In order to stress systems under test and evaluation, aerial targets must have flight characteristics, signatures, and other performance factors that emulate the modern threat. This includes long-range planning to determine future target needs and development of coordinated requirement documents; the management of target research, development, test and evaluation process; execution of the validation process to ensure that surrogate targets adequately represent the threat; development and acquisition of surrogate and acquired targets; and continuing maintenance, storage, and development/enhancements/update via engineering services of the developed and acquired threat targets to ensure availability for the T&E customer. The Army is the Reliance lead for rotary wing targets and towed target developments and the Tri-Service lead for procurement and enhancement of the MQM-107 fixed wing target.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Continues management and sustainment of 12 Army (Reliance Lead) Rotary Wing Targets, including updates for obsolescence, maintenance, and safety to support T&E programs such as Medium Extended Air Defense System (MEADS), Surface Launched Advanced Medium Range Air to Air Missile (SLAMRAAM), Apache Block III, and others.	879	668	531
Provides Research, Development, Test and Evaluation (RDT&E) portion of funds needed to update aging MQM-107 equipment to overcome obsolescence for spare and repair parts, and to maintain equipment and documentation for safe operations supporting T&E programs such as Patriot, Stinger, Joint Land Attack Cruise Missile Defense Elevated Netted Sensors (JLENS), MEADS, SLAMRAAM, and classified programs for Army and Tri-Service customers. FY 2005 began the process to acquire replacements for expended targets, which will include development of updated component/subsystem replacements of no-longer-available, obsolete equipment and systems to reduce operational cost.	1329	1302	1239
Completes redesign and testing of upgraded Target Tracking Control System (TTCS) to new design. Complete testing of upgraded initial test sets. Continue to support current TTCS to maintain operations until all TTCSs are upgraded. Continue management of Targets Management Initiative to develop and integrate a set of Common Digital Architecture control equipment into aerial targets to improve performance and reduce operating costs. Completes upgrade of remaining TTCS to new configuration and begins sustainment. Also develops/improves integrated test set, operator displays, software performance enhancements, and documentation of design. This will provide support to programs such as Patriot, SLAMRAAM, JLENS, MEADS, and others.	854	716	696
Continues development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets, and ancillary devices. Continues development and testing of Low Cost Towed target systems (Cruise Missile Tow Target, Reduced Radar Tow Target, and the Special Low Altitude Tow Target) emulating current threats at a very low cost to Patriot, JLENS, and classified customers. Starting in FY07, signature modifications and performance enhancements to these targets began.	1079	625	712

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
6 - Management support	0604258A - TARGET SYSTEMS DEVELOPMENT	238		
Integrated Avionics Program incorporates Central Test and Evaluation Investment Program (CTEIP) Common Digital Architecture into aerial targets controlled by TTCS, improving reliability, maintainability, and target performance while reducing operational cost. Provides RDT&E funding to initialize production and provide maintainer and operator training, and finalize technical documentation. The customer will provide funding and training for production units.	221	299	238	
Funding supports the Aerial Virtual Targets in the research and development of evolving Army and DoD simulation standards and evolving implementation techniques; fabricates additional simulation target models of airplanes, helicopters, missiles, and unmanned aerial vehicles in commonly used model formats; develops simulation target model infrared and radar signature models, and provides archiving and distribution of simulation target models to simulation developers throughout the Army and DoD test and evaluation communities. Simulation target models are employed to facilitate simulations for both developmental and operational testing (test planning, test rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions). These models will be used by Developmental Test Command's (DTC) simulations, Operational Test Command's (OTC) Analytical Simulation and Instrumentation Suite (OASIS), and multiple weapon systems' T&E (e.g. Future Combat System, Patriot, SBCT (Stryker), MEADS, etc.). These models are available on-line to all T&E simulation developers.	609	904	913	
Develops, tests and provides generic, tactical class Unmanned Aerial System Targets (UAS-T) to provide threat representative support for MEADS/SLAMRAAM testing in FY08-10 and MEADS testing in future years. Provides management of approximately 20 customer funded production air vehicles for Developmental Testing (DT) and initial targets fleet, ground support equipment, and maintainer and operator training. TTCS will be utilized for target control. This effort provides significant cost avoidances over using real UAVs for T&E Targets.	794	478	552	
Initiated Airborne Control System for Rotary Wing targets, incorporated the Central Test and Evaluation Investment Program(CTEIP)Common Digital Architecture into aerial rotary wing targets controlled by TTCS; improving reliability, maintainability, and target performance while reducing operational cost.	576			
Provides for management testing and fielding of replacement Rotary Wing (RW) targets to replace the current aging and unsupportable targets (aircraft & drone kits) with new fully supportable/maintainable RW capability for T&E customers. This capability is required to provide RW targets for kill and non-kill missions for T&E tests for customers such as MEADS, SLAMRAAM, FCS-SoS, EAADS, APACHE and others.		1025	1345	
Small Business Innovative Research / Small Business Technology Transfer Programs		159		
Total	6341	6176	6226	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0604258A - TARGET SYSTEMS DEVELOPMENT					PROJECT 459	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
459 GROUND TARGETS	3772	11611	7272	7288	3806	3744	3686

A. Mission Description and Budget Item Justification: This program funds Army efforts to support test and evaluation (T&E) of advanced weapon systems and supports Army Transformation by developing surrogates, acquiring foreign equipment and developing virtual target computer models of ground vehicle targets. These products are required to adequately stress weapon systems undergoing T&E. This tasking includes long-range planning to determine future target needs and development of coordinated requirement documents; the centralized management of the ground target research, development, test and evaluation processes; execution of the validation process; acquisition of foreign equipment; and continuing maintenance, storage, and development/enhancement/update via engineering services of developed and acquired targets to ensure availability for T&E customers. This program also manages use of current assets and operates centralized spare parts program. The US Army is the Tri-Service lead for providing mobile ground targets for T&E.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Funds management and oversight of five Primary Operating Centers to include operation, storage, maintenance, and configuration management for the repair of 158 active and 188 inactive Mobile Ground Target Vehicles, and acquisition of new material and spare parts. Supports users such as Future Combat Systems (FCS), Armed Reconnaissance Helicopter (ARH), Guided Multiple Launch Rocket System (GMLRS), Excalibur, Mid-Range Munition (MRM), Non-Line-of-Sight Launch System (NLOS-LS), Precision Guided Mortar Munition (PGMM), and others.	2148	2055	2515
Manages Mobile Ground Target Surrogates development effort. Supplements the Mobile Ground Targets threat fleet with up to date threat representatives surrogates that emulate the visual, infrared and radio frequency signatures to support T&E (e.g. ARH, FCS, NLOSLS, CKEM, and others. FY08 begins development and fielding of SCUD-B and T-90 Surrogate Vehicles.	358	3212	2828
Supports research and development of the Ground Virtual Targets of evolving Army and DOD simulation standards and evolving implementation techniques; fabricates additional simulation target models of wheeled and tracked ground vehicles in commonly used model formats; develops simulation target model infrared (IR) and radio frequency (RF) signature models support verification and validation of models, and provides archiving and distribution of simulation target models to simulation developers throughout the Army and DOD T&E communities. Simulation target models are employed to facilitate simulations for both developmental testing (DT) and operational testing (OT)(test planning, test rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions). These models will be used by DTC's simulations, OTC's Analytical Simulation and Instrumentation Suite (OASIS), and multiple weapon systems' T&E (e.g. Future Combat System [FCS], Excalibur, Precision Guided Mortar Munition[PGMM], Mid Range Munition[MRM], etc.). These models are available on-line to all T&E simulation developers.	1266	1651	1929
Next Generation Ice Protection Technology System for UAVs. Funding will be moved to PM UAV.		2000	
Mobile objects for Net-Centric Operations. Funding will be moved from this line.		2400	
Small Business Innovative Research / Small Business Technology Transfer Program		293	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0604258A - TARGET SYSTEMS DEVELOPMENT	PROJECT 459
Total	3772	11611

7272

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE						
6 - Management support	0604759A - Major T&E Investment						
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
Total Program Element (PE) Cost	64067	66276	64618	66199	44226	45230	46263
983 Reagan Test Site (RTS) T&E Investments	8035	8164	8508	8856			
984 Major Developmental Testing Instrumentation	35404	37204	35363	36120	27310	27928	28563
986 Major Operational Test Instrumentation	20628	20908	20747	21223	16916	17302	17700

A. Mission Description and Budget Item Justification: This program funds the development and acquisition of major developmental test instrumentation for the U.S. Army Test and Evaluation Command's (ATEC) Developmental Test Command (DTC) test activities: White Sands Test Center (WSTC), NM; Yuma Test Center, (YTC), AZ; Aberdeen Test Center (ATC), MD; Electronic Proving Ground (EPG), AZ; Redstone Technical Test Center (RTTC), AL; Aviation Technical Test Center (ATTC), AL; and for the Reagan Test Site (RTS) at the US Army Kwajalein Atoll (USAKA), which is managed by the Space and Missile Defense Command. The program also funds development and acquisition of Operational Test Command's (OTC) major field instrumentation. Requirements for instrumentation are identified through a long range survey of project managers, Research Development and Engineering Centers (RDECs), and Battle Laboratories developing future weapon systems and the test programs that support these systems. Army testing facilities are also surveyed to determine major testing capability shortfalls.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
6 - Management support	0604759A - Major T&E Investment		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	65325	66921	65004
Current BES/President's Budget (FY 2009)	64067	66276	64618
Total Adjustments	-1258	-645	-386
Congressional Program Reductions		-645	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	479		
SBIR/STTR Transfer	-1737		
Adjustments to Budget Years			-386

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0604759A - Major T&E Investment					PROJECT 983	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
983 Reagan Test Site (RTS) T&E Investments	8035	8164	8508	8856			

A. Mission Description and Budget Item Justification: This project funds the purchase of improvement and modernization (I&M) equipment for the Ronald Reagan Ballistic Missile Defense Test Site (RTS) located on U.S. Army Kwajalein Atoll (USAKA) in the Marshall Islands. RTS is a national test site supporting Army, Missile Defense Agency (MDA), U.S. Air Force, National Aeronautics and Space Administration (NASA), U.S. Strategic Command (STRATCOM), and other customers. Program upgrades radars, telemetry, optics, range safety, communications, command/control and other equipment required to maintain RTS as a national test range. These upgrades are critical to maintain a state of the art sensor suite and to the success of MDA test missions, Minuteman Operational Tests, STRATCOM's Space Surveillance Network (SSN) and Space Object Identification (SOI) operations.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Modernized RTS Operations Control Center (ROCC) for compatibility with upgraded RTS sensors and modernized Kwajalein Mission Control Center computer hardware and software. Improved interoperability with other Pacific Ranges.	3222		
Modernized MPS-36 radars to replace unsupportable hardware and computer systems.	142		
RTS Distributed Operations (RDO). Provide for distributed operations of the Range sensors from Continental U.S.	1500	2000	2000
RTS Optics Modernization Program (ROMP). Modernize RTS optics sensor suite, fixing deficiencies and enabling remote range operations. (Project formerly known as Digital and Remoted Optical Sensors (DROpS).)	900	3536	3608
Millimeter Wave (MMW) Ka-Band Tubes. (Formerly High Resolution Imaging MMW/Tubes.)	350	500	500
Ultra High Frequency (UHF) Transmitter Replacement.	420	1000	1000
Radar Reliability Improvement Program (RRI). Address technology refresh, obsolescence and sustainment issues for critical radar system operation.	786	400	400
Radar Open System Architecture (ROSA) Refresh.	715	400	400
Mission Data Network Modernization. Increase support for mission critical operations.		50	50
Telemetry Modernization Program.		50	50
MMW Bandwidth Expansion Program.			500
SBIR/STTR		228	
Total	8035	8164	8508

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0604759A - Major T&E Investment					PROJECT 984	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
984 Major Developmental Testing Instrumentation	35404	37204	35363	36120	27310	27928	28563	

A. Mission Description and Budget Item Justification: This project develops and acquires major test instrumentation to perform developmental testing of weapon systems at U. S. Army Test and Evaluation Command's (ATEC) Developmental Test Command (DTC) activities which include: Yuma Test Center (YTC), AZ; Aberdeen Test Center (ATC), MD; Electronic Proving Ground (EPG), AZ; White Sands Test Center (WSTC), NM; Redstone Technical Test Center (RTTC), AL; and Aviation Technical Test Center (ATTC), AL. Projects are designated as a major program based on their visibility, assessed relative technical risk (medium-high), schedule risk, cost (generally greater than \$1 Million per yr or \$5 Million for the total project) and applicability to other mission areas or services. These projects are technically demanding, state-of-the-art, unique instrumentation assets or suites to meet the technology shortfalls, and generally result from development programs managed by a professional project management team. The Versatile Information Systems Integrated Online (VISION) developed a modular, scaleable instrumentation suite with sufficient integral mass storage for extended operation. It extends ATC and Department of Defense (DoD) networking to mobile platforms nationwide and provides database accessibility throughout DoD. It also provides advanced program management tools, and on-line customer definable multimedia reports. The Advanced Multi-Spectral Sensor and Subsystem Test Capabilities (AMSSTC) develops the capability to test modern weapon systems and subsystems in the laboratory, in an open or closed loop scenario. Starship II is the Command, Control, Communications, Computers and Intelligence (C4I) Test Instrumentation Control Center (TCC) which enhances and modernizes EPG's Enhanced Position Location and Reporting System (EPLRS) TCC to provide and automate a command and control center software tool that monitors test progress and performance status in real time for all Army Battle Command Systems (ABCS). Joint Warfighter Test and Training Capability (JWTTTC) is the development of an instrumented test area capable of creating Military Operations in Urban Terrain (MOUT) and maneuver training area for platoon size operations. Digital Network Migration (DNM) is the development of mobile assets for support of remote testing areas and linking instrumentation assets to Test Support Network and Cox Range Control Center (CRCC). Crew Station Interface (CSI) is the development of a reconfigurable cockpit simulator for various rotary wing platforms to determine optimum man-machine interfaces and connectivity via Defense Research Engineering Network (DREN) to other service/DoD test sites. Fiber Optic Network II (FON II) is the installation of digital fiber optic cable and transmission electronics to modernize secure and expand the backbone telecommunication and data transmission network in support of Aberdeen Test Center. Systems Test and Integration Laboratory (STIL) is the development of a systems integration and test lab for use in developmental testing and integration engineering, including a virtual test environment to support integration testing of aviation electronic systems as a part of modernization of army aircraft. Quantitative Visualization (QV) for Test and Evaluation is the development of QV integration models to enable rapid conversion of test data into visual representations. Mobile Multi-sensor Time-Space Position Information (TSPI) System (MMTS) is the development of a tracking system for weapons with low/flat trajectories and low radar cross sections. Common Range Integrated Instrumentation System (CRIIS) previously named the Enhanced Range Application Program (EnRAP) Integration project will meet critical requirements to provide global positioning system (GPS) based Time, Space, Position Information (TSPI) instrumentation to support the testing of a variety of platforms including advanced aircraft, ships, helicopters, Unmanned Aerial Vehicles (UAVs), Ground Vehicles and dismounted soldiers. Advanced Ballistic Data Acquisition develops capabilities that will permit Yuma Test Center (YTC) and Aberdeen Test Center (ATC) to test and generate safety releases for new systems being introduced by the on-going Army Transformation as part of the Precision Effort and testing of Interim and Legacy weapons. ADMAS Product Improvement Program develops very small and low power pocket sized Advanced Distributed Modular Acquisition System (ADMAS) systems which will extend the Versatile Information Systems Integrated Online system's (VISION) capabilities to support dismounted and small robotic platforms. The Range Radar Replacement Program will upgrade or replace obsolete tracking and surveillance radars at EPG, WSMR and YPG with modern digital equipment. CRIIS Objective program provides precision location instrumentation which will significantly increase the T&E ranges' capability to meet the test instrumentation needs of the tri-service range users.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)		February 2008		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
6 - Management support	0604759A - Major T&E Investment	984		
<u>Accomplishments/Planned Program:</u>		<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Digital Network Migration (DNM): Develop mobile assets for support of testing in remote areas and linking of instrumentation assets to the Test Support Network and Cox Range Control Center (CRCC)		7830	7102	6330
Quantitative Visualization (QV) for Test and Evaluation: Develop QV integration models to enable rapid conversion of test data into visual representations.		829	874	869
Fiber Optic Network II (FON II) - Aberdeen Test Center (ATC): Install digital fiber optic cable and transmission electronics to modernize, secure and expand the backbone telecommunication and data transmission network in support of Aberdeen Test Center		5273	4890	3085
Systems Test and Integration Laboratory (STIL): Develops a systems integration and test lab for use in developmental testing and integration engineering, including a virtual test environment to support integration testing of aviation electronic systems as a part of modernization of army aircraft.		1956	7467	5553
Crew Station Interface (CSI) (formerly Reconfigurable Cockpit Simulator (RCS)): Develop a reconfigurable cockpit simulator for various rotary wing platforms to determine optimum man-machine interfaces and connectivity via Defense Research Engineering Network (DREN) to other service/DoD test sites-Per HQ Development Test Command (DTC) 25JUL07 memo, CSI program combined with STIL resulting in one program. This approach was deemed a more efficient and effective way to develop the required capabilities. Funding combined with STIL beginning FY08.		1212		
Joint Warfighter Test and Training Capability (JWTTTC): Develop instrumented test area capable of creating mobile operations and maneuver training area for platoon size operations.		2503	6038	3718
Mobile Multi-sensor Time Space Position Information (TSPI) System (MMTS)(formerly Hypervelocity Advanced TSPI System): Begin development of a tracking system for weapons with low/flat trajectories and low radar cross sections.		1362	2920	4657
Advanced Multi-Spectral Sensor and Subsystem Test Capabilities (AMSSTC): Continue design, development and integration of advanced multi-spectral simulation, test and acceptance resource for both performance and production testing of Common Missile and other potential multi-mode guided missiles.		3497	3363	3071
Common Range Integrated Instrumentation System (CRIIS) previously known as EnRAP: The system is a life cycle replacement and technology improvement for the current Advanced Range Data System (ARDS) which is rapidly approaching the end of its life cycle. The capability will include the components to be mounted on the test platform and the components required for any necessary ground infrastructure. The system will support T&E associated with the cooperative collection of TSPI from dismounted soldiers, ground vehicles, low dynamic aircraft, and high dynamic aircraft.		134	3095	4895
Starship II: Developed enhancements and expansion of the functions for the C4I/Test Instrumentation Control Center (TCC) to test the Digitized Army and it's suite of Army Technical Architecture (ATA) - Compliant C4I systems.		1655		
Versatile Information Systems Integrated Online (VISION): Developed/enhanced the Digital Library to increase database and links to other Army facilities. Completed the development of new smart sensors to monitor vehicle position and initial research to develop communications protocol. Developed security communication features to handle classified information.		9153		
ADMAS Product Improvement Program: Develops very small and low power pocket sized ADMAS systems			195	2442
Range Radar Replacement Program will upgrade or replace obsolete tracking and surveillance radars at EPG, WSMR and YPG with modern digital equipment.			290	300

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
6 - Management support	0604759A - Major T&E Investment	984	
Advanced Ballistic Data Acquisition: Develops capabilities to test and generate safety releases for new systems.			443
Small Business Innovative Research/Small Business Technology Transfer Programs		970	
Total		35404	37204

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0604759A - Major T&E Investment					PROJECT 986	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
986 Major Operational Test Instrumentation	20628	20908	20747	21223	16916	17302	17700

A. Mission Description and Budget Item Justification: This project supports the development of major field instrumentation for Operational Testing (OT), Force Development Testing and Experimentation (FDTE), Army Warfighting Experiments (AWE) for the U.S. Army Test and Evaluation Command (ATEC), and Army Transformation. Each initiative set forth in this program element is directly tied to tactical systems that support the following Army Modernization Plan operational capability areas: Dominate Maneuver, Full Dimensional Protection, Precision Engagement, and Focused Logistics. The cornerstone of this effort is the Operational Test-Tactical Engagement System (OT-TES) vice Objective Real-Time Casualty Assessment and Instrumentation Suite (Objective RTCA) that provides users a high fidelity, realistic, real-time capability to measure the performance of hardware and personnel under tactical conditions for small and large-scale operations. OT-TES allows the U.S. Army to test all Current-to-Future, Future Force, and Future Combat Systems (FCS) capabilities in a force-on-force operational environment. OT-TES Research, Development, Test and Evaluation (RDTE) develops performance enhancements and technology upgrades to the Command, Control and Communications (C3) Center, Communications Network, weapons system interfaces, dismounted-troop vest and peripherals, Global Positioning System (GPS), encryption components and integrates high-fidelity digital battlefield data collection and analysis tools. These tools will collect, store and analyze data from the digital battlefield. These improvements will enable OT-TES to measure and record accrued damage, levels of exposure, effects of countermeasures, evasive action, and instrument threat vehicles, while significantly reducing system intrusiveness and increase the safety of current instrumentation for both vehicle and dismounted instrumentation. Instrumentation does not presently exist to monitor, record, stress, and analyze the effects of the digital battlefield in realistic operational scenarios. This capability is required by the operational test community to integrate digital battlefield data collection and analysis tools into the Mobile Automated Instrumentation Suite (MAIS) as enhancements to the fielded MAIS system. These tools will collect, store and analyze data from this new dimension of digital battlefield warfare. The ability to fully stress the entire battlefield with numerous simulated entities presents opportunities for significant cost savings and greater realism than would otherwise be achievable. This effort responds to the current Operations Tempo (OPTEMPO) and Personnel Tempo (PERSTEMPO) demands to force the U.S. Army to conduct more realistic, more accurate, and comprehensive evaluations at reduced costs by virtually replicating a greater number of troop resources in force-on-force testing and training exercises. Personnel and resource cuts have already been taken in the test community predicated upon data reduction/analysis streamlining provided by this capability.

Operational Test Command (OTC) Analytic Simulation and Instrumentation Suite (OASIS) Enterprise Integration Solution (EIS) is the operational test environment for FCS and the Future Force. OASIS EIS provides the integrated environment required for testing of network centric systems in a realistic operational environment.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
OT-TES: Funds the development of hardware, software, interfaces, and new capabilities to ensure the Real-Time Casualty Assessment (RTCA) requirements for upcoming operational tests are supported. Develops efforts that will initially be directed toward OT-TES; when development efforts transition to OneTESS for player units, funds will also be allocated for the OT-TES infrastructure upgrades. Development efforts include: Integration with New Tactical Systems Under Test, Integration with Live, Virtual, and Constructive Simulation environments, RTCA Capabilities for Active Protection Systems and Countermeasures, RTCA Capabilities for Communications/Sensor Kills and Degradations, Completed Development, Integration, and Testing of the Communications Upgrade - New Player Units, New Communications Sub-System, New Encryption and RTCA Capabilities for Electronic Warfare and	18192	18993	19415

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
6 - Management support	0604759A - Major T&E Investment	986		
Countermeasures.				
Develop Operational Test Command (OTC) Analytic Simulation and Instrumentation Suite (OASIS) Enterprise Integration Solution (EIS).	1336	1358	1332	
Network Centric Warfare Digital Battlefield: Completed the next generation test and training integrated technologies required to support the future mission of the evolving battle space.	1100			
Small Business Innovative Research/Small Business Technology Transfer Programs		557		
Total	20628	20908	20747	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605103A - Rand Arroyo Center					PROJECT 732	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
732 ARROYO CENTER SPT	20792	19149	16339	16570	17023	17406	17793

A. Mission Description and Budget Item Justification: This program funds the RAND Arroyo Center, the Department of the Army's Federally Funded Research and Development Center (FFRDC) for studies and analysis. The Arroyo Center draws its researchers from RAND's staff of nearly 700 professionals trained in a broad range of disciplines. Most staff members work in RAND's principal locations-Santa Monica, California; Arlington, Virginia; and Pittsburgh, Pennsylvania. The RAND Arroyo Center provides for continuing analytical research across a broad spectrum of issues and concerns, grouped in four major research areas: Strategy, Doctrine, and Resources; Military Logistics; Manpower and Training; and Force Development and Technology. The RAND Arroyo Center research agenda is primarily focused on mid/long-term concerns. Results and analytical findings directly affect senior leadership deliberations on major issues. Arroyo Center research is sponsored by the Chief of Staff, Vice Chief, the Deputy Chiefs of Staff of the Army; the Army Assistant Secretaries; and most of the Army's major commands. The Arroyo Center is provided guidance from the Army through the Arroyo Center Policy Committee (ACPC), which is co-chaired by the Vice Chief of Staff of the Army and the Assistant Secretary of the Army (Acquisition, Logistics and Technology). The ACPC reviews, monitors, and approves the annual Arroyo Center research plan. Each project requires General Officer (or SES equivalent) sponsorship and involvement on a continuing basis. RAND Arroyo provides the Army with a unique multidisciplinary capability for independent analysis.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Research addressing the Army's transformation to meet near-term challenges: key issues for the Army, including implications of network-centric insurgencies; support to the unit-focused stability effort; Combat Training Center (CTC) training effectiveness; support to Officer Personnel Management System (OPMS 3); alternative medical force structures; Army Working Capital Fund (AWCF) for an expeditionary Army; integrating APS with the supply chain; and lessons from Stryker support in Iraq.	500	1026	800
Research addressing the Army's transformation to shape the future force: key issues for the Army in laying out long-term alternatives, including future strategic challenges, operational cognition, support to Unified Quest '05, budget implications of current operations; and improving fleet recap planning; improving jointness and interdependence, including improving joint blue force Situational Awareness (SA), training strategies for the Brigade Combat Team-Unit of Action (BCT-UA), and integrating Army requirements and Defense Logistics Agency (DLA) contingency planning; technology for future forces, including future force reconnaissance capabilities, robotics for future forces, fusion architectures for Stability and Support Operations (SASO), architecture options for future forces, behavior based modeling, and RF Spectrum access; logistics support to future forces, including sustaining simultaneous distributed operations and assessment of Future Combat System (FCS) sustainability requirements; and cooperation with friends and allies, including compatibility with new allies, and Army international affairs activities and force compatibility.		2650	1500
Research addressing support to current operations: key issues for the Army in continuing military operations in Afghanistan and Iraq; measuring Army effectiveness in the Global War on Terrorism (GWOT); access to soldiers for deployment; strengthening Army recruiting and retention; evaluation of unit-based leader-development programs; adapting Combat Training Center (CTC) training proficiency to demands of the Contemporary Operating Environment (COE); and anticipating adaptive enemies.	3569	4148	3944
Research addressing the Army's transformation to meet near-term challenges: Implementing Army Force Generation (ARFORGEN) for a modular force, including unit-focused stabilization; Units of Action (UAs) and manning the force; training and readiness strategies to	3783	3990	3500

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
6 - Management support	0605103A - Rand Arroyo Center	732		
support ARFORGEN; and optimizing Combat Service Support (CSS) capabilities. Improving doctrine/organization for Stability and Support Operations/Counterinsurgency (SASO/COIN), including the implications for the Army of irregular warfare; improving doctrine and planning for stability operations; dominating complex terrain; integrating Information Operations (IO) into planning and execution of military operations; and building transitional security capabilities. Managing the tech challenges of transformation, including managing the Future Combat System (FCS) program; recapitalizing Army Battle Command System (ABCS); Optimizing the ground force network; and integrating UAV capabilities into UA networks. Supporting the transforming force, including improving Army repair parts inventories; and supply chain integration with government providers.				
Research addressing the Army's enduring challenges: key issues for the Army in shaping and staffing the force, including assessing effectiveness of a tier-two attrition screen program, and support to Army review of the Officer Personnel Management System (OPMS); and key issues for the Army in supporting the force, including improving depot supply chain management, identifying best Performance Based Logistics (PBL) practices; evaluating the Army's organic technical capabilities, and implementing best purchasing and supply management practices.	3879	1500	1200	
Research addressing the Army's transformation to shape the future force: key issues for the Army, including reexamining strategic guidance for the US Army; dealing with nuclear weapons; support to TRADOC war-game; building partner capability for coalition operations; assessing the value of commonality and families of systems; developing a total Condition Based Maintenance (CBM) program; evaluating the state of automated fusion; simulating robotics concepts; and future force vulnerability assessment.	9061	5300	5395	
Small Business Innovative Research/Small Business Technology Transfer Program		535		
Total	20792	19149	16339	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
6 - Management support	0605103A - Rand Arroyo Center			732
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	21234	16342	16444	
Current BES/President's Budget (FY 2009)	20792	19149	16339	
Total Adjustments	-442	2807	-105	
Congressional Program Reductions		-1193		
Congressional Rescissions				
Congressional Increases		4000		
Reprogrammings	156			
SBIR/STTR Transfer	-598			
Adjustments to Budget Years			-105	

Change Summary Explanation: In FY08 a program increase of \$4.0 million.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE					PROJECT	
6 - Management support		0605301A - ARMY KWAJALEIN ATOLL					614	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
614 ARMY KWAJALEIN ATOLL	173455	180052	174601	165798	167991	162486	166050	

A. Mission Description and Budget Item Justification: The U.S. Army Kwajalein Atoll/Ronald Reagan Ballistic Missile Defense Test Site (USAKA/RTS), located in the Republic of the Marshall Islands, is a remote, secure activity of the Major Range and Test Facility Base (MRTFB). Its function is to support test and evaluation of major Army and DoD missile systems and to provide space surveillance and space object identification in support of U.S. Strategic Command and National Aeronautics and Space Administration (NASA) scientific and space programs. Programs supported include Army missile defense, Missile Defense Agency (MDA), demonstration/validation tests, Air Force and Navy Intercontinental Ballistic Missile (ICBM) development and operational tests, U.S. Space Surveillance Network, and NASA Space Transportation System (Shuttle) and orbital debris experiments. The technical element of USAKA/RTS is RTS, which consists of a number of sophisticated, one-of-a-kind, radar, optical, telemetry, Command/Control/Communications, and data reduction systems. These systems include the four unique radars of the Kiernan Reentry Measurement Site (KREMS); Super Recording Automatic Digital Optical Tracker (SRADOT) long range video-metric tracking systems; high density data recorders for high data-rate telemetry collected by nine antennas; underwater acoustic impact location system; and data analysis/reduction hardware/software. USAKA/RTS is government-managed/contractor-operated (GMCO) and is therefore totally dependent upon its associated support contractors. Program provides funds for the contractors to accomplish installation operation and maintenance (O&M) and provides mission essential bandwidth via fiber optics cable system. Funding is required to maintain minimal O&M support, while accepting moderate risk of continued degradation of USAKA/RTS infrastructure (housing, offices, facilities), higher future repair costs, and reduced logistical support capability. The Army, Air Force, Navy and MDA have programs planned which have significant test and data gathering requirements at USAKA/RTS. Air Force programs launch from Vandenberg Air Force Base, CA, with complete data collection during late mid-course and terminal trajectory. MDA programs require range instrumentation to collect technical data in support of mid-course and terminal defense programs. This test data cannot be obtained except through the use of technical facilities available on and in the vicinity of USAKA/RTS. Program supports U.S. Strategic Command (STRATCOM) requirements for data collection on objects in space. The Advanced Research Project Agency (ARPA) Long-Range Tracking and Instrumentation Radar (ALTAIR), and the Target Resolution Discrimination Experiment (TRADEX) radar located at USAKA/RTS, are two of only three radars world-wide that have deep-space tracking capability. The Millimeter Wave Radar (MMW) is the most powerful imaging radar in the world. With the geographic location of RTS, MMW complements the tracking radars for national space capabilities. Program supports Air Force's Minuteman III operational and developmental tests; MDA's Ground Based Mid-Course Missile Defense (GMD) tests, Battle Management/Command, Control and Communications (BMC3), In-Flight Interceptor Communication System (IFICS) data terminals; Army/MDA PAC-3 System Integration of Tests, Family of Systems, and Critical Measurements Program (CMP) and NASA's Space Transportation System (STS), Small Expendable Deployer System and Orbital Debris Measurement Programs; and the Air Force Space and Missile Center's associated programs.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Provide management support (salaries, training, travel, Space & Missile Defense Command (SMDC) matrix, etc).	10805	9542	9373
Accomplish facility maintenance and repair projects, including design.	7400	13200	7200
Procure petroleum, oils and lubricants (POL) and Military Standard Requisitioning and Issue Procedure (MILSTRIP) items.	25907	27000	34417
Procure other mission services.	5998	4696	4788
Provide air and sea transportation (cargo to and from continental United States).	6494	5850	4507

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
6 - Management support	0605301A - ARMY KWAJALEIN ATOLL	614	
Provided costs for Kwajalein Cable System (KCS) fiber optic cable for Indefeasible Right of Use (IRU). Initial Operational Capability begins November 2009.	7000		
Continue to support Army, MDA, NASA and Air Force developmental and operational missile testing.	49017	53468	55675
Provide logistical support (facilities maintenance and repair, aviation, automotive, marine, medical, food services, education, information management, environmental compliance, etc.) to self contained islands of USAKA.	56334	56786	54241
Provide for RTS Distributed Operations (distributed operations of the Range sensors from Continental U.S.).	4500	4700	4400
Small Business Innovative Research/Small Business Technology Transfer Programs.		4810	
Total	173455	180052	174601

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
6 - Management support	0605301A - ARMY KWAJALEIN ATOLL			614
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	176916	182136	166772	
Current BES/President's Budget (FY 2009)	173455	180052	174601	
Total Adjustments	-3461	-2084	7829	
Congressional Program Reductions		-2084		
Congressional Rescissions				
Congressional Increases				
Reprogrammings	1299			
SBIR/STTR Transfer	-4760			
Adjustments to Budget Years			7829	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE						
6 - Management support	0605326A - Concepts Experimentation Program						
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
Total Program Element (PE) Cost	24787	29652	28271	22328	23499	27062	27517
308 Concepts Experimentation	3825	8347					
312 Army/Joint Experimentation	18205	19456	10486	10535	8487	8612	8694
317 CURRENT FORCE CAPABILITY GAPS			15892	9852	13310	16714	17041
33B SOLDIER-CENTERED ANALYSES FOR THE FUTURE FORCE	2757	1849	1893	1941	1702	1736	1782

A. Mission Description and Budget Item Justification: Funding for the Army Concept Development and Experimentation Campaign Plan mission enables integrated examinations with US Joint Forces Command (USJFCOM), Army Test and Evaluation Command (ATEC), Research, Development, and Experimentation Command (RDECOM), Army battle laboratories, operational units, research labs, materiel developers, industry and academia for the development, refinement, and assessment of future force concepts and concept capability plans to inform the Capability Integration Development System (CIDS) process and shape future requirements, enabling identification and acquisition of critical Doctrine, Organizational, Training, Materiel, Leader Development, Personnel and Facilities (DOTMLPF) capabilities for the future force in order to provide the land power capabilities needed by the Joint Force commander and establish the Army as a purposely interdependent and expeditionary component of the future Joint force. Enables the Air Assault Expeditionary Force Spirals, the Army's principle live discovery experiments to determine impacts on leaders from increased mental demands and complexities from enhanced situational awareness, requirements of sensor planning, employment and management of accelerated decision cycles in a network-enabled force, training requirements of new technologies (e.g. Unmanned Ground Vehicles, Unmanned Aerial Vehicles, and battle command systems and communications); Digital Warfighter Exercises addressing the required capabilities of future echelons above Brigade command posts; and Battle Command On The Move developments. Support Brigade experiments inform higher echelons of which intelligence, surveillance, and reconnaissance capabilities products are focused on synchronization, and support full spectrum operations. Functional Enabling experiments inform logistics, medical, civil support, as well as rapid transitions, and joint mobility. Subordinate Command experiments with airlift capabilities and operational capability over strategic distances.

The Asymmetric Warfare program provides a method for Army to keep the Current Force current/relevant as adversaries adapt and the operating environment changes. As capability gaps identified by deployed forces reveal shortfalls that impact effectiveness or interoperability, and these capability gaps are prioritized by Army, this program provides the ability for Army to evaluate high priority/high leverage solutions from industry during the current year, with highest priority going to candidates that cover multiple capability gaps. Funding provides the ability to identify and insert leading-edge technology from industry to deployed forces in an incremental manner by leveraging the best ideas of best-positioned Program Manager/Program Executive Officers and pulling, or spiraling, them forward for immediate use in the theater. Asymmetric Warfare program will ensure that a solution's proposed gain in capability is not offset by a disruption caused by integration problems. Program enables the holistic demonstration, assessment and deployment of critically needed capabilities to the current force in an integrated environment in the current year.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
6 - Management support	0605326A - Concepts Experimentation Program		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	25293	34004	28440
Current BES/President's Budget (FY 2009)	24787	29652	28271
Total Adjustments	-506	-4352	-169
Congressional Program Reductions		-12752	
Congressional Rescissions			
Congressional Increases		8400	
Reprogrammings	186		
SBIR/STTR Transfer	-692		
Adjustments to Budget Years			-169

Congressional reduction labeled "Program adjustment." Congressional increases for Gunfire Detection System for Unmanned Aerial Vehicles (\$1.6 million); Development of a Robust Mobile Multispectral Fingerprint Capture Device Employing Multispectral Imaging Technology (\$2.0 million); 2D-3D Face Recognition System (\$2.4 million); Arabic Language Training Program (\$.8 million); Automated Communications Support System (\$1.6 million).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605326A - Concepts Experimentation Program					PROJECT 312	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
312 Army/Joint Experimentation	18205	19456	10486	10535	8487	8612	8694

A. Mission Description and Budget Item Justification: The Army Experimentation mission enables integrated examinations with US Joint Forces Command (USJFCOM), Army Test and Evaluation Command (ATEC), Research, Development, and Experimentation Command (RDECOM), Army battle laboratories, operational units, research labs, materiel developers, industry and academia for the development, refinement, and assessment of future force concepts and concept capability plans to inform the CIDS process and shape future requirements, enabling identification and acquisition of critical DOTMLPF capabilities for the future force in order to provide the land power capabilities needed by the Joint Force commander and establish the Army as a purposely interdependent and expeditionary component of the future Joint force. Enables the Air Assault Expeditionary Force Spirals, the Army's principle live discovery examinations to determine impacts on leaders from increased mental demands and complexities from enhanced situational awareness, requirements of sensor planning, employment and management of accelerated decision cycles in a network-enabled force, training requirements of new technologies (e.g. Unmanned Ground Vehicles, Unmanned Aerial Vehicles, and battle command systems and communications); Digital Warfighter Exercises addressing the required capabilities of future echelons above Brigade command posts; and Battle Command On The Move developments.

Asymmetric Warfare mission (previously referred to as Spiral Developments program) provides rapid capability development and the insertion of new warfighting capabilities into deployed Army units. Two significant problem sets exist in this area for the Army and TRADOC. First, there is a significant difference between the way Army forces are operating in the field and the way they were designed to operate. Secondly, there is a fast-growing backlog of capabilities that need to be assessed in terms of how well those capabilities are doing what they were intended to do. These two problem sets have never been more evident and critical than today, when the pace at which units and technology are evolving is being driven by the need to adapt to an enemy that not only employs asymmetric means, but also quickly adjusts to our own changes. This creates significant challenges for TRADOC - challenges of integrating key activities across DOTMLPF associated with accelerated capabilities development. Specific examples include integrating those activities that support the full spectrum of complex operations associated with asymmetric warfare in the areas of defeating improvised explosive devices (IED), Electronic Warfare (EW), Information Operations (IO) and Force Protection (FP).

Asymmetric Warfare funding has been transferred to from Project 312 to Project 317 in FY09 - FY13.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Asymmetric Warfare - Demo/Assess Joint interoperability of emergent soldier protection capability	3000		
Asymmetric Warfare - Demo/Assess emergent remote operating weapons station capability	2800		
Asymmetric Warfare - Demo/Assess emergent explosives detection capability	2000		
Asymmetric Warfare - Demo/Assess emergent sensor integration solutions	2450		
Experimentation - World Class Blue Force analysts	1894	3300	3376
Experimentation - Modular Force - Joint Urban Resolve/Omni Fusion Experiment	700		

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
6 - Management support	0605326A - Concepts Experimentation Program	312		
Experimentation - Air Assault Expeditionary Force Experiment (AAEF) - Spiral D	2000			
Experimentation - Battle Command on the Move (BCOM) Experiment	231			
Experimentation - Counter Insurgency and Digital Warfighter Experiments (DWE)	1767			
Experimentation - Earth, Wind and Fire Experiment	1023			
Experimentation - Functional Enabling Experiments designed to address Combat Health, Airlift Capabilities and Supply Support for the Future Modular Force	340	437		1821
Experimentation - Support Brigade Experiments designed to provide situational awareness and enables situation understanding to all echelons in all conditions conducting complex and urban terrain and multinational operations		795		4245
Experimentation - Subordinate Command Experiments designed to address Future Modular Force operational maneuver from strategic distances and intra-theater operational maneuver when capabilities are degraded or absent		812		1044
Asymmetric Warfare - Improvised Explosive Device Defeat (IED-D) Integrated Concept Development Team (ICDT)		6200		
Asymmetric Warfare - Sniper Defeat ICDT		4845		
Asymmetric Warfare - Demo/Assess Information Operations		1500		
Asymmetric Warfare - Demo/Assess Command, Control, Communications, Computers and Intelligence, Surveillance and Reconnaissance (C4ISR)		1023		
SBIR/STTR		544		
Total	18205	19456		10486

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605326A - Concepts Experimentation Program					PROJECT 317	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
317 CURRENT FORCE CAPABILITY GAPS			15892	9852	13310	16714	17041

A. Mission Description and Budget Item Justification: Asymmetric Warfare - Integrating events such as the Comprehensive Force Protection Initiative (CFPI) mandated by the Assistant Secretary of the Army will support Force Protection, Soldier Protection, and Network Information Assurance and provide enhanced warfighting capabilities. these enhanced capabilities improve warfighting effectiveness, improve the survivability, and reduce the vulnerability of the Army's current force. Demonstrations will assess near term technologies (next 6-18 months) that could potentially support the war effort by working to identify gaps and prescribe changes to protect soldiers and convoys from threats such as improvised explosive devices. These demonstrations also allow decision makers to view what off-the-shelf technology capabilities are available today, from a host of vendors that could be used in near to midterm operations on the Global War on Terror. Additionally, these integrating events will provide comprehensive plans (with alternative options) for solving capability shortfalls in the Army's current force and approaches for engagement with Army, and Joint communities as related to the development of selected new warfighting capabilities.

NOTE: This is not a new program. FY 07 and FY 08 funds for this project were in project 312.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Improvised Explosive Device (IED) Integrated Concept Development Team			5892
Sniper Defeat Integrated Concept Development Team			3500
Demo/Assess Electronic Warfare			2500
Demo/Assess Information Operations			1200
Demo/Assess Command and Control, Communications, Computers, Inetlligence, Surveillance and Reconnaissance (C4ISR)			2800
Total			15892

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BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605326A - Concepts Experimentation Program					PROJECT 33B	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
33B SOLDIER-CENTERED ANALYSES FOR THE FUTURE FORCE	2757	1849	1893	1941	1702	1736	1782	

A. Mission Description and Budget Item Justification: This project will provide early application of human performance and human figure modeling tools in the development of Soldier-focused requirements to shape technology for Army Transformation. Design analyses, constructive simulations and Soldier-in-the-loop assessments will ensure that manpower requirements, workload and skill demands are considered, avoid information and physical task overloads, and take optimum advantage of aptitudes, individual and collective training, and numbers of Soldiers for an affordable Future Force. The cited work is consistent with Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Defense Technology Area Plan (DTAP). Work in this project is performed by the Army Research Laboratory (ARL).

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Provide dedicated modeling and analysis cell for early and accurate Manpower and Personnel Integration (MANPRINT) estimates to Army Materiel Command (AMC), AMC Research, Development, and Engineering Command (RDECOM) and its Research, Development, and Engineering Centers (RDECs), TRADOC Centers, Schools and Battle Laboratories, Army Test and Evaluation Command (ATEC) and other service laboratories. In FY07, verified Soldier centered analysis impacts in force modernization systems and transitioned lessons learned to influence future requirement definitions. In FY08, use quantitative analysis methods to quantify risks in MANPRINT assessment documents for highest-priority systems, based on user and developer community prioritization. In FY09, will apply cross domain MANPRINT risk (i.e. manpower, personnel, training, systems engineering, safety) tradeoff tools to the user, acquisition and test & evaluation communities for more cost effective risk mitigation.	1263	1121	1150
Provide Human Factors Engineering support to Training and Doctrine Command (TRADOC) Centers, Schools and Battle Laboratories. In FY07, provided Future Combat Systems, other selected legacy and developmental systems, human engineering assessments for human-system integration design guidance.	1494		
Supports the MANPRINT Analysis Cell transferred from US Army Human Resources Command; providing MANPRINT Manpower, Personnel and Training (MPT) force requirements determination support to TRADOC on selected systems. In FY08 and FY09, provide analysis of Soldier MPT and Soldier-System performance. Will integrate model and analysis tools on systems based on prioritization basis.		719	743
SBIR/STTR		9	
Total	2757	1849	1893

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

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BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605601A - ARMY TEST RANGES AND FACILITIES					PROJECT F30	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
F30 ARMY TEST RANGES & FACILITIES	381740	355715	342079	339158	323383	330570	338326

A. Mission Description and Budget Item Justification: Funding, beginning in FY 2006, reflects realignment to comply with Section 232 of the FY2003 National Defense Authorization Act (NDAA) requiring Major Range and Test Facility Bases (MRTFBs) to be fully funded and that DoD test customers be charged for direct cost only. The new law precludes the MRTFBs from charging customers for efforts not directly identifiable to a specific program and requires Office of the Secretary of Defense(OSD) certification to Congress of funding adequacy. Funding was realigned from the Army Program Executive Officers/Program Managers and non-Army DoD customers to this program element.

This project funds the indirect test costs associated with rapidly testing field systems and equipment needed in support of the Long War Against Terrorism such as Individual soldier protection equipment and Counter Measures for Improvised Explosive Devices (IEDs) and uparmoring the Army's wheeled vehicle fleet. This project sustains the developmental Test & Evaluation capability required to support Army as well as Joint Service or Other Service systems, hardware, and technologies. Unclassified systems scheduled for developmental testing encompass the entire spectrum of weapon systems such as: up-armoring vehicle ballistic protection on the Buffalo, Cougar, Family of Medium Tactical Vehicles Long Term Armor Strategy (FMTV LTAS), and Joint Light Tactical Vehicle (JLTV); Stryker upgrades; armor gun shields for tactical vehicles; reactive and active armor on the Stryker; Personnel Screening Systems; the Mine Resistant Ambush Protected (MRAP) Vehicles; Intelligence Surveillance and Reconnaissance (ISR); Counter Remote Control IED (RCIED) Electronic Warfare (CREW); Electronic Countermeasure Devices (ECMDs); Body Armor; High Mobility Multipurpose Wheeled Vehicle (HMMWV); Aviation Transformation (AH-64 Block III, ARH, LUH, UH-60); aviation protection systems Common Missile Warning System (CMWS); missile defense (PAC-3, Terminal High Altitude Area Defense (THAAD)); and Unmanned Systems. Capabilities are also required to support System-of-Systems and network centric systems to include Future Combat System (FCS) testing.

This project provides the institutional funding required to operate the developmental test activities required by Department of Defense (DoD) Program Executive Officers, Program and Product Managers, and Research, Development, and Engineering Centers. This project provides resources to operate four elements of the DoD Major Range and Test Facility Base (MRTFB): White Sands Test Center (WSTC), NM; Aberdeen Test Center (ATC), MD; Electronic Proving Ground (EPG), AZ; and Yuma Test Center (YTC), AZ (to include management of Army natural environmental testing at Cold Regions Test Center, Fort Greely and Fort Wainwright, AK, and Tropic Regions Test Center at various locations). This project also funds the Army's developmental test capability at Aviation Technical Test Center (ATTC), AL; and Redstone Technical Test Center (RTTC), AL. Test planning and safety verification at Headquarters, U.S. Army Developmental Test Command (DTC), MD is also supported by this program element.

This project finances overhead test operating cost not appropriately billed to test customers, replacement of test equipment, and test revitalization/upgrade projects to maintain current testing capabilities and improvements to safety, environmental protection, efficiency of test operations, and technological advances. The developmental test capabilities at these test ranges have been uniquely established, are in place to support test and evaluation (T&E) requirements of funded weapons programs, and are required to assure technical performance, adherence to safety requirements, reliability, logistics supportability, and quality of materiel in development and in production.

Direct costs are borne by materiel developers in accordance with DoD Directive 3200.11 and DoD Financial Management Regulation 7000.14R.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		PROJECT
6 - Management support	0605601A - ARMY TEST RANGES AND FACILITIES		F30
<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Mission Support. Funds support test equipment upgrades and maintenance; test facility maintenance; routine calibration; handling and disposal of hazardous materials, transportation, postage, administrative supplies; tools; software; spare parts; test support vehicle maintenance; mission unique installation costs; temporary duty/training of civilian and contractor personnel; printing and reproduction; utilities; communications; land leases; and range road maintenance not billable in accordance with Section 232, 2003 National Defense Authorization Act (NDAA). Effective beginning in FY 06, funding supports indirect cost previously paid by the customer for which funding was realigned, as approved by Assistant Secretary of the Army for Acquisition, Logistics and Technology and validated by Deputy Assistant Secretary of the Army for Cost and Economics, from the Army PEO/PMs and non-Army DOD customers.	105508	107658	109926
T&E Civilian Pay. This funding supports the overhead costs of the civilian labor for Program Budget Guidance (PBG) authorizations in accordance with NDAA. The balance is customer funded. The test customer pays all direct costs that are directly attributable to the use of a test facility or resource for testing of a particular program. Funding is essential to maintain core T&E skills as part of the Government civilian workforce.	140550	131604	125581
Contractor Pay. This funding supports contractor labor costs not appropriately billable to the customer in accordance with NDAA. Contract labor is essential to augment core civilian T&E personnel. Functions performed include range operations, automotive test support, radar maintenance, warehousing support, project management, maintenance of support fleet aircraft, recurring/general maintenance to test facilities and data acquisition support. Effective beginning in FY06, funding supports contractor efforts related to mission support. These costs were previously paid for by the customer prior to implementation of the FY2003 National Defense Authorization Act.	125682	100319	96572
Revitalization/Upgrade of test infrastructure and capabilities. Beginning in FY06, MRTFB elements are required to use institutional funding to sustain, upgrade or create capabilities that support multiple customers. For FY07 through FY09 funding will be focused on improving test and evaluation capabilities for distributed test operations, joint and Army network centric testing.	10000	10000	10000
Small Business Innovative Research/Small Business Technology Transfer Programs		6134	
Total	381740	355715	342079

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
6 - Management support	0605601A - ARMY TEST RANGES AND FACILITIES			F30
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	385498	357964	343030	
Current BES/President's Budget (FY 2009)	381740	355715	342079	
Total Adjustments	-3758	-2249	-951	
Congressional Program Reductions		-2249		
Congressional Recissions				
Congressional Increases				
Reprogrammings	3883			
SBIR/STTR Transfer	-7641			
Adjustments to Budget Years			-951	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE					
6 - Management support		0605602A - Army Technical Test Instrumentation and Targets					
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
Total Program Element (PE) Cost	82525	85862	74624	73908	57934	59382	60717
628 Developmental Test Technology & Sustainment	54107	45642	46162	44296	35238	36024	36833
62B OPERATIONAL TESTING INSTRUMENTATION DEVELOPMENT	14729	11952					
62C MODELING AND SIMULATION INSTRUMENTATION	13689	28268	28462	29612	22696	23358	23884

A. Mission Description and Budget Item Justification: Effective FY09, 62B and 62C were combined into one line - 62C - to accurately reflect the interwoven use of both Modeling and Simulation (M&S) and instrumentation in support of operational and developmental testing.

This Program Element provides critical front-end investments for development of new test methodologies; test standards; advanced test technology concepts for long range requirements; future test capabilities; advanced development of M&S and instrumentation prototypes; and the full development of systems for the United States Army Test and Evaluation Command (ATEC), which includes the Developmental Test Command (DTC) at Aberdeen Proving Ground, Maryland and the Operational Test Command (OTC) at Ft Hood, Texas. DTC consists of seven Test Centers: Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; White Sands Test Center (WSTC), New Mexico; Electronic Proving Ground (EPG), Fort Huachuca, Arizona; Yuma Test Center (YTC), Arizona (including the Cold Regions Test Center (CRTC), Fort Greely, Alaska and the Tropics Regions Test Center, Hawaii); Aviation Technical Test Center (ATTC), Fort Rucker, Alabama; Redstone Technical Test Center (RTTC), Redstone Arsenal, Alabama; and Dugway Proving Ground (DPG), Utah. OTC consists of four forward Test Directorates (Airborne Special Operations Test Directorate, Fort Bragg, North Carolina; Air Defense Artillery Test Directorate, Fort Bliss, Texas; Fire Support Test Directorate, Fort Sill, Oklahoma; and Intelligence Electronic Warfare Test Directorate, Fort Huachuca, Arizona) together with five other Test Directorates (Aviation; Close Combat; Command, Control, Communications, and Computers; Engineer and Combat Support; and Future Force) at Ft Hood, Texas. These capabilities support the development and fielding cycle of the Army Transformation as well as Joint Vision 2020 initiatives. Sustainment funding maintains existing testing capabilities at both DTC and OTC by replacing unreliable, uneconomical, and irreparable instrumentation, as well as incremental upgrades of hardware and software for M&S and instrumentation systems to assure adequate test data collection capabilities. This data supports acquisition milestone decisions for all commodity areas throughout the Army including programs such as the Mine Resistant Ambush Protected (MRAP) vehicles, Future Combat Systems (FCS), Terminal High Altitude Area Defense (THAAD), Patriot Advanced Capability Phase 3 (PAC 3), Mobile Gun System (MGS), Armed Reconnaissance Helicopter (ARH), Joint Network Node - Network (JNN-N), Warfighter Information Network - Tactical (WIN-T), Joint Tactical Radio System (JTRS), Net Enabled Command and Control (NECC), and the Army Battle Command System (ABCS) with includes Force XXI Battle Command Brigade and Below (FBCB2)/Blue Force Tracking (BFT). This Program Element develops and sustains developmental and operational test capabilities that provide key support to the Army's Transformation. In addition this Program Element supports the Global War on Terror by providing instrumentation to support ATEC's 24/7 mission at Yuma Proving Ground, Arizona - supporting the Joint Improvised Explosive Device Defeat Organization (JIEDDO) - as well as efforts throughout ATEC in support of the Army's Rapid Equipping the Force (REF) initiative.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
6 - Management support	0605602A - Army Technical Test Instrumentation and Targets		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	80467	74391	75067
Current BES/President's Budget (FY 2009)	82525	85862	74624
Total Adjustments	2058	11471	-443
Congressional Program Reductions		-569	
Congressional Rescissions			
Congressional Increases		12040	
Reprogrammings	4234		
SBIR/STTR Transfer	-2176		
Adjustments to Budget Years			-443

FY07 reprogramming to higher priority program. FY08 Congressional increases (\$12.04 million minus Congressional Program Reductions \$88 thousand); Robotic Manipulators for EOD (\$480 thousand); Mobile Optical Tracking System (\$1.96 million); Joint Directed Energy Test Site - IED (\$4.8 million); Joint Tactical Network Test Environment (\$2.0 million); and Dugway Testing and Infrastructure Upgrade (\$2.8 million) are identified in Project 62B.

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BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605602A - Army Technical Test Instrumentation and Targets					PROJECT 628	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
628 Developmental Test Technology & Sustainment	54107	45642	46162	44296	35238	36024	36833

A. Mission Description and Budget Item Justification: This program provides critical front-end investments for development of new test methodologies, test standards, advanced test technology concepts for long range requirements, future test capabilities, and advanced instrumentation prototypes for the United States Army Developmental Test Command (DTC), a subordinate command of the Army Test and Evaluation Command (ATEC), which includes: Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; White Sands Missile Range (WSMR), New Mexico; Electronic Proving Ground (EPG), Fort Huachuca, Arizona; Yuma Proving Ground (YPG), Arizona (including the Cold Regions Test Center (CRTC), Fort Greely, Alaska and the Tropic Regions Test Center, at various locations); Aviation Technical Test Center (ATTC), Fort Rucker, Alabama; Redstone Technical Test Center (RTTC), Redstone Arsenal, Alabama; and Dugway Proving Ground (DPG), Utah. These capabilities are required to support developmental testing requirements of high priority Army systems being rapidly fielded to Iraq and Afghanistan, and those systems supporting Army Transformation.

A key element within this program is building the Army's network-centric test capability. This capability recognizes advances in network-centric warfare and enabling technologies for Mobile Ad Hoc Networking (MANET). In addition, DoD guidance (CJCSI 6212) mandates the certification of joint C4ISR-equipped systems as net-ready in accordance with the four pillars of Net-Ready Key Performance Parameters (NR-KPP) to enhance Interoperability and Information Assurance from a networked, system of system perspective. This capability will ensure that platforms are tested as nodes on the network while executing critical mission threads from end-to-end according to the Army's network model (platforms and sensors, applications, services, transport, and standards). A critical enabler is DTC's distributed testing capability, comprised of modern simulation and interneting technologies, and integrated architecture (uses the Department of Defense Architecture Framework or DoDAF) to integrate live, virtual and constructive simulations in realistic live and synthetic environments. A network of Distributed Test Control Centers (DTCCs), each connected to the Defense Research and Engineering Network (DREN), has been installed at each Army test range to bring all of the Army's test capabilities to bear on the complex challenge of system-of-systems testing. Within the DTCC network, an Inter-Range Control Center (IRCC), installed at WSMR, serves as the primary interface between ATEC test ranges and the Future Combat Systems Lead Systems Integrator System-of-Systems Integration Laboratory (SOSIL). The IRCC will facilitate a complete virtual replication of the battlespace using distributed test assets to exercise, measure and analyze the synergies achieved through the system-of-systems architecture. It will serve as the central test control for distributed tests involving multiple ranges and the SOSIL, and will provide the central analytic data center for comparing tactical common operational pictures with ground truth. This technology investment follows Office of Secretary of Defense guidance for Test and Evaluation test architectures and test and training range interoperability.

Another key element is sustaining aging instrumentation which maintains existing capabilities at test facilities by replacing unreliable, uneconomical and irreparable instrumentation, as well as incremental upgrades of instrumentation and software, reducing their average age to assure adequate test data collection capabilities. This project develops and sustains developmental test instrumentation and capabilities that provide the data necessary to support acquisition milestone decisions for all commodity areas throughout the Army and in direct support of all Army Transformation Elements.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Provides command-level oversight, management and technical support for the DTC test technology and instrumentation investment programs. Technical support includes requirements development, project prioritization and execution of investment accounts for Small	5301	5117	5074

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
6 - Management support	0605602A - Army Technical Test Instrumentation and Targets	628	
Business Innovation Research, Major Construction, Army (MCA), Unspecified Minor MCA, Revitalization and Upgrade of facilities, Production Base Support, Army Test Technology and Sustaining Instrumentation, Major Test and Evaluation (T&E) Investment, and the Central T&E Investment Program. Provides support to ATEC Domain Teams in coordinating development of common instrumentation and technology needs for developmental and operational testing. Provides management and support costs for direct interface with the T&E Executive Agent, management of needs and solutions calls for T&E Reliance oversight, and support of the Army principal of the Test Resource Advisory Group (TRAG).			
Development, acquisition and sustainment of critical test technology and instrumentation: Provides and maintains the necessary test instrumentation, computer and communications systems, data collection, analysis and reporting equipment and other test capabilities to successfully develop and test the Army Future Force. Acquires instrumentation for reliability, availability and maintainability data collection on tracked and wheeled vehicles; replaces automotive transducers for measuring vibration and engine performance and ballistic transducers for measuring chamber pressures during ammunition tests; supports development of common data collection instrumentation used in developmental and operational testing across all test commodity areas; acquires instrumentation for electromagnetic environment effects on ground and air systems; continues replacement and upgrade of range control instrumentation, radar, optics and telemetry equipment used in missile testing; acquires data recorders, signal conditioning equipment, data processing equipment and other instrumentation for aircraft and Unmanned Aerial Systems (UAS) tests; upgrades natural environments test instrumentation used for testing weapon systems, vehicles, munitions and support equipment in extreme hot desert environments as well as extreme cold conditions; continues upgrade of survivability/vulnerability test capabilities in support of live fire and active protection systems; upgrades and replaces mobile range communications equipment and digital end devices and develops advanced test technologies and instrumentation for testing next generation materiel such as hybrid electric propulsion systems, advanced armor protection, multi-spectral sensors, and advanced soldier systems.	30307	25800	26644
Support of simulation and distributed testing for building the Army's network-centric test capability: Provides the necessary live, virtual and constructive environment, hardware-in-the-loop capabilities and models and simulations to successfully develop and test the Army Future Force. Continues development of test control simulation tools and test beds which integrate actual field instrumentation data with existing simulations and models to conduct test range management, test setup, simulation model validation and test result validation. Synthetic Environment Integration projects are used to develop and demonstrate the ability to tie all geographically dispersed Army test ranges and synthetic battle-space representations together for system of systems level testing. The FCS LSI and the Program Manager (PM), FCS Brigade Combat Team (BCT), have built this distributed test capability into their testing strategy. These projects also fund a collaborative knowledge management system to provide a common access for all data/documents within the Army test community. Continues development of a High Level Architecture (HLA) and DoD Test and Training Enabling Architecture (TENA) compliant architecture for integrating internal and external models, software algorithms, virtual test tools, databases, and synthetic environments; integrate synthetic range and image generation, and acquisition of test support tools. Continues development of tools for control and conduct of live, virtual and constructive integrated tests in net-centric warfare environments.	13149	13567	14444
Dugway Testing and Infrastructure Upgrades Congressional Add: The Dugway Proving Ground is charged with testing a broad range of sensor technologies across a variety of operational scenarios and environmental conditions including those encountered in urban operations. This presents very challenging requirements for T&E tools that can provide both high-fidelity simulated results and accurate ground truth data for sensor performance verification. By tying the modeling and simulation (M&S) software tools more closely to the actual sensor ground truth instrumentation, a more comprehensive T&E capability can be achieved. This will enable DPG to substantially improve its capabilities for improving our defense against chemical, biological and radiological threats. The Defense Advanced Research Projects Agency is funding an effort to design and build a highly engineered, autonomous 24/7, Raman-shifted, version of an Eye-safe,	1100		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
6 - Management support	0605602A - Army Technical Test Instrumentation and Targets	628	
Aerosol light detection and ranging (LIDAR) system for detecting and mapping aerosols out to ranges greater than 10 kilometers. A breadboard version of this system was developed and deployed as part of the Pentagon Shield 2004 program. It provided unprecedented profiles of aerosol distributions and flow patterns in the vicinity of the Pentagon and will be deployed for full time unattended operation in support of the Pentagon Force Protection Agency. M&S software has also been developed for providing an understanding of how threat clouds will evolve on the battlefield and in urban environments as they are affected by meteorology and terrain. The purpose of this project is to build one or more LIDAR referee systems to develop elastic backscatter LIDAR calibration procedures and models, and to merge multiple LIDAR and other referee system data with atmospheric dispersion and LIDAR models, in order to generate the best possible aerosol cloud characterization and tracking.			
Chemical Biological Defense Materiel Test and Evaluation Initiative (CBDMTEI) Congressional Add: Supports the creation of a Technology Development, Application and Commercialization Center to promote licensing of inventions and submission of research proposals. Also showcases DPG technology to business and education institutions, and sponsors activities to showcase capabilities of small business and educational institutions of interest to DPG. As a Partnership Intermediary under 15 U.S. Code, 3715 between DPG, commissioned as the Department of Defense Center of Excellence for chemical and biological test and evaluation, the DTC, (its parent command) and teamed with the University of Utah and Battelle. This center will serve as a vehicle to quickly identify and transfer innovative test instrumentation and methodology technology to DPG and DTC and to commercialize dual use technologies developed by academia, the private sector, or the Department of Defense.	1650		
White Sands Missile Range Study Congressional Add: Provides an updated range wide Environmental Impact Statement (EIS) that covers a broad range of joint RDT&E activities. WSMR is the largest major range and test facility base in the Department of Defense. A variety of test and training activities occur at WSMR, each of which require environmental consideration per the National Environmental Protection Act (NEPA) and state environmental regulations. As the range mission evolves to meet the DoD transformational needs, the environmental documentation, process and uses of the range must also evolve. On January 6, 2006, the Army announced the location of the Evaluation Brigade Combat Team at Ft. Bliss/White Sands Missile Range and the establishment of a center for conducting the system design and development of the Future Combat System. This new type of RDT&E activity will not only transform the Army, but it will transform the use of WSMR and the region support infrastructure.	2600		
Funding for the Small Business Innovative Research/Small Business Technology Transfer Programs		1158	
Total	54107	45642	46162

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605602A - Army Technical Test Instrumentation and Targets					PROJECT 62C	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
62C MODELING AND SIMULATION INSTRUMENTATION	13689	28268	28462	29612	22696	23358	23884	

A. Mission Description and Budget Item Justification: Increased funding in FY07 develops synthetic environments and instrumentation systems necessary to test FCS and Future Force systems under realistic operational conditions. This project provides the critical foundation necessary to develop and sustain the Army Test and Evaluation Commands (ATEC) current and future modeling and simulation (M&S) instrumentation efforts. ATEC's M&S efforts include: Operational Test Tactical Engagements System (OT-TES); Command, Control and Communication Driver (C3 Driver); Test Technology Execution Centers (TTEC); Test and Evaluation Enterprise Architecture (TEEA); Intelligence Modeling and Simulation for Evaluation (IMASE); Extensible C4I Instrumentation System Fire Support Application (ExCIS-FSA); Simulation Testing Operations Research Model (STORM); and Operational Test Command (OTC) Analytic, Simulation and Instrumentation Suite (OASIS) Integration and Management. All these systems will benefit Army's Acquisition Category (ACAT) I, II and III systems under operational test and series of Future Combat Systems. Beginning FY 2008 funding from PE Number 0605602A Project 62B for modeling, simulation, and instrumentation development and the subsequent sustainment of all systems are identified under the PE line 0605602A Project 62C.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
FY07 Planned Programs: Funds will be utilized for the development and sustainment of high priority modeling and simulation instrumentation systems, such as Next Generation Command, Control, Communications, and Intelligent Engineering and Evaluation Systems (NG CEES), M&S Preparation and Integration for FCS OT, M&S Architecture and Requirement for FCS, ExCIS FSA, IMASE, OASIS Integration, Neural Network Based Software, and TTEC Base.	11092		
FY08 and FY09 Planned Programs: Funds will be utilized for the development and sustainment of high priority modeling and simulation instrumentation systems. The following systems are planned: OT-TES sustainment and minor upgrades, TTEC, TEEA, IMASE, Performance Instrumentation Systems, Time Space Positioning Information (TSPI) and Telemetry System, Network Control Systems and Data Management, Imaging Systems, Sustainment of OTC MS&I Inventory, ExCIS FSA, STORM, OASIS Integration and Management, Air Defense Artillery Simulation.		25401	26419
Funds development of the C3 Driver. The C3 Driver support the Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Army Battle Command System (ABCS) 6.3, 6.4, Brigade Combat Team, Joint Tactical Radio System and Warfighter Information Network-Tactical development and integration at the Central Technical Support Facility and contractor location as the Army's single simulator/stimulator.	2597	2076	2043
Small Business Innovative Research/Small Business Technology Transfer Programs		791	
Total	13689	28268	28462

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE					PROJECT	
6 - Management support		0605604A - Survivability/Lethality Analysis					675	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
675 Army Survivability Analysis & Evaluation Support	42769	41681	41066	42456	39074	39944	40844	

A. Mission Description and Budget Item Justification: This project funds the investigation of the survivability, lethality and vulnerability (SLV) of designated Army systems to all battlefield threats. It supports transforming the Army to a highly effective mobile force depending on symmetry between Survivability, Lethality, Mobility, Manpower and Personnel Integration (MANPRINT), Deployability, and Sustainability. The challenge of the Army Transformation is to examine holistically the contribution of platforms to force effectiveness. This project provides lethality and survivability data of potential systems in the Stryker and Future Forces to achieve symmetric mix of force effectiveness. The analysis is integrated across all battlefield threats (i.e., conventional ballistic, electronic warfare, information warfare and directed energy). The results are used by each Program Manager (PM) and the Program Executive Officer (PEO) to direct weapon system development efforts and structure product improvement programs; by the Army Test and Evaluation Command's Army Evaluation Center (ATEC/AEC) when they provide system evaluations in support of milestone decisions; by the user to develop survivability/lethality requirements, doctrine and tactics; and by decision makers in formulating program/production decisions.

Additionally this project supports specialized survivability analysis, information warfare (IW), and information operations (IO) of Army communications, electronic equipment and digitized forces against friendly and enemy threats. Provides field threat environment support for Electronic Warfare Vulnerability Analysis (EWVA). Analyzes vulnerabilities of foreign threat weapons and command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) and Intelligence Electronic Warfare (IEW) systems to U.S. Army Electronic Warfare (EW) systems. Provides threat weapon electronic design data to countermeasure developers and technical capability information to the intelligence community. Supports Army initiatives in vulnerability reduction of C4I/IEW systems against battlefield threats, including IW. Provides analysis for understanding potential vulnerabilities of Digitized Force developmental systems. Supports Army Warfighting Experiments and associated Information Operations Vulnerability Assessments for Digitized Force Architecture. Supports vulnerability analysis of situational awareness data of the Transformation Force.

Analysis includes survivability and vulnerability analysis of ground systems of the Stryker and Future Force for Army Transformation and other Army ground combat systems; Army air defense and missile defense systems; Army aviation systems and Unmanned Aerial Vehicles (UAV); Army fire support weapons (smart and conventional); Horizontal Technology Integration systems, Advanced Technology Demonstration initiatives, and proposed survivability enhancements to weapon platforms.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Completed non-ballistic survivability/lethality analysis for Stryker variants/configurations. Conduct Stryker Mobile Gun System and Nuclear, Biological and Chemical Reconnaissance vehicle Live Fire Test and Evaluation (LFT&E) and non-ballistic survivability analysis. For these two variants, provide pre-shot predictions, perform damage assessments after live fire tests, post-shot analyses and provide technical data required by ATEC for the Systems Evaluation reports. Completed baseline crew survivability analysis for Tactical Wheeled Vehicle (TWV) variants/configurations. Conduct crew survivability analysis for Tactical Wheeled Vehicle variants/configurations in support of the Long Term Armor Strategy (LTAS) Live Fire Test and Evaluation (LFT&E). For the TWV variants, provide pre-shot predictions, perform damage assessments after live fire tests, post-shot analyses and provide technical data required by ATEC for the Systems Evaluation Reports. Conducted integrated survivability, lethality, and vulnerability analyses for Army			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
6 - Management support	0605604A - Survivability/Lethality Analysis	675	
Future Combat Systems. More information continued into the next box of text below...			
continued from above... Initiate modeling, analysis and simulation efforts supporting the FCS program, to include Active Protection Systems and FCS Lethality. Contribute to the Development of the System of Systems analysis methodology for Unit of Action survivability. Investigate the vulnerability/survivability implications of FCS advanced technologies including new armors and hybrid electric propulsion systems. Develop the methodologies necessary to support the characterization and assessment of FCS platforms equipped with these systems. Aid FCS platform designers and technology suppliers to enhance the survivability of these technologies. Identify and manage Soldier Survivability related issues during FCS system design to include fratricide prevention and crew protection. Support the planning and execution of the ballistic vulnerability and Title 10 LFT&E programs on the FCS, in conjunction with ATEC and Director, Operational Test & Evaluation (DOT&E). Provided survivability analysis for the functional analysis/functional decomposition effort for development of the FCS system of system specification. Provided analytical data and expertise for the system functional review and the initial preliminary design review. In FY07, produced vulnerability data for Manned Ground Vehicle (MGV), Armed Recovery Vehicle (ARV) and UAVs to support the Army Materiel Systems Analysis Activity certification of the Design Concept Baseline, and provided real-time integrated support and teaming with the FCS MGV engineering design team to insure appropriate vulnerability reduction measures are implemented during the preliminary design process. In FY08 continue FCS MGV engineering design team support and participate in the Preliminary Design Review, provide analytical input in support of the TEMP Update, continue support to the network analysis effort. In FY09, support LFTE armor coupon testing continue FCS MGV engineering design team support and continue network analysis support.	12703	12518	12900
Conduct integrated survivability, lethality, and vulnerability analyses for aviation systems. Complete CH-47F LFT&E survivability evaluation. Prepare multi-threat survivability analysis data for CH-47F milestone C decision. Provide Blackhawk and Apache LFT&E support. Conduct EW vulnerability assessments for developmental U.S. Army munition systems such as Advanced Precision Kill Weapon System (APKWS), Intelligent Munition System (IMS) and Mid-Range Munition (MRM). Conduct ballistic survivability/lethality analysis for U.S. Army munitions systems to include APKWS, Spider, XM 982 Excalibur, MRM, Precision Guided Mortar Munition (PGMM), Guided Multiple Launch Rocket System (GMLRS) w/Dual Purpose Improved Conventional Munitions (DPICM), GMLRS Unitary, Compact Kinetic Energy Missile (CKEM) and Javelin pre-planned product improvement. Provide Global Positioning System jamming analysis for U.S. Army munition systems to include Excalibur, GMLRS w/DPICM and GMLRS Unitary. Conduct obscure and atmospheric effects survivability analysis for U.S. Army munitions systems.	6900	6900	6900
Conduct integrated electronic and IW effects survivability analysis on command and control systems, and various Army weapon platforms as they integrate C4ISR components with internal information/computer processors controlling automotive, flight, fire control and sensor functions. This effort supports the full set of Army Battle Command Systems: Force XXI Battle Command, Brigade & Below, Advanced Field Artillery Tactical Data System, Maneuver Control System, Forward Area Air Defense-C2I, All Source Analysis System, Combat Service Support Control System, and Advanced Missile Defense Warning System. Continue to expand IW vulnerability assessment program to determine exploitable weaknesses in the Digitized Forces (including FCS) and recommend mitigating solutions. Focus on processor components of the Stryker Force to determine the limitations of system performance in an IW threat environment. Conduct integrated electronic and IO survivability analysis for Army communications systems such as Warfighter Information Network-Tactical (WIN-T), the Near Term Digital Radio, Joint Tactical Radio System (JTRS), Single Channel Anti-Jam Man-Portable Terminal, Secure Mobile Anti-Jam Reliable Tactical Terminal and Single Channel Ground and Airborne Radio System Advanced System Improvement Program. Conduct integrated electronic and IO survivability analysis for C2 systems integral to air and missile defense systems. Conduct integrated electronic and IO survivability analysis for Global Positioning System components as they are integrated into Army munitions systems. Includes update of information warfare vulnerability database, and vulnerability analyses of Tactical Internet components to	13379	13528	14205

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
6 - Management support	0605604A - Survivability/Lethality Analysis	675		
radio frequency directed energy weapons (RFDEW). Develop modeling and simulation to examine impacts of EW and IW attacks on the survivability of FCS. Conduct EW and IW investigations of the HTRS design via supplied simulations and emulations.				
Conduct System of Systems Concept of Employment (SoSCOE) assessment and third assessment of JNN. BY 08 conduct EW & IO survivability testing and analysis of JTRS/WIN-T. By 09 perform analysis of preliminary survivability analysis of FCS networks. Conduct integrated survivability, lethality, vulnerability analyses for developmental air defense and missile defense systems, pre-planned product improvements of current systems, and recently fielded systems. Systems to be addressed include Ballistic Missile Defense System (BMDS), Terminal High Altitude Area Defense (THAAD), Patriot, Medium Extended Air Defense System (MEADS), Surface-Launched Advanced Medium-Range Air-to-Air Missile (SLAMRAAM), Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS), and Sentinel. Provide interim survivability reports. Recommend survivability enhancements. Project also funds Anti-Radiation Missile (ARM) Counter-Arm efforts that assess threat technologies against THAAD and Ground-Based Midcourse Defense, Patriot, MEADS, and Forward Area Air Defense-C21 (FAAD-C21) ground based sensors. Includes work on Focal Plane Array Countermeasures (FPACM) (Project Agreement Partner: United Kingdom): Produce final assessment report for FPACM. Assist in transitioning to new FPACM agreement with the Air Force. Continue support of Missile Defense Agency's (MDA) Ballistic Missile Defense System (BMDS) through MDA Black Team participation which includes postulation of potential countermeasure threats, assessment of countermeasure impacts on BMDS systems and providing communications jamming and Information Assurance inputs to the Adversary Capability Document. Support development of BMDS Test Bed. Design and develop hardware to support the software research and development for the Patriot Advanced Capability-3 Seeker electronic countermeasures/electronic counter-countermeasures algorithms.	5337	5400	5500	
System of Systems Survivability Simulation - develop a System of Systems Survivability engineering model used with the Combined Arms and Support Task Force Evaluation Model (CASTFOREM) and its successor, Combat XXI. The System of Systems Survivability model provides details of how combat outcomes are dependent on understanding the way quality of military decision-making is conditioned by information flow on the battlefield. This model will advance the understanding of Information Operations and Information Warfare.	1200	1238	1561	
Complete engineering design, site preparation work and concrete pad construction for rotorcraft Survivability Assessment Facility. This is a congressional add. Not a new start.	3250	1600		
SBIR/STTR (DA deductions)		497		
Total	42769	41681	41066	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
6 - Management support	0605604A - Survivability/Lethality Analysis			675
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	43544	40343	41111	
Current BES/President's Budget (FY 2009)	42769	41681	41066	
Total Adjustments	-775	1338	-45	
Congressional Program Reductions		-262		
Congressional Rescissions				
Congressional Increases		1600		
Reprogrammings	-180			
SBIR/STTR Transfer	-595			
Adjustments to Budget Years			-45	

FY08 Congressional increase for Rotorcraft Survivability Assessment Facility (\$1.6 million).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605605A - DOD High Energy Laser Test Facility					PROJECT E97	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
E97 DOD HELSTF	16135	8746	2835	2874	1911	1954	1998

A. Mission Description and Budget Item Justification: The High Energy Laser Systems Test Facility (HELSTF) provides a one-of-a-kind, broad based high energy laser (HEL) test and evaluation capability which directly supports testing of laser variants of the Future Combat Systems (FCS). Specifically, HEL weapons will play a major role in the Counter Rockets, Artillery and Mortars (CRAM) initiative and can be a key component of the Future Force supporting Full Dimensional Protection. HELSTF is part of the Department of Defense (DoD) Major Range and Test Facility Base (MRTFB) and supports Tri-Service HEL research and development to include damage, vulnerability, propagation, and lethality laser testing as well as HEL weapon developmental and operational test and evaluation (DTE&OTE). The HELSTF's laser development support capabilities include a fully certified open-air HEL test range, test cells for bringing breadboard to brassboard test devices, fully integrated Command, Control, Communications & Intelligence (C3I) systems and a suite of beam directors to perform both static and dynamic tracking tests. Other capabilities include an extensive array of fully instrumented test sites, full laser meteorological support, and an approved site for above-the-horizon dynamic HEL testing certified for predictive avoidance by the Laser Clearing House. HELSTF's location on White Sands Missile Range (WSMR) provides unparalleled testing flexibility because of WSMR's 3200 square miles of controlled land mass and 7000 square miles of controlled airspace. This location also enables HELSTF to leverage the existing WSMR T&E infrastructure. Current HELSTF facilities include the Sea Lite Beam Director (SLBD), the Mid-Infrared Advanced Chemical Laser (MIRACL), the Large Vacuum Chamber (LVC) with associated Vacuum Test System (VTS), the Solid State Laser testbed, the Tactical High Energy Laser (THEL) testbed, and the Low Power Chemical Laser (LPCL). This multiple use facility supports testing of laser effects for targets ranging from material coupon testing up through full-scale static and dynamic targets, explosive targets, and testing of targets in a high altitude space environment. HELSTF has embarked on its own modernization to fully upgrade its mission control systems, develop state-of-the-art HEL diagnostic capabilities, data reduction, and a mobile HEL diagnostic test suite to support DTE and OTE for potential HEL weapons in the Army Future Force in all relevant combat environments.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
In FY 2007 continued to perform operation, maintenance and base operations support functions in support of the Army, Department of Defense and other agencies (Missile Defense Agency (MDA) MUDPACK program, Special Operations Command (SOCOM) Advanced Tactical Laser (ATL), Air Force Airborne Laser (ABL) program, Full Scale Airflow Static Test (FAST) program, the US Army Space & Missile Defense Command (USASMD) Technical Center High Energy Laser Technology Demonstrator (HEL-TD) program, and Navy HEL Low Aspect Target Tracking (HEL-LATT), and other laser programs). Conducted a variety of tracking tests with SLBD to support USASMD, U.S. Air Force (USAF) and MDA missions. Complete Solid State Laser Lethality Testbed and Solid State Laser Transition Testbed based on the ex-THEL Pointer-Tracker System (THEL-PTS) in FY2007. In FY 2008, HELSTF will continue to provide limited support to the Laser T&E programs of all Services and DoD Agencies using the Solid State Laser (SSL) Lethality Testbed and the SSL Transition Testbed.	16135	8502	2835
Small Business Innovative Research / Small Business Technology Transfer Programs.		244	
Total	16135	8746	2835

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
6 - Management support	0605605A - DOD High Energy Laser Test Facility			E97
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	16438	2801	2840	
Current BES/President's Budget (FY 2009)	16135	8746	2835	
Total Adjustments	-303	5945	-5	
Congressional Program Reductions		-55		
Congressional Rescissions				
Congressional Increases		6000		
Reprogrammings	121			
SBIR/STTR Transfer	-424			
Adjustments to Budget Years			-5	

FY08 Congressional increases \$3.0 million for Mid-Infrared Advanced Chemical Laser and \$3.0 million for Sea Lite Beam Director.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605606A - AIRCRAFT CERTIFICATION					PROJECT 092	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
092 AIRCRAFT CERTIFICATION	4524	4658	5054	5781	6029	9551	9851

A. Mission Description and Budget Item Justification: The Aircraft Certification program is a unique Army Aviation mission that provides independent Airworthiness Qualification of all assigned Development and In-Production Army Manned and Unmanned Aircraft systems as required by AR 70-62. The Aircraft Certification (and Qualification) Program is essential for ensuring the safe operation of aircraft. This program, when its requirements are fully funded, performs all engineering functions (design, analysis, testing, demonstrations, and system specification compliance) essential for certifying the airworthiness of assigned Army aircraft. This includes performing safety-of-flight investigations/assessments, evaluating system risks, developing Airworthiness Impact Statements, and evaluating/issuing Airworthiness Flight Releases, Safety of Flight Messages, and Aviation Safety Action Messages for new and upgraded aircraft systems. This funding also provides management/execution of the Army's Aeronautical Design Standards (ADS) Program, management of airworthiness approval for new systems and material changes for all assigned Army aircraft systems, airworthiness-engineering support to the Army Aviation Program Executive Office (PEO) and Technology Applications Program Office (TAPO) in developing requirements for major development/modification and any future system/subsystems, and management of the test and evaluation process to support airworthiness qualification process. This program performs general research and development in support of aircraft qualification and overarching airworthiness projects that involve multiple platforms or airworthiness processes. Current programs requiring Airworthiness Qualification support are TAPO and PEO Aviation Future Force Systems such as Longbow Apache, F-model Chinook, and M-model Black Hawk; new systems such as Armed Reconnaissance Helicopter (ARH) and Light Utility Helicopter (LUH), Longbow Block III Apache, Joint Cargo Aircraft (JCA), Extended Range/Multi Purpose (ER/MP) Unmanned Aircraft System (UAS), Aerial Common Sensor (ACS), Shadow-C UAS, and other critical aircraft programs such as Aviation Mission Equipment, Aviation Survivability Equipment, Common Sensor, and Blue Force Tracker. With the currently-budgeted D092 program, a minimal aircraft certification program is being executed. From FY07 to FY13, the effort will be limited to development of airworthiness procedures, specifications, and other critical standard design and qualification documents, active participation in airworthiness related tri-service activities (i.e. Joint Logistics Commanders Group), and early airworthiness involvement in Technology Transition projects (i.e. Joint Heavy Lift and OSD initiatives). Starting in FY14, significantly increased funding will allow much more of the above-listed activities to occur.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Managed/executed technical and airworthiness qualification studies dictated by changes in Law or technology advancements for Army force modernization aircraft systems or multi-system programs.	1520	1506	1690
Continued studies to ensure safety of Army force modernization aircraft systems or programs.	691	757	818
Developed, implemented, and maintained Army Aeronautical Design Standards, airworthiness procedures and tools, and overarching Airworthiness qualification documentation.	787	814	879
Provided continuing engineering support for technology upgrades to Army force modernization aircraft systems or programs	493	510	551
Provide technical and airworthiness qualification for Commercial Derivative Aircraft in conjunction with the Federal Aviation Administration	353	453	536
Lead, advised, and provided technical cognizance for Army Aviation through participation and involvement in tri-service/NATO	680	581	580

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
6 - Management support	0605606A - AIRCRAFT CERTIFICATION	092	
airworthiness activities (i.e. Joint Logistics Commanders Group)			
SBIR/STTR		37	
Total		4524	4658
			5054

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
6 - Management support	0605606A - AIRCRAFT CERTIFICATION			092
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	4530	4688	5024	
Current BES/President's Budget (FY 2009)	4524	4658	5054	
Total Adjustments	-6	-30	30	
Congressional Program Reductions		-30		
Congressional Rescissions				
Congressional Increases				
Reprogrammings	33			
SBIR/STTR Transfer	-39			
Adjustments to Budget Years			30	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605702A - Meteorological Support to RDT&E Activities					PROJECT 128	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
128 Meteorological Support to RDT&E Activities	8302	8294	8289	8378	7212	7369	7531

A. Mission Description and Budget Item Justification: All functions and resources in this Program Element (PE) are managed by the U.S. Army Developmental Test Command, a subordinate command of the U.S. Army Test and Evaluation Command (ATEC). Meteorological support to research, development, test, and evaluation (RDT&E) activities provides standard and specialized weather forecasts and data for test reports to satisfy Army/Department of Defense RDT&E test requirements for modern weaponry, e.g., (1) unique atmospheric analysis and sampling to include atmospheric transmittance, extinction, optical scintillation, infrared temperature, aerosol/smoke cloud dispersion characteristics, ballistic meteorological measurements, snow characterization and crystal structure; (2) test event forecasting to include prediction of sound propagation for ballistic firing tests, specialized prediction of light levels and target to background measurements, and predictions for electro-optical testing and ballistic artillery/mortar firing; and (3) advisory and warning products such as go/no-go test recommendations for ballistic and atmospheric probe missiles, smoke/obscurant tests, hazard predictions for chemical agent munitions disposal, monitoring dispersion of simulant clouds for chemical/biological detector tests, simulated nuclear blasts, and weather warnings for test range safety. Provides technical support to Army Program Executive Officers (PEOs), Project Managers (PMs), and the Army test ranges and sites at: White Sands Missile Range (WSMR), NM; Electronic Proving Ground (EPG), Fort Huachuca, AZ; Dugway Proving Ground (DPG), UT; Aberdeen Test Center (ATC), Aberdeen Proving Ground, MD; Redstone Technical Test Center (RTTC), Redstone Arsenal, AL; Yuma Proving Ground (YPG), AZ (including the Cold Regions Test Center (CRTC), Fort Greely, AK); Fort Belvoir, VA; and Fort A.P. Hill, VA. This PE develops methodologies and acquires instrumentation and systems that allow meteorological teams to support current and future Army/DoD RDT&E requirements. It finances indirect meteorological support operating costs not billable to customers and replacement/upgrade of meteorological instrumentation and support systems. Direct costs for meteorological support services are not funded by this PE, but are borne by the customer (i.e., materiel/weapons developers and project/product managers) in accordance with DoD Directive 7000.14R, October 1999. This program is essential to the accomplishment of the Army's developmental test mission in that precise weather modeling and measurements directly influence test item performance and quantify test item weather dependencies and vulnerabilities.

Accomplishments/Planned Program:	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Provides indirect costs (personnel salaries) for generating weather forecasts, severe weather warnings and advisories; staff meteorological services; and atmospheric measurements in support of Army/DoD tests and projects at nine Army sites/test ranges, and alternate test sites as required. Provides program management for meteorological support to the Army research, development, test and evaluation community and technical review/assistance to ranges and meteorological support teams. Includes Verification, Validation and Accreditation (VV&A) for the Four-Dimensional Weather (4DWX) System.	2341	2339	2670
Provides funding for meteorological instrumentation and technology to support RDT&E activities at Army test ranges. Includes funding for development, fielding, and enhancement of the 4DWX system, an advanced meteorological support system that provides high-resolution weather forecasts and analyses to support developmental and operational field tests. The 4DWX analyses and forecasts of the 3-dimensional structure of the atmosphere over time (4th dimension) are used in test planning, conduct, and forensic analyses and also provide realistic atmospheric conditions for modeling and simulation. The Global Meteorology on Demand (GMOD) capability allows range meteorologists to set-up and launch 4DWX modeling capabilities anywhere in the world. FY07 accomplishments include initial transition of the range 4DWX systems to the Weather Research and Forecast (WRF) model (a nationally recognized next-generation weather prediction system designed for operational forecasting and atmospheric research); further upgrades in GMOD graphical user	5961	5812	5619

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
6 - Management support	0605702A - Meteorological Support to RDT&E Activities	128	
interface; improved land-surface and boundary layer parameterizations to improved forecast accuracy; new data acquisition systems; and the replacement of Linux clusters. 4DWX system enhancements planned in FY08-FY09 include WRF VV&A, use of the new DPG high performance computer (HPC) to generate 20-year 3-D climatologies for seven ranges; implementation of a prototype probabilistic forecasting capability for high profile tests; and additional links between 4DWX and range application models. FY07 instrumentation funding was used to continue a multiyear effort to replace or upgrade obsolete instrumentation, including replacing obsolete upper-air sounding systems, upgrades to the Surface Atmospheric Measurement System weather stations, renovation of the radar wind profilers, and replacement of Doppler acoustic sounders for near real-time boundary layer wind profile measurements. This instrumentation modernization will continue in FY08-FY09.			
Small Business Innovative Research/Small Business Technology Transfer Programs		143	
Total	8302	8294	8289

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
6 - Management support	0605702A - Meteorological Support to RDT&E Activities			128
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	8477	8346	8313	
Current BES/President's Budget (FY 2009)	8302	8294	8289	
Total Adjustments	-175	-52	-24	
Congressional Program Reductions		-52		
Congressional Rescissions				
Congressional Increases				
Reprogrammings	-24			
SBIR/STTR Transfer	-151			
Adjustments to Budget Years			-24	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE					PROJECT	
6 - Management support		0605706A - MATERIEL SYSTEMS ANALYSIS					541	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
541 MATERIEL SYS ANALYSIS	16464	16423	17028	17375	15563	15907	16298	

A. Mission Description and Budget Item Justification: This program element funds Department of the Army (DA) civilians at the Army Materiel Systems Analysis Activity (AMSAA) to conduct its mission of materiel systems analysis, the development and certification of systems performance data, and the development of systems performance methodology and Modeling and Simulation (M&S).

AMSAA is the Army's center for item/system level performance analysis and certified data. In accomplishing its materiel systems analysis mission, AMSAA analyzes the performance and combat effectiveness of conceptual, developmental, and existing systems. Unique models and methodologies have been developed to predict critical performance variables, such as weapon accuracy, target acquisition, rate of fire, probability of inflicting catastrophic damage, and system reliability. AMSAA is responsible for the generation of these performance and effectiveness measures and for ensuring their standard use across major Army and Joint studies. AMSAA conducts and supports various systems analyses, such as: Analyses of Alternatives (AoAs), system cost/performance tradeoffs, early science and technology tradeoffs, weapons mix analyses, system risk assessments, analytical support for Test and Evaluation, and requirements analyses. These analyses are used by Army (Research, Development and Engineering Command (RDECOM)/Army Materiel Command (AMC), Program Executive Officers (PEO)/Project Managers (PM), Department of Army (DA) staff/Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA(ALT))) and Department of Defense (DoD) leadership in making acquisition, procurement, and logistics decisions in order to provide quality equipment and procedures to the Soldier.

AMSAA's M&S capabilities support the development, linkage, and accreditation of live, virtual, and constructive simulations, and provide unique tools that support systems analysis of individual systems and the combined-arms environment. AMSAA maintains a significant number of models and simulations, most of which were developed in-house to address specific analytical voids. This M&S infrastructure provides a hierarchical modeling process that is unique to AMSAA and allows for a comprehensive performance and effectiveness prediction capability that can be utilized to make trade-off and investment decisions prior to extensive and expensive hardware testing. AMSAA is the Army's executive agent for the verification, validation, and accreditation of item/system level performance models. In this role, AMSAA assists model developers with the development and execution of verification and validation plans to ensure new models and simulations provide credible information/results for decision making.

AMSAA serves as the Army's Executive Agent for reliability and maintainability standardization improvement by developing and implementing reliability and maintainability acquisition reform initiatives. AMSAA develops and applies engineering approaches that assess the reliability of Army materiel and recommends ways to improve reliability, thereby reducing the logistics footprint, reducing life cycle costs, and extending failure-free periods for deployed equipment. AMSAA's electronic and mechanical Physics of Failure (PoF) program pioneered the Army's involvement in utilizing computer-aided engineering tools in the analysis of root-cause failure mechanisms at the component level during the system design process. AMSAA reliability engineering and PoF tools/analyses have been used extensively to support the design improvement of developmental systems and fielded systems used in Current Operations resulting in improved reliability, reduced Operational and Support costs, and reduced logistics expenditures and foot print.

As the Army's center for materiel systems analysis, AMSAA provides the technical capability to support Army and DoD decision makers throughout the entire acquisition process in responding to analytical requirements across the full spectrum of materiel. AMSAA's unique, integrated analytical capability is a critical asset that provides Army leadership with timely, reliable, and high quality analysis to support complex decisions required for Army Transformation and Current Operations. AMSAA has developed an integrated set

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605706A - MATERIEL SYSTEMS ANALYSIS	PROJECT 541
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of skills and tools focused on its core mission to be responsive to the breadth and depth of systems analysis requirements critical in supporting Army decisions.

AMSAA is providing assistance to the Army Evaluation Command to assess and determine the essential analytical requirements to enhance Army evaluations. AMSAA's support in this area will improve evaluation products and result in better materiel solutions to the Warfighter. AMSAA is providing this assistance to various ACAT systems and quick response analysis in support of rapid initiatives for Current Operations.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>		<u>FY 2009</u>
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This project funds the salaries of civilian employees assigned to the materiel systems analysis mission.				
Pays DA civilians at AMSAA who are responsible for developing and certifying weapon/materiel system performance and effectiveness data for U.S. and foreign systems to be used during Army and Joint AoAs, force structure studies, and theater level studies. Performance and combat effectiveness analyses of materiel systems and technology base programs are conducted in support of DA, the Army Materiel Command, the Research, Development and Engineering Command, Program Executive Officers/Program Managers, the Training and Doctrine Command and the Army Test and Evaluation Command. These analyses include the conduct of and support to: AoAs, system cost/performance tradeoffs, early technology tradeoffs, weapons/systems mix analyses, requirements analyses, technology insertion studies, reliability growth studies, and PoF analyses. Examples of programs to be supported with critical analyses: Future Combat Systems Brigade Combat Team (FBCT), Experimental Brigade Combat Team (EBCT), Mine Resistant Ambush Protected (MRAP) System assessment, Joint Light Tactical Vehicle (JLTV), Joint Non-Lethal Weapons Program (JNLWP), Intelligent Munitions System (IMS), Stryker, and Future Force Warrior. AMSAA develops and modifies system level methodologies, models, and simulations to be used in the conduct of analyses. Examples of efforts include the Infantry Warrior Simulation (IWARS), OneSAF Survivability Suite (OS2), suppression methodology development, Geographical Information Systems (GIS) modeling, Network System of Systems (SoS) modeling, power and energy (soldier/vehicle) methodology development. Improvised Explosive Device (IED) modeling enhancements, search and target acquisition methodology improvements, sensor fusion modeling, mechanical and electronic Physics of Failure (PoF) modeling, vehicle performance methodology, Active Protection System performance, non-lethal weapons performance and effectiveness estimation methodology, and modeling operations in urban terrain.	16464	16423		17028
Total	16464	16423		17028

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
6 - Management support	0605706A - MATERIEL SYSTEMS ANALYSIS			541
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	16344	16526	16987	
Current BES/President's Budget (FY 2009)	16464	16423	17028	
Total Adjustments	120	-103	41	
Congressional Program Reductions		-103		
Congressional Rescissions				
Congressional Increases				
Reprogrammings	120			
SBIR/STTR Transfer				
Adjustments to Budget Years			41	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605709A - EXPLOITATION OF FOREIGN ITEMS					PROJECT C28	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
C28 ACQ/EXPLOIT THREAT ITEMS (MIP)	4974	3291	3530	5521	5629	5662	5730	

A. Mission Description and Budget Item Justification: This is a continuing project for acquisition and exploitation of foreign materiel constituting potential advanced technology threats to U.S. systems. The primary aim of this project is to maximize the efficiency of research and development for force and materiel development by reducing the uncertainties concerning these threats. The project also answers general scientific and technical intelligence requirements, aids in the development of countermeasures to threat materiel and threat technology, and provides materiel for realistic testing and training. Acquisitions and exploitations are executed according to an Army Foreign Materiel Review Board and with the approval of the Army, Director of Intelligence (G2).

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Acquire threat systems identified and prioritized in the Army Foreign Materiel Program (FMP) Five Year Plans.	1741	1152	1235
Initiate, continue, or complete exploitation projects on ground systems of Army interest identified in the appropriate Army FMP Exploitation Programs.	3233	2139	2295
Total	4974	3291	3530

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February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
6 - Management support	0605709A - EXPLOITATION OF FOREIGN ITEMS			C28
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	4938	3291	3530	
Current BES/President's Budget (FY 2009)	4974	3291	3530	
Total Adjustments	36			
Congressional Program Reductions				
Congressional Rescissions				
Congressional Increases				
Reprogrammings	36			
SBIR/STTR Transfer				
Adjustments to Budget Years				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE					
6 - Management support		0605712A - Support of Operational Testing					
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
Total Program Element (PE) Cost	79212	78797	72942	74466	65044	66411	67956
001 ATEC Joint Tests and Follow-On Test & Evaluations	3539	7825	8264	8638	4397	4495	4597
V02 ATEC ACTIVITIES	75673	70972	64678	65828	60647	61916	63359

A. Mission Description and Budget Item Justification: This Program Element provides the resources to operate the Army's operational test directorates located at Fort Hood, TX; Fort Bragg, NC; Fort Bliss, TX; Fort Huachuca, AZ; and Fort Sill, OK; all managed by the Operational Test Command (OTC), a subordinate command of the Army Test and Evaluation Command (ATEC). Also funds the Test and Evaluation Coordination Offices (TECOs) located at Fort Benning, GA; Fort Knox, KY; Fort Lee, VA; and Fort Leonard Wood, MO; as well as recurring support costs of Headquarters, Army Test and Evaluation Command (HQ ATEC), joint testing, operational test and evaluations without an Army Program Executive Officer/Project Manager and follow-on test and evaluations, all of which are managed by HQ, ATEC.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
6 - Management support	0605712A - Support of Operational Testing		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	80163	75293	72974
Current BES/President's Budget (FY 2009)	79212	78797	72942
Total Adjustments	-951	3504	-32
Congressional Program Reductions		-496	
Congressional Rescissions			
Congressional Increases		4000	
Reprogrammings	-31		
SBIR/STTR Transfer	-920		
Adjustments to Budget Years			-32

FY 2008 Congressional Plus up of \$1.6 million for EQUATE is identified in this line. Congressional Plus up of \$2.4 million for Denied GPS was placed in this line but needs to move to PE/Proj. 665602 62C.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605712A - Support of Operational Testing					PROJECT 001	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
001 ATEC Joint Tests and Follow-On Test & Evaluations	3539	7825	8264	8638	4397	4495	4597	

A. Mission Description and Budget Item Justification: This project funds the Army's direct costs of planning and conducting Multi-service Tests and Evaluations (MOTE) for which there is no Army Project Manager (PM) and Army requirements for Joint Test and Evaluation (JT&E). These are required to evaluate concepts and address needs and issues that occur in joint military environments and provides information required by Congress, Office of the Secretary of Defense, the Unified Commands, and the Department of Defense components relative to joint operations. This project also funds Follow-on Test and Evaluation (FOTE), as necessary. FOTE may be required after a full production decision to assess system training and logistics, to verify correction of deficiencies identified during earlier testing and evaluation, and to ensure that initial production items meet operational effectiveness, suitability and supportability thresholds. There has been a shift of focus for items funded by this project due to continuing operations in the US Central Command (CENTCOM). Traditional system workload has dropped off and has been replaced by rapid fielding initiatives. In response to this shift, the Army Test and Evaluation Command (ATEC) has established a forward operational assessment team in theater and a rapid response cell. These groups facilitate MOTTE, JT&E, and FOTE events in the rapid environment. Traditional acquisition requirements are expected to return to normal as operations in Iraq and Afghanistan wind down.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Joint operational testing and evaluation.	1040	2515	2795
Other-Special projects/Operational Test and Evaluation without Army Project Manager	1293	1665	1698
Multi-Service Operational Text and Evaluation/Follow-on testing and evaluations.	1206	3430	3771
Small Business Innovative Research/Small Business Technology Transfer Programs		215	
Total	3539	7825	8264

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605712A - Support of Operational Testing					PROJECT V02	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
V02 ATEC ACTIVITIES	75673	70972	64678	65828	60647	61916	63359	

A. Mission Description and Budget Item Justification: The Operational Test Command (OTC) conducts operational tests required by public law that provide significant data to the Army decision-makers on key Army systems and concepts. This project finances recurring costs for the Operational Test Command that are essential for conducting realistic and continuous testing in the critical areas of equipment, doctrine, force design and training. These recurring costs include civilian pay, core requirements for test support contracts, temporary duty, supplies and equipment. This project funds requirements for the Operational Test Command's nine test directorates and one support activity located at Fort Hood, TX; Fort Bragg, NC; Fort Bliss, TX; Fort Sill, OK; and Fort Huachuca, AZ. The primary mission of these test directorates is to perform detailed planning, execution, and reporting of Initial Operational Test and Evaluation (IOTE), and Force Development Test and Experimentation (FDTE). Project V02 also provided support for the four Test and Evaluation Coordination Offices (TECOs) located at Fort Benning, GA; Fort Knox, KY; Fort Lee, VA; and Fort Leonard Wood, MO as well as for the recurring support costs of Headquarters, Army Test and Evaluation Command (HQ ATEC).

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Operational costs for HQ ATEC includes: civilian pay, support contracts, temporary duty, supplies and equipment for non-AMHA (Army Management Headquarters Activity) HQ ATEC and TECOs.	21336	18107	17854
Operational costs including: civilian pay, support contracts, temporary duty, supplies and equipment for subordinate elements of the Operational Test Command.	54337	48301	46824
FY 2008 Congressional Adds for EQUATE (\$1.6 million) and Denied GPS (\$2.4 million)		3947	
Small Business Innovative Research/Small Business Technology Transfer Programs.		617	
Total	75673	70972	64678

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605716A - Army Evaluation Center					PROJECT 302	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
302 Army Evaluation Center	55554	61295	63382	65413	60870	62164	63510

A. Mission Description and Budget Item Justification: The Army Evaluation Center (AEC) provides independent and integrated technical and operational evaluations, and life-cycle Continuous Evaluation (CE) of assigned Major Defense Acquisition Programs (MDAP), Major Automated Information Systems, and In-Process Review (IPR) programs for major milestone decisions, materiel changes, and materiel releases in support of the Army Acquisition Executive and force development. AEC is The Army's independent evaluator. AEC develops the evaluation strategy, designs technical and operational tests, and evaluates the test results to address a system's combat effectiveness, suitability, and survivability factors pertinent to the decision process, such as: Critical Operational Issues and Criteria (COIC), system performance, soldier survivability, performance in countermeasures, system survivability, reliability, supportability, etc. AEC has the lead in planning and execution of Army Live Fire Tests and Continuous Evaluations through its evaluation and test design responsibilities. The evaluations produced by AEC are required by the Army Chief of Staff, the Army Acquisition Executive, other Army senior leaders and the Director of Operational Test and Evaluation for acquisition decisions. In addition, Army leadership has recognized the numerous benefits of an early involvement initiative. In support of ongoing contingency operations and other Global War on Terrorism (GWOT) related activities, AEC continues to dedicate a significant amount of its evaluation workload towards the evaluation of Rapid Initiative (RI) & Rapid Equipping Force (REF) systems, Urgent Material Releases, and Counter Improvised Explosive Device (IED) systems in support of the Joint IED Defeat Office (JIEDDO) and the Joint Test Board.

This project funds the salaries of civilian employees assigned to the evaluation and test design missions and associated personnel support/sustainment costs including temporary duty, supplies, equipment, and support contractors. This project does not finance test facility operations, test instrumentation or test equipment.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Provide integrated technical and operational evaluations and continuous evaluation of assigned MDAPs, major automated information systems, and IPR programs for major milestone decisions, materiel changes, and materiel releases in support of the Army Acquisition Executive and force development. Develop the evaluation strategy, design technical and operational tests, and evaluate the test results to address the combat effectiveness, suitability, and survivability factors pertinent to the decision process, for programs such as Future Combat System (FCS), Mine Resistent Ambust Protected Vehichle (MRAP), Warfighter Information Network- Tactical (WIN-T), Stryker, High Mobility Artillery Rocket System (HIMARS), Disbursed Common Ground System (DCGS), Intelligent Munition System (IMS), Joint Land Attack Cruise Missile Defense Elevated Netted Sensors (JLENS), Joint Tactical Radio System Clusters 1 & 5 (JTRS), Army Airborne Command and Control System (A2C2S), Family of Medium Tactical Vehicles (FMTV) - Suite of Integrated Infrared Countermeasures (SIIRCM), Warlock DUKE V2, CREW 2.1, and the Aerial Common Sensor (ACS). As the Army lead for Live Fire Test and Evaluation, plan and execute the Army Live Fire Test and Evaluation program for developmental systems such as the FCS. Prepare integrated System Evaluation Plans and conduct integrated technical and operational evaluations for all Army weapon systems. In support of contingency operations and the Global War on Terrorism (GWOT), AEC has drastically refocused its evaluation workload towards the evaluation of Rapid Initiative (RI) systems, Counter Improvised Explosive Device (IED)systems, and Urgent Material Releases. Includes civilian pay costs for 385 authorizations for FY09 and 371 authorizations for FY 10-15.	51929	56046	58917
Support the early involvement initiative which provides continuous support to materiel and combat developers from the inception of their	3625	4754	4465

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
6 - Management support	0605716A - Army Evaluation Center	302	
programs. This initiative leverages science and technology that will lead to cost savings, avoidances and design efficiencies early in a system's development, thereby avoiding more expensive product improvement programs later in a system's life cycle. Test and evaluation efficiencies will be gained through early identification of instrumentation, modeling and simulation tools, and other resources needed for testing, as well as making more efficient use of data from developmental testing and experiments. This initiative also supports ongoing contingency operations and other GWOT related activities by supporting the evaluation of Rapid Initiative systems, Counter IED systems, and Urgent Material Releases.			
Small Business Innovative Research/Small Business Technology Transfer Programs		495	
Total	55554	61295	63382

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
6 - Management support	0605716A - Army Evaluation Center			302
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	59465	61694	63400	
Current BES/President's Budget (FY 2009)	55554	61295	63382	
Total Adjustments	-3911	-399	-18	
Congressional Program Reductions		-399		
Congressional Rescissions				
Congressional Increases				
Reprogrammings	-3219			
SBIR/STTR Transfer	-692			
Adjustments to Budget Years			-18	

FY07 \$692 thousand (SBIR/STTR) & \$3,219 thousand applied to higher priority programs.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE					
6 - Management support		0605718A - Simulation & Modeling for Acq, Rqts, & Tng (SMART)					
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
Total Program Element (PE) Cost	5270	6302	5325	5445	4047	3711	3794
S01 INTEGRATION & EVALUATION CENTER (IEC) SUSTAINMENT	760						
S02 HQDA DECISION SUPPORT TOOLS & SERVICES	914	1740	1668	1706	498		
S03 TRAC M&S TOOLS & SERVICES	2469	3054	2111	2158	2049	2062	2111
S05 SIMULATION TECHNOLOGY (SIMTECH) PROGRAM	1127	1508	1546	1581	1500	1649	1683

A. Mission Description and Budget Item Justification: Simulation and Modeling for Acquisition, Requirements and Training (SMART) will accomplish the vision of a disciplined, collaborative environment to reduce costs and time required to provide solutions for Army needs. SMART exploits modeling and simulation (M&S) and other information technologies to ensure collaboration and synchronization of effort. SMART applies to the development of tactics and doctrine, experimentation and exercises, traditional weapon system development, and to the assessment and transition of advanced technologies to operational capabilities. The overarching goal of SMART is to reduce the time and cost of providing improved capabilities to our warfighters. Emerging information-age technologies continue to revolutionize our capabilities to collaborate among all stakeholders using data descriptions, digital representations, and virtual prototypes to improve understanding of required capabilities, shorten procurement time, reduce procurement and sustainment costs, and ultimately, reduce total lifecycle cost. SMART advocates the use of advanced technologies in concert with M&S to enable transformation through improved understanding of operational requirements, collaborative analyses of emerging technologies, and cross-domain participation in experiments and exercises. The following projects support Army institutionalization of SMART. There is currently one project under the HQDA Decision Support Tools and Services that support the Deputy Assistant Secretary of the Army for Cost and Economics (DASA-CE). The Integrated Performance Cost Model (IPCM) is a DASA-CE project that will identify major impacts on the total cost of ownership and will link cost analysis methodologies with engineering design methodologies and system requirements to allow analysts to develop cost estimates and perform cost - performance trades with the limited amounts of data available early in the program lifecycle. Army Focused Area Collaborative Teams (FACTs) conduct collaborative HQDA directed research to develop solutions for high priority Modeling & Simulation (M&S) objectives impacting current Warfighting capabilities. FACTs improve Army capabilities to leverage M&S to support key decisions on composition and doctrine of the future force and transformation, focusing on non-kinetic aspects of Battle Command. FACTs conduct research to identify key deficiencies of knowledge, algorithms and data in critically vital M&S areas to support current and future Army operations and transformation. FACTs focus on those topical areas that have near-term operational impact or have been historically difficult to model and are vital to decision-making, enhanced Warfighting capabilities, and improved ARFORGEN processes. The Army Simulation Technology (SIMTECH) project enhances Current and Future Force effectiveness by inducing research organizations and agencies on an immediate/short-term basis to conduct high-priority, promising, simulation technology research initiatives that are outside the scope of the Small Business Innovative Research (SBIR) and Army Science and Technology programs. The SIMTECH project focuses simulation technology research initiatives on immediate, short-term Army needs and serves as a catalyst for major technology breakthroughs in SMART, embedded simulation, rapid prototyping, commercial innovation, and related simulation technology.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
6 - Management support	0605718A - Simulation & Modeling for Acq, Rqts, & Tng (SMART)		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	5380	5342	5360
Current BES/President's Budget (FY 2009)	5270	6302	5325
Total Adjustments	-110	960	-35
Congressional program reductions			
Congressional rescissions			
Congressional increases		960	
Reprogrammings	40		
SBIR/STTR Transfer	-150		
Adjustments to Budget Years			-35

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605718A - Simulation & Modeling for Acq, Rqts, & Tng (SMART)					PROJECT S02	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
S02 HQDA DECISION SUPPORT TOOLS & SERVICES	914	1740	1668	1706	498			

A. Mission Description and Budget Item Justification: The HQDA Decision Support Tools and Services project provides decision support tools for the Army Staff and Forward Operating Agencies assigned to the Headquarters, Department of the Army. Currently there is one service being developed. The Integrated Performance Cost Model (IPCM) is an Army decision support tool, sponsored by the Deputy Assistant Secretary of the Army for Cost and Economics (DASA-CE), which conducts integrated analyses of system capabilities, performance, technology, acquisition programmatic strategy, and cost estimating. IPCM is a generic integrated analysis framework that enables analysts to optimize performance, cost/funding, and acquisition strategies. The objective for IPCM is to enable the dynamic discovery of requirements, cost effectiveness, engineering, and logistics optimization that seamlessly exchanges information amongst various models and databases. The resulting solution increases the quality of military worth and supportability of fielded war-fighting systems while reducing total ownership cost throughout the entire life cycle. The use of models and simulations early in the life cycle, when capabilities are being evaluated, results in a reduction of time, resources, and risk associated with the acquisition process, and provides for a much larger analysis of trade-space than the current analysis process. The robust analysis that IPCM will provide will significantly improve available information usage, and support faster, more thoroughly understood decision making capabilities for Army leaders to make informed acquisition decisions.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Integrated Performance Cost Model (IPCM) - We updated the IPCM Prototype that included a Federated Intelligent Product Environment (FIPER) infrastructure. Provided software and licenses for FIPER and DB2/WebSphere on the DASA-CE server. Provided stand-alone IPCM/FIPER analysis capability at the Tank-Automotive and Armaments Command (TAACOM). In FY08, DASA-CE will update the component level cost model. Test and validate the component level cost model, populate the database, and update the prototypes provided to TACOM. In FY09, DASA-CE will complete additional cost estimating relationship data collection, model integration and standardization.	914	1692	1668
Small Business Innovative Research/Small Business Technology Transfer Program		48	
Total	914	1740	1668

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605718A - Simulation & Modeling for Acq, Rqts, & Tng (SMART)					PROJECT S03	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
S03 TRAC M&S TOOLS & SERVICES	2469	3054	2111	2158	2049	2062	2111	

A. Mission Description and Budget Item Justification: This project will support development of modeling and simulation (M&S) tools and services such as software, hardware, and infrastructure for use within the Army's Analysis Community. The primary users for these tools and services are the Training and Doctrine Command Analysis Center (TRAC), the Army Materiel Systems Analysis Activity (AMSAA), and the Center for Army Analysis (CAA). This project will develop descriptions of, and implement technological solutions for, analysis tools to enable emerging technology assessment during concept exploration, and will develop infrastructure and enabling technologies to support Army Transformation. These are the critical efforts for analysis of futures work to justify Army requirements, assess the worth of concepts and alternative approaches to satisfy those requirements, and to develop current and emerging warfighting doctrine from tactical to operational levels of warfare.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Developed a maneuver sustainment force representation in combat models and simulations	514		
Developed knowledge, models, and data for a strongly networked Future Force Command and Control, Communications and Computers, Intelligence, Surveillance and Reconnaissance (C4ISR).	222		
Improved simulation of urban operations (complex environments, physical processes and individual and unit behaviors)	444		
Developed algorithms and data that lead to better representation of the threat, non-combatants, and factions	647		
Developed algorithms and data to better represent joint capabilities and the Army's roles as part of a joint force	99		
Developed algorithms and data that lead to better representation of space capabilities and their contributions to the joint fight	493		
Developed algorithms and data for representing individual soldier behaviors and interactions on the battlefield	50		
FY 08 and 09 funds to be distributed by HQDA (DAMO-BC) based on results of the Army Focused Area Collaborative Teams (FACT) requirements.		3026	2111
Small Business Innovative Research/Small Business Technology Transfer Program		28	
Total	2469	3054	2111

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605718A - Simulation & Modeling for Acq, Rqts, & Tng (SMART)					PROJECT S05	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
S05 SIMULATION TECHNOLOGY (SIMTECH) PROGRAM	1127	1508	1546	1581	1500	1649	1683	

A. Mission Description and Budget Item Justification: The Army Simulation Technology (SIMTECH) program enhances Current and Future Force effectiveness by inducing modeling and simulation (M&S) research agencies and organizations to conduct high-priority, promising, simulation technology research initiatives that are outside the scope of the Small Business Innovative Research (SBIR) and the Army Science and Technology programs. The SIMTECH program provides a source of competitive funds to Army research organizations and agencies to stimulate high quality, innovative M&S research with significant opportunity for payoff in Army warfighting capability. The SIMTECH program focuses the simulation technology research initiatives on immediate short-term Army capability requirements by including a theme in the annual call for proposals. The SIMTECH program serves as a catalyst for major SMART related technology breakthroughs in embedded simulation, collaboration, rapid prototyping, commercial innovation, and related simulation technology. Successful SIMTECH projects are typically transitioned to start-up projects and existing Army simulation programs. The work in this program is performed by the Army Materiel Command, the Army Corps of Engineers Engineer Research and Development Center, the Army Research Institute, the Army Training and Doctrine Command Analysis Center, PEO-STRI, and other Army agencies.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
FY07 - Completed study of Airborne Command and Control and common operating picture capabilities. This led to significant improvements in understanding the effects of Unmanned Aerial Vehicles (UAV) operating in the C4ISR network.	1127		
The SIMTECH Council of Colonels determined that the FY08 task focus is on Airspace Management.		1465	
The SIMTECH Council of Colonels determined that the FY09 task focus is on Battle Command sustainment capabilities.			1546
Small Business Innovative Research/Small Business Technology Transfer Program		43	
Total	1127	1508	1546

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE					
6 - Management support		0605801A - Programwide Activities					
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
Total Program Element (PE) Cost	70598	73256	73748	69087	60705	70017	71372
F06 The Futures Center	7						
M02 MED CMD SPT (NON-AMHA)	26067	24150	24803	17671	10863	10867	10823
M15 ARI MGMT/ADM ACT	2147	1928	1812	1962	1932	5502	5608
M16 STANDARDIZATION GROUPS	4722	4854	5006	5123	5233	5348	5467
M42 ARDEC CMD/CTR Support	6085	5764	6132	6784	7002	9047	9213
M44 CECOM CMD/CTR SPT	3888	3987	4222	4835	4878	8576	8901
M46 AMCOM CMD/CTR SPT	5585	9136	7690	7763	7916	4119	4237
M47 TACOM CMD/CTR SPT	2772	2875	2999	3319	3274	6605	6770
M53 Developmental Test Command/Ctr Spt	11171	11406	11664	11535	9358	9564	9768
M55 Edgewood Chemical Biological Center (ECBC)	4862	5612	5876	6379	6480	3883	3936
M58 SSCOM CMD/CTR SPT	2045	2231	2195	2341	2368	5075	5188
M76 Armament Group Support	1247	1313	1349	1375	1401	1431	1461

A. Mission Description and Budget Item Justification: This program funds the continued operation of non-Army Management Headquarters Activities (AMHA) management and administrative functions at U.S. Army Research, Development and Standardization Groups overseas, Army Research, Development, Test, and Evaluation (RDTE) commands, centers and activities required to accomplish overall assigned general research and development missions and international research and development not directly related to specific research and development projects. The Standardization Groups play an integral role in the U.S. Army efforts for international cooperative research, development and interoperability, and fulfill international memoranda of understanding requirements (especially the American, British, Canadian and Australian Armies' Standardization Programs). Starting in FY06, the bulk of funding for The Futures Center transfers to the Operation and Maintenance appropriation

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE
6 - Management support	0605801A - Programwide Activities

<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	71418	73718	73596
Current BES/President's Budget (FY 2009)	70598	73256	73748
Total Adjustments	-820	-462	152
Congressional Program Reductions		-462	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	-52		
SBIR/STTR Transfer	-768		
Adjustments to Budget Years			152

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605801A - Programwide Activities					PROJECT M02	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
M02 MED CMD SPT (NON-AMHA)	26067	24150	24803	17671	10863	10867	10823	

A. Mission Description and Budget Item Justification: This project provides funding for headquarters (HQ) activities that support the Medical Research, Development, Test, and Evaluation (RDTE) Program at the U.S. Army Medical Research and Materiel Command (USAMRMC), Fort Detrick, Maryland to: (1) perform planning, programming, and budgeting, (2) manage resources, and (3) ensure compliance with U.S. Food and Drug Administration (FDA), and other regulatory and safety requirements supporting Special Immunization Program (SIP); providing protection for workers at risk of exposure to highly hazardous pathogenic microorganisms or toxins. It also provides for continued operations of contracting and acquisition management functions performed by the U.S. Army Medical Research Acquisition Activity (USAMRAA) in support of the USAMRMC Medical RDTE Program.

Additionally, the USAMRMC is implementing the Medical Research Information Technology System (MeRITS), an electronic data and document-handling system needed to standardize animal and human clinical trial documentation, and centralize storage and access of the same between the Headquarters and its five subordinate laboratories. MeRITS is an integral part of an overall USAMRMC effort to enhance its laboratories performance, efficiency, and accountability. MeRITS FY 2007-2009 expenses include purchase of commercially off-the-shelf (COTS) software and equipment and significant non-recurring contractor costs necessary to tailor the COTS software to meet USAMRMC requirements.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
MeRITS: In FY07, configured and tested COTS software for document management and capture module for experimental data, and designed the capability for reporting serious adverse events that occur during human clinical trials. In FY08, build data management, biostatistics and medical coding capability, and continue integrating systems and process components at fielded laboratories. In FY09, will continue fielding systems to achieve coverage of clinical trials for which the Army Surgeon General is the product sponsor, and implement software upgrades, including a capability to electronically submit applications to the FDA for consideration of product licensure.	8880	7784	8083
Civilian Authorized Salaries and Special Immunization Program (SIP): In FY07, FY08, and FY09, funds authorized civilian salaries assigned to HQ, USAMRMC and USAMRAA. Also, provides regulatory, clinical monitoring and data support for SIP. This program provides non-licensed vaccines and other biological products under FDA oversight to personnel at risk of exposure to selected infectious diseases; and partially funds other USAMRMC operational costs (e.g., supplies, equipment, and services) that support Medical RDTE.	17187	16001	16720
Small Business Innovative Research/Small Business Technology Transfer Programs		365	
Total	26067	24150	24803

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605801A - Programwide Activities					PROJECT M15	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
M15 ARI MGMT/ADM ACT	2147	1928	1812	1962	1932	5502	5608	

A. Mission Description and Budget Item Justification: This project supports the non-Army Management Headquarters Activity (AMHA) management and administrative functions for the U.S. Army Research Institute (ARI) for the Behavioral and Social Sciences to accomplish its mission to conduct the Army's research and development (R&D) in personnel, training, and leader development issues that will ensure the future Army remains ready and relevant. Specifically, this project provides technical and administrative support to the headquarters element and to six field research units and three liaison units to include budget execution, procurement oversight, RDT&E program planning and evaluation, management control, security/safety, logistics, information technology, and personnel/manpower execution and oversight.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Each fiscal year, provides continued operation of management, administrative, personnel, budget, and support functions at a level consistent with Army and mission requirements to meet the needs of ARI as an Army Laboratory conducting the Army's personnel, training, leader development, and organizational performance R&D program.	2147	1927	1812
Small Business Innovative Research/Small Business Technology Transfer Programs		1	
Total	2147	1928	1812

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605801A - Programwide Activities					PROJECT M16	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
M16 STANDARDIZATION GROUPS	4722	4854	5006	5123	5233	5348	5467	

A. Mission Description and Budget Item Justification: Project M16 supports nine International Technology Centers (formerly known as Standardization Groups) (Australia, United Kingdom, Canada, France, Germany, Japan, Chile, Argentina, and Singapore) for personnel, travel and overhead costs, leases on buildings, and mandatory permanent change of station.

The mission of the International Technology Centers is to represent the Army and serve as in-country/region focal point for all international armaments cooperation in their Areas (countries) of responsibility to government agencies, academia, and defense industries.

Accomplishments/Planned Program:	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at the nine International Technology Centers.	4722	4777	5006
Small Business Innovative Research/Small Business Technology Transfer Programs		77	
Total	4722	4854	5006

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605801A - Programwide Activities					PROJECT M42	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
M42 ARDEC CMD/CTR Support	6085	5764	6132	6784	7002	9047	9213	

A. Mission Description and Budget Item Justification: Supports the non-Army Management Headquarters Activity (AMHA) management and administrative functions at the U.S. Army Armament Research, Development and Engineering Center (ARDEC), Picatinny Arsenal, NJ.

NOTE: FY 2008 funding totals do not include \$20 thousand previously requested for current FY 2008 GWOT requirements.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at ARDEC.	6085	5764	6132
Total	6085	5764	6132

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605801A - Programwide Activities					PROJECT M44	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
M44 CECOM CMD/CTR SPT	3888	3987	4222	4835	4878	8576	8901	

A. Mission Description and Budget Item Justification: Supports the non-Army Management Headquarters Activity management and administrative functions at the U.S. Army Communications-Electronics Research Development and Engineering Center (CERDEC), Ft. Monmouth, NJ.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at CERDEC.	3888	3968	4222
Small Business Innovative Research/Small Business Technology Transfer Programs		19	
Total	3888	3987	4222

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605801A - Programwide Activities					PROJECT M46	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
M46 AMCOM CMD/CTR SPT	5585	9136	7690	7763	7916	4119	4237	

A. Mission Description and Budget Item Justification: Supports the non-Army Management Headquarters Activity (AMHA) management and administrative functions at the U.S. Army Aviation and Missile Research And Development Center (AMRDEC), Redstone Arsenal, AL.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at AMRDEC.	5585	8984	7690
Small Business Innovative Research/Small Business Technology Transfer Programs		152	
Total	5585	9136	7690

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605801A - Programwide Activities					PROJECT M47	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
M47 TACOM CMD/CTR SPT	2772	2875	2999	3319	3274	6605	6770	

A. Mission Description and Budget Item Justification: Supports the non-Army Management Headquarters Activity management and administrative functions at the U.S. Army Tank-Automotive Research Development Engineering Center (TARDEC), Warren, MI.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at TARDEC.	2772	2875	2999
Total	2772	2875	2999

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605801A - Programwide Activities					PROJECT M53	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
M53 Developmental Test Command/Ctr Spt	11171	11406	11664	11535	9358	9564	9768	

A. Mission Description and Budget Item Justification: Project M53 funds civilian labor and support costs for the technical direction and administrative functions of the Headquarters, U.S. Army Developmental Test Command (DTC) located at Aberdeen Proving Ground, Maryland, and is required to support accomplishment of assigned developmental test missions not directly related to specific test and evaluation projects. This project includes staff/management functions of resource management, safety, security, environmental, strategic planning and ADPE/information/technology support for command-wide databases in support of the developmental test mission with technical direction of five Major Range and Test Facility Bases (MRTFBs) and test centers: White Sands Test Center (WSTC), New Mexico; Aberdeen Test Center (ATC), Maryland; Dugway Proving Ground, Utah; Electronic Proving Ground (EPG), Arizona; and Yuma Test Center (YTC), Arizona; as well as for Redstone Technical Test Center, Alabama; Aviation Technical Test Center, Alabama; Cold Regions Test Center, Alaska; and Tropic Regions Test Center, Hawaii. This is the operating budget for DTC HQ, which provides technical direction for the annual execution of over 2800 tests, 7447 workyears, and a \$2B institutional plus reimbursable program.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Civilian labor and other support costs for DTC to provide technical direction and administer the assigned Army developmental test mission.	10868	10815	10802
Contract costs required to technically direct and administer the assigned Army developmental test mission; i.e., ADPE/information and technology support for command-wide databases.	256	430	778
Materials, Supplies, and Equipment.	47	64	84
Small Business Innovative Research/Small Business Technology Transfer Programs		97	
Total	11171	11406	11664

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605801A - Programwide Activities					PROJECT M55	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
M55 Edgewood Chemical Biological Center (ECBC)	4862	5612	5876	6379	6480	3883	3936	

A. Mission Description and Budget Item Justification: Supports the non-Army Management Headquarters Activity management and administrative functions at the U.S. Army Edgewood Chemical Biological Center (ECBC), Aberdeen Proving Ground, MD.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at ECBC.	4862	5584	5876
Small Business Innovative Research/Small Business Technology Transfer Programs		28	
Total	4862	5612	5876

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605801A - Programwide Activities					PROJECT M58	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
M58 SSCOM CMD/CTR SPT	2045	2231	2195	2341	2368	5075	5188	

A. Mission Description and Budget Item Justification: Supports the non-Army Management Headquarters Activity management and administrative functions at the Natick Soldier Research, Development and Engineering Center (NSRDEC), Natick, MA.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at NSC.	2045	2229	2195
Small Business Innovative Research/Small Business Technology Transfer Programs		2	
Total	2045	2231	2195

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605801A - Programwide Activities					PROJECT M76	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
M76 Armament Group Support	1247	1313	1349	1375	1401	1431	1461	

A. Mission Description and Budget Item Justification: The goal of this program is to expand worldwide allied standardization and interoperability through cooperative research and development (R&D) and technology sharing per SECDEF guidance and especially in support of the U.S. Army. This program partially funds the travel costs and administrative support (studies, analysis, interpretation, equipment, etc.) required to participate in international fora, such as the North Atlantic Treaty Organization (NATO) Army Armaments Group (NAAG), and to pursue new cooperative R&D initiatives and international cooperative agreements such as memoranda of understanding. This program also includes: the United States' share of costs of the NATO Civil Budget, Chapter IX, which funds the NATO Industrial Advisory Group (NIAG) and the Special Fund for Cooperative Planning (U. S. Army is Executive Agent for this NATO bill); partially funds the Five Power Senior National Representatives, Army [SNR (A)], the Technical Cooperative Program, Bilateral SNR(A)s, and Army armaments working groups with many nations.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Funds support Army subject matter experts to attend scientific and technological exchange, meetings, demonstrations, and/or simulations having military application and mutual benefits to the United States and its Allies.	290	290	300
Fund the United States' share of the NATO Civil Budget, Chapter IX (Defense Support Programs). U. S. Army is Executive Agent for this NATO bill.	957	987	1049
Small Business Innovative Research/Small Business Technology Transfer Programs		36	
Total	1247	1313	1349

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE						
6 - Management support	0605803A - Technical Information Activities						
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
Total Program Element (PE) Cost	51266	42715	42905	42663	43036	38817	39625
720 TECH INFO FUNC ACTV	7945	7752	8114	8194	8256	8441	8631
727 TECH INFO ACTIVITIES	8784	8884	9821	9495	10155	10335	10520
729 YOUTH SCIENCE ACTIV	3134	3030	3157	3204	3250	3304	3359
730 PERS & TRNG ANALYS ACT	1834	1941	2056	2083	2102	2148	2197
731 ARMY HIGH PERFORMANCE COMPUTING CENTERS (AHPCC)	6825	7159	7544	7627	7686	7857	8033
733 ACQUISITION TECH ACT	5593	7967	8453	8247	7732	2791	2855
737 KNOWLEDGE MANAGEMENT FUSION	3196	2385					
739 ARMY HIGH PERFORMANCE COMPUTING INITIATIVES	9442						
C16 FAST	3432	2459	2575	2603	2622	2681	2741
C18 BAST	1081	1138	1185	1210	1233	1260	1289

A. Mission Description and Budget Item Justification: This program supports upgrading the accuracy, timeliness, availability, and accessibility of scientific, technical, and management information at all levels of Army Research and Development (R&D). Management of this information is critical to achieve the goals established by the Army's Senior Leadership for the Current and Future Forces. Use of accurate and timely technical information is essential to successfully meeting the milestones required on the path to the Future Force, allowing Army Science and Technology (S&T) leadership to refine investment strategy and quickly react to emerging opportunities and issues. This program includes initiatives to improve information derivation, storage, access, display, validation, transmission, distribution, and interpretation. This program develops and enhances a single business model for Army science and technology knowledge management information technology. This program addresses the need to increase the competitiveness and availability of scientific, engineering, and technical skills in the DoD and National workforce through outreach programs aimed at high school students through college. By providing direct working experience for these students in Army laboratories, the programs expose these students to the working world of science and engineering. Work funded under this program includes analyses using behavioral science-based analytic tools to provide policy and decision makers with Soldier-oriented recommendations concerning manpower, personnel, and training issues. Funding is provided for Independent Review Team analysis of technology maturity as part of the Technology Area Readiness Assessment as required by DoDI 5000.2 dated May 12, 2003. This program funds studies by the Board on Army Science and Technology (BAST) and the Army Science Board. This program also supports combatant commanders and major Army commands by providing science advisors to address scientific and technical issues and by providing engineering teams to solve field Army technical problems. Coordination of this program with the other Services is achieved through inter-service working groups. The cited work is consistent with the Department of Defense Research and Engineering Strategic Plan, the Army Science and Technology Master Plan, the Army Modernization Strategy, and the Army Posture Statement.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY

PE NUMBER AND TITLE

6 - Management support

0605803A - Technical Information Activities

Work in this program element is performed by the Research, Development, and Engineering Command (RDECOM), the Army Research Institute for the Behavioral and Social Sciences, the Army Corps of Engineers' Engineer Research and Development Center (ERDC), Medical Research and Materiel Command (MRMC), Space and Missile Defense Command (SMDC), and the Information Management Office.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
6 - Management support	0605803A - Technical Information Activities		

<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	47356	41607	43140
Current BES/President's Budget (FY 2009)	51266	42715	42905
Total Adjustments	3910	1108	-235
Congressional Program Reductions		-1292	
Congressional Rescissions			
Congressional Increases		2400	
Reprogrammings	5123		
SBIR/STTR Transfer	-1213		
Adjustments to Budget Years			-235

\$2.5M added in FY08 to FY09 due to development and modernization of Army Science and Technology Enterprise Management system.

One FY08 congressional adds totaling \$2400 were added to this PE.

(\$2400) Knowledge, Tech Sharing Program

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605803A - Technical Information Activities					PROJECT 720	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
720 TECH INFO FUNC ACTV	7945	7752	8114	8194	8256	8441	8631

A. Mission Description and Budget Item Justification: This project provides for technology transfer activities to support acquisition, storage, and utilization of technical information for both military and domestic applications. Effective exploitation of science and technology (S&T) information is critical to achieving the goals established by Senior Army Leadership. Activities include Army support for Federal Laboratory Consortium (FLC) as required by Public Law; the Army Science Board; the Army Science Conference; S&T database management efforts; and administration of the Army's Small Business Innovative Research (SBIR) and Small Business Technology Transfer Program (STTR) in accordance with the Small Business Research and Development Enhancement Act of 1992. Technology transfer activities make technical information available to both the public and private sectors to reduce duplication in Research and Development programs and to increase competitiveness in the US business community. Database management efforts support development of decision aids, databases, and automation support for the management and execution of the Army Research, Development, Test and Evaluation (RDTE) appropriation. In addition, this project provides funding for patent legal expenses and fees for all Research, Development, and Engineering Command (RDECOM) subordinate commands and laboratories, as required by the Omnibus Budget Reconciliation Act. The cited work is consistent with the Director, Defense Research and Engineering Strategic Plan, the Army Modernization Strategy, and the Army Science and Technology Master Plan.

Work is performed by the Army Research Laboratory (ARL).

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Provide Army funding support for Federal Laboratory Consortium as required by Public Law 104-113.	215	209	224
Provide administrative and contractual support for the Army Science Board.	1563	1373	1446
Provide administrative support for the Army's SBIR and STTR programs.	1343	1200	1266
Provide funding for patent fees and patent legal expenses for AMC commands and laboratories.	977	1032	1213
Provide funding for S&T Strategic Planning and Support.	205	194	199
Provide funding for the Army Science Conference.	495	490	536
Administer S&T database computer engineering support contract and support RDECOM databases S&T management support.	3147	3050	3230
Small Business Innovative Research/Small Business Technology Transfer Programs		204	
Total	7945	7752	8114

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605803A - Technical Information Activities					PROJECT 727	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
727 TECH INFO ACTIVITIES	8784	8884	9821	9495	10155	10335	10520

A. Mission Description and Budget Item Justification: This project supports development of decision aids, databases, and automation support for the management and execution of the Army Research, Development, Test, and Evaluation (RDTE) Appropriation. It includes the hardware, software, and contractor support required to develop and implement a set of management decision aids, databases, and hardware/software tools to support technical and budgetary decisions at the Office of the Secretary of Defense (OSD) and Department of the Army (DA), including support of the Army Science and Technology Master Plan. Most of the efforts in this project are on-going activities to support Army Research, Development, and Acquisition programs. Effective exploitation of S&T information is critical to achieving the goals established by Senior Army Leadership for the Future Force. Funding in this program support Independent Review Team analysis of technology maturity as part of Technology Readiness Assessments as required by DoDI 5000.2 dated May 12, 2003. The cited work is consistent with Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, the Defense Basic Research Plan (DBRP), and the Defense Technology Area Plan (DTAP).

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Conduct and support S&T program portfolio assessments and analysis.	2395	1909	2118
Support Army S&T strategic planning, analysis, and prioritization.	2025	3475	4102
Provide funding and support for Army Science and Technology Master Plan development and publication.	1710	955	1104
Provide funding and support for Army Acquisition Program Technology Readiness Assessments for Program Milestone Decisions.	2154	1796	1997
Provide Army support to Director, Defense Research and Engineering Executive Staff for DoD-wide Science and Technology oversight.	500	500	500
Small Business Innovative Research/Small Business Technology Transfer Programs		249	
Total	8784	8884	9821

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605803A - Technical Information Activities					PROJECT 729	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
729 YOUTH SCIENCE ACTIV	3134	3030	3157	3204	3250	3304	3359	

A. Mission Description and Budget Item Justification: This project supports science activities that encourage over 154,000 middle/high school and college youths annually to develop an interest in and pursue higher education and employment in the science, math, and engineering fields. These activities are consolidated within the Army Educational Outreach Program (AEOP) that links and networks appropriate components to derive the best synergies to "present the Army" to a larger pool of technical talent and to provide students with Army unique practical experiences at Army laboratories, centers, and institutes to fill future Army Science and Technology workforce needs. AEOP increases interest and involvement of students and teachers across the nation in science, math, and engineering at all proficiency levels and backgrounds to include under-represented and economically disadvantaged groups by exposure to Army Sponsored research, education, competitions, internships, and practical experiences. The joint Army/Navy Washington regional area Science and Engineering Apprenticeship Program (SEAP) is included in the overall effort. This project enhances the national laboratory science and engineering personnel pool which in turn supports defense industry and Army laboratory needs. The cited work is consistent with Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Defense Technology Area Plan (DTAP). Work is performed by the Research, Development, and Engineering Command (RDECOM), the Army Research Institute for the Behavioral and Social Sciences, the Army Corps of Engineers' Engineer Research and Development Center (ERDC), Medical Research and Materiel Command (MRMC), and Space and Missile Defense Command (SMDC).

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Foster high school student interest nationally in science, mathematics, engineering, and computer science by sponsoring the Junior Science and Humanities Symposium (JSHS), International Mathematics Olympiad (IMO), International Science and Engineering Fair (ISEF), and the Research and Engineering Apprenticeship Program (REAP).	1470	1407	1588
Sponsor joint Army/Navy Washington Regional Area SEAP and increase Army Laboratory/Research, Development, and Engineering Center (RDEC) sponsorship of students.	228	232	247
Conduct the Uninitiated Introduction to Engineering (UNITE) program to increase the numbers of Native Americans, African Americans, and Spanish-speaking Americans attending and completing engineering and/or science curricula at the university level.	201	195	204
Conduct West Point cadet research internship program to enhance cadet training through field experience within Army research labs and centers.	360	236	243
Support Army Educational Outreach Program (AEOP) to enhance Science, Mathematics, and Engineering education through student experiences in Army labs and academic partner institutions.	875	875	875
Small Business Innovative Research/Small Business Technology Transfer Programs		85	
Total	3134	3030	3157

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605803A - Technical Information Activities					PROJECT 730	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
730 PERS & TRNG ANALYS ACT	1834	1941	2056	2083	2102	2148	2197

A. Mission Description and Budget Item Justification: This project provides for the Army's behavioral and social science research-based studies and analyses to address current and near term Soldier, training, and leader development issues. The research provides a unique capability to address a number of issues that affect, directly, or indirectly, Soldier and unit performance and readiness, such as the effects of changes in training on individual and unit performance, the personnel costs of alternative programs and policies and the effects of program changes on retention of quality Soldiers. Requirements for research-based studies and analyses for critical personnel and training issues of immediate importance are solicited on an annual basis from the Training and Doctrine Command (TRADOC), the Assistant Secretary of the Army for Manpower and Reserve Affairs (ASA-M&RA), the Army Deputy Chief of Staff, G-1, and the Human Resources Command (HRC). The cited work is consistent with Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Defense Technology Area Plan (DTAP). Work in this project is managed by the US Army Research Institute (ARI) for the Behavioral and Social Sciences.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Research-based analyses completed in FY07 include: assessing the initial implementation of the Basic Officer Leadership Course (BOLC) II at Forts Benning and Sill; completing an evaluation of the new Basic Combat Training (BCT) program of instruction in terms of how well it prepares Soldiers to arrive at their first unit with the combat skills they may need immediately; assessing the current incentives used by the Army and the effects on personnel retention. The FY08 program includes: analyzing variables that influence senior non-commissioned officers (NCO) motivation to retire or continue service at the 20-year mark; assessing the impact of adding an additional week to Basic Combat Training; examining training and testing procedures of the NCO education system. The FY09 program will be based on issues identified by TRADOC, ASA-M&RA, the Army Deputy Chief of Staff, G-1, and the HRC.	1834	1896	2056
Small Business Innovative Research/Small Business Technology Transfer Programs		45	
Total	1834	1941	2056

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605803A - Technical Information Activities					PROJECT 731	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
731 ARMY HIGH PERFORMANCE COMPUTING CENTERS (AHPCC)	6825	7159	7544	7627	7686	7857	8033

A. Mission Description and Budget Item Justification: This project directly supports Future Force requirements by providing high fidelity modeling, simulation, and analysis of materials, systems, and operational constructs to be employed within the Future Force. The project supports collaborative efforts to advance computational science and its application to critical Army technologies. The Centers work with researchers at Army laboratories to explore new algorithms in the computational sciences to address critical technology issues in numerous and diverse computational research areas. The Centers also sustain high performance computing environments and educational outreach as an integral part of their mission. The cited work is consistent with Army Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Defense Technology Area Plan (DTAP). Work is performed by the Army Research Laboratory (ARL).

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Sustain the high performance computing environment and infrastructure in support of the US Army Tank and Automotive Research Development and Engineering Center (TARDEC).	3428	2205	2290
Sustain the high performance computing environment and infrastructure in support of the Army High Performance Computing Research Center's (AHPCRC) research, education, and outreach activities.	1215	1221	1296
Sustain the high performance computing environment and infrastructure in support of the US Army Research Laboratory's Major Shared Research Center (MSRC).	2182	3627	3958
Small Business Innovative Research/Small Business Technology Transfer Programs		106	
Total	6825	7159	7544

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605803A - Technical Information Activities					PROJECT 733	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
733 ACQUISITION TECH ACT	5593	7967	8453	8247	7732	2791	2855

A. Mission Description and Budget Item Justification: This project improves the Army's acquisition process by applying decision support and expert information systems, and by supporting analysis and evaluation of alternative acquisition strategies using techniques such as value-added analysis and analysis-of-alternatives. This project provides the environment for the analysis and evaluation of new information technologies, concepts, and applications for integrated management activities and support dynamic Army acquisition technology requirements. This program supports analysis efforts to conduct critical analyses for Army leadership in support of Army Transformation. These analyses are used by leadership in making acquisition, procurement, and logistics decisions in order to provide quality equipment and procedures to the Soldiers. The cited work is consistent with Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Defense Technology Area Plan (DTAP). Work in this program element is performed by the Army Acquisition Support Center.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Distribute and beta test application programs and user interface utilities for executive level information systems that offer Standard Query Language services to Army Acquisition Corps corporate and global databases. Analyze acquisition program financial programming and budgeting requirements. Continue development of Weapon Systems Handbook, long-range planning and policy analysis, resource allocation analysis, cost tracking, and analysis.	4685	6830	7503
Conduct analysis and evaluation of new information technologies, concepts, and applications of integrated management activities to meet the dynamic Army acquisition technology requirements.	908	914	950
Small Business Innovative Research/Small Business Technology Transfer Programs		223	
Total	5593	7967	8453

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605803A - Technical Information Activities					PROJECT C16	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
C16 FAST	3432	2459	2575	2603	2622	2681	2741	

A. Mission Description and Budget Item Justification: The Field Assistance in Science and Technology (FAST) program focuses Army Materiel Command (AMC) resources to rapidly identify and solve Army field technical problems that enable the improvement of readiness, safety, training, and reduce operations and support (O&S) costs. FAST tours of duty provide significant professional growth opportunities for the Army's scientists and engineers. Science advisers are recruited from AMC headquarters and all AMC Major Subordinate Commands (MSCs) to serve combatant commands and major commands worldwide. The FAST activity is also supported by assigned Quick Reaction Coordinators (QRCs) within each engineering center. All costs associated with science advisor assignments are funded by AMC or the AMC MSCs that supply the science advisers for two to three year tours. The FAST program recoups many times its cost in O&S (cost) savings. FAST also provides emerging technology demonstration opportunities to the Research, Development, and Engineering Command's (RDECOM) engineering centers and DARPA and executes biannual Technology Applications Conferences (TAC) on a rotating basis between FORSCOM, USAREUR, and USFK/Eighth Army. FAST also maintains close coordination with the Navy Science Advisor Program (Naval Fleet Forces Technology Integration Office). The cited work is consistent with Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Defense Technology Area Plan (DTAP). Work in this project is performed by the US Army Materiel Command.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Respond to combatant commanders worldwide with technological solutions to urgent materiel problems they identify; deploy science advisors with US Task Forces in support of combatant commanders; execute biannual Technology Applications Conference.	3432	2401	2575
Small Business Innovative Research/Small Business Technology Transfer Programs		58	
Total	3432	2459	2575

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605803A - Technical Information Activities					PROJECT C18	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
C18 BAST	1081	1138	1185	1210	1233	1260	1289	

A. Mission Description and Budget Item Justification: This project funds Army efforts by the National Research Council's (NRC) Board on Army Science and Technology (BAST). The BAST provides an independent, objective, and credible source of external advice to the Army. It serves as a convening authority for the discussion of science and technology issues of importance to the Army and oversees independent Army-related studies conducted by the National Academies. Working in close coordination with the Army, the BAST helps define problems, brings together experts to study these problems and provides recommendations. Committees are assembled in accordance with established NRC procedures and BAST studies often continue longer than 12 months. The cited work is consistent with Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Defense Technology Area Plan (DTAP). Work in this project is performed extramurally by the Army Research Laboratory (ARL).

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Provide studies and conducts periodic meetings to help identify, assess, and recommend emerging opportunities in science and technology fields applicable to the US Army. Primary study topic for FY06 was the Network Sciences Study. Topics for FY07, FY08, and FY09 will be selected according to Army S&T strategy and senior leader initiatives.	1081	1107	1185
Small Business Innovative Research/Small Business Technology Transfer Programs		31	
Total	1081	1138	1185

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE					
6 - Management support		0605805A - Munitions Standardization, Effectiveness and Safety					
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
Total Program Element (PE) Cost	36145	40947	20857	21146	22023	23078	23599
296 PYROTECHNIC RELIABILITY & SAFETY	877	1111	1141	1184	1191	1291	1491
297 Mun Survivability & Log	4894	5012	5857	5863	5653	5522	5601
857 DOD EXPLOSIVES SAFETY STANDARDS	1480	1578	1648	1691	1932	2269	2310
858 ARMY EXPLOSIVES SAFETY MANAGEMENT PROGRAM	431	398	464	476	489	500	511
859 LIFE CYCLE PILOT PROCESS	18750	22745	3745	3800	3953	4019	4076
862 FUZE TECHNOLOGY INTEGRATION	1997	2125	2181	2225	2269	2313	2354
F21 NATO SMALL ARMS EVAL	981	1000	1019	1041	1052	1049	1049
F24 CONVENTION AMMO DEMIL	6735	6978	4802	4866	5484	6115	6207

A. Mission Description and Budget Item Justification: This Program Element supports continuing technology investigations. It provides a coordinated tri-service mechanism for the collection and free exchange of technical data on the performance and effectiveness of all non-nuclear conventional munitions and weapons systems in a realistic operational environment. It provides for NATO interchangeability testing (F21); Joint munition effectiveness manuals used by all services; development of standardization agreements (STANAGS) and associated Manuals of Proof and Inspection (MOPI); operation of the North American Regional Test Center (NARTC); evaluation of demilitarization methods for existing conventional ammunition (F24); evaluation of useful shelf life, safety, reliability and producibility of pyrotechnic munitions; and improvement of explosives safety criteria for DOD munitions via the DOD Explosives Safety Board (857). Pyrotechnic Reliability and Safety (296) supports pyrotechnic research, development and testing to identify, characterize and resolve reliability, safety, storage and manufacturing issues that impact production availability and field use of pyrotechnics. Project 296 will result in the development and demonstration of new, safe, reliable and environmentally acceptable munitions. Munitions Survivability and Logistics (297) will make Army units more survivable by applying technologies to reduce the sensitivity of munitions to unplanned stimuli (e.g. bullet impacts, fragment impacts, fast cook off, slow cook off, sympathetic detonation, shaped charge jets) and by testing and demonstrating munitions logistics system solutions that prevent or minimize catastrophic explosive events and accelerate ammunition resupply. Project 297 also supports the Army Insensitive Munitions (IM) Board's reviews. The Army Explosives Safety Management Program (858) was established in FY01. The U.S. Army Technical Center for Explosives Safety uses the funds in this project to evaluate current explosives safety standards and develop new, scientific and risk-based standards to meet U. S. Army explosives requirements. The Life Cycle Pilot Program (LCPP) (859) will assess production base capabilities and needs over the acquisition life cycle of various munitions and will address the producibility of ammunition including the transition to type classification and production, and the ability of the production base to cost effectively produce quality products on schedule. The Fuze Technology Integration program (862) will improve performance and lower the costs of existing proximity fuzes and enable new applications in submunitions and medium caliber fuzes, addressing advanced proximity fuze sensor technology, Micro-electromechanical Systems (MEMS), Safety and Arming (S&A) technology, and Electronic S&A (ESA) technology for smart munitions.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
6 - Management support	0605805A - Munitions Standardization, Effectiveness and Safety		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	36914	19606	20992
Current BES/President's Budget (FY 2009)	36145	40947	20857
Total Adjustments	-769	21341	-135
Congressional Program Reductions		-259	
Congressional Rescissions			
Congressional Increases		21600	
Reprogrammings	271		
SBIR/STTR Transfer	-1040		
Adjustments to Budget Years			-135

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605805A - Munitions Standardization, Effectiveness and Safety					PROJECT 296	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
296 PYROTECHNIC RELIABILITY & SAFETY	877	1111	1141	1184	1191	1291	1491	

A. Mission Description and Budget Item Justification: This project will support pyrotechnic research, development and testing to identify, characterize and resolve reliability, safety, storage and manufacturing issues that impact production availability and field use of pyrotechnics, including training realism. Project will result in the development and demonstration of new, safe, reliable and environmentally acceptable munitions.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Mitigation of Perchlorates	294	360	
Service Life Studies	131		
Heavy Metal in Green Illuninants	307	295	175
Fragmentation Studies	145	155	
Nanoparticles for Pyro Items		270	380
Safer, More stable items			280
Multifunction Pyro Simulators			306
Small Business Innovative Research/Small Business Technology Transfer Programs		31	
Total	877	1111	1141

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605805A - Munitions Standardization, Effectiveness and Safety						PROJECT 297
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
297 Mun Survivability & Log	4894	5012	5857	5863	5653	5522	5601

A. Mission Description and Budget Item Justification: This project supports the Army Transformation by making Army units more survivable through the investigation, testing and demonstration of munitions logistics system improvements that prevent or minimize catastrophic explosive events and accelerate ammunition resupply. Key thrusts are munitions storage area survivability, insensitive munitions (IM) technology integration and compliance, weapon system rearm, munitions configured load enablers and advanced packaging and distribution system enhancements. Within each thrust, a broad array of solutions will be identified, tested, and evaluated against developed system measures of effectiveness. Optimum, cost effective solutions that enable the rapid projection of lethal and survivable forces will be demonstrated. The early stages of force deployment are especially critical. Theater ammunition storage areas are vulnerable and present the enemy with lucrative targets. These areas and distribution nodes contain the only available munitions stocks in theater. Loss of these munitions could cripple the force, jeopardize the mission, and result in high loss of life. This project mitigates vulnerabilities and ensures a survivable fighting force.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Developed scoring patterns and techniques for cylindrical and rectangular metal munitions packaging that will create a venting system during propellant burning to reduce internal pressures and minimize explosive reactions.	345		
Demonstrated a less sensitive high-performance, melt-castable explosive to replace Composition B explosive in mortars and other warheads for reduced sensitivity to unplanned stimuli.	500		
Demonstrate new IM explosives formulated from new less sensitive basic explosive ingredients and binders to meet the most difficult threats (sympathetic detonation and shaped charge jet impact).		1334	1800
Conduct reviews of munitions in development and production to determine if they meet a DoD 5000.1 requirement to withstand unplanned stimuli, manage technology integration efforts to meet the requirement, develop improved IM test capability, update and maintain IM compliance status database, the IM waiver process for the Army, and the PEO Ammunition IM Strategic Plan.	788	1165	1238
Developed and demonstrated standard test equipment and procedures to evaluate and down-select IM explosive candidates based on sensitivity to bullet and fragment impacts and sympathetic detonation. This will ensure that generic Fragment Impact, Bullet Impact, Sympathetic Detonation, and Cook-off tests standardize rankings for new candidate IM explosives in a way consistent with their application in actual munitions.	556		
Reduced the sensitivity of Comp B explosive by modifying the formulation with a new wax binder. Successful implementation of this program will provide incremental IM improvements for large High Explosive filled munitions and achieve significant cost savings by using the Comp B for the ammunition stockpile.	297		
Demonstrate a new generation of IM booster material for a new family of IM explosives which cannot be initiated with a currently available booster.	376	570	800
Evaluate powder coating alternatives for painting ammunition/munitions containers to reduce hazardous waste and eliminate costly	253		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
6 - Management support	0605805A - Munitions Standardization, Effectiveness and Safety	297	
Volatile Organic Chemical (VOC) management associated with paints while insuring NBC survivability.			
Evaluated and developed recommendations for alternative materials and methods for strapping ammunition loads to pallets at load plants, depots, contractor facilities and in field operations.	64		
Investigate alternatives to both natural and processed wood ammunition packaging pallets and boxes that provide a cost effective, environmentally and phyto-sanitary compliant packing and unitization option.	109	100	
Design and demonstrate a tank ammunition container sized to be compatible with the Joint Modular Intermodal Container (JMIC) footprint in order to demonstrate rapid and seamless delivery of tank ammunition configured loads to the warfighter.	88	90	
Investigate and test alternative methods (blankets, coatings, dunnage) to achieve reductions in solar loading on ammunition packaging.			110
Investigate and evaluate commercially available and modified resealable barrier bags that will reduce life-cycle costs for many demolition items that undergo repacking multiple times during their expected shelf life.			100
Investigate and test alternative consolidation methods for small 60/81/120mm mortar and other similar systems. This will potentially eliminate packaging layers and cost, and enhance accessibility.			100
Investigate, develop, and test combination structures of various materials to lighten and enhance performance of munitions packaging. Insert molding, adhesive bonding, composite fabrication techniques will all be leveraged. Applicable to all ammunition items.			190
Evaluate alternatives to Polyethylene-laminated (PolyLam) paper material which is used in the construction of fiber container inserts in ammunition packaging. Identification of alternative materials will help to reduce fiber insert costs and ensure availability of inserts for ammunition production.		90	
Develop an injection blow molded container for training ammunition that is less expensive and more weather resistant than current fiberboard packaging.		198	
Demonstrate standard sized inter-modal shipping modules for ammunition. The modules will interlock with each other, top to bottom, and cargo platforms to form a stable, palletized, mixed-supply class configured load. They are automation friendly and rapidly re-configurable to meet changing user needs.	1518	500	519
Upgrade the ammunition Configured Load Building Tool to be able to operate it as a web based application. This would facilitate ease of use, reduce setup time for new users, and increase speed and efficiency in building configured ammunition loads for unit deployments.		250	150
Increase ammunition logistics system responsiveness by demonstrating Information Technology enhancements and identifying changes in ammunition business practices needed to improve accountability from the depot to the tactical user in the field.		175	50
Develop Munitions Survivability Software (MSS) improvements to include incorporating a government off the shelf mapping capability that will facilitate field use of this explosives safety storage planning software tool.		250	300
Design and develop an International Standards Organization-container based capability to retrograde ammo returned from deployed combat units. The system will include the capability to inspect, reconfigure and recertify ammunition for Future Combat System in ready to fire configuration at the weapon systems.		150	500
Small Business Innovative Research/Small Business Technology Transfer Programs		140	
Total	4894	5012	5857

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605805A - Munitions Standardization, Effectiveness and Safety					PROJECT 857	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
857 DOD EXPLOSIVES SAFETY STANDARDS	1480	1578	1648	1691	1932	2269	2310

A. Mission Description and Budget Item Justification: This program supports the Research, Development, Test, and Evaluation efforts of the DoD Explosive Safety Standards Board. It supports explosive safety effects research and testing to quantify hazards and to develop techniques to mitigate those hazards in all DoD manufacturing, testing, transportation, maintenance, storage, disposal of ammunition and explosives operations, and also to develop risk based explosives safety standards. Results are essential to the development and improvement of quantity-distance standards, hazard classification procedures, cost effective explosion-resistant facility design procedures, and personnel hazard/protection criteria.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Develop improved tri-service design procedures and improved computer codes for explosion-resistant structures. Initiate preparation of revised tri-service manual TM-51300.	255	279	314
Collect and analyze airblast/fragment/thermal data for revising DoD, NATO hazard classification.	234	245	246
Develop improved explosives and munitions tests and characterization data. Specifically, develop improved gap tests for rocket motors.	312	275	330
Develop improved DoD and NATO explosives safety guidelines for munitions storage, explosives and field operation facilities. Prepared revised Dod 6055.9-STD and 4145.26M.	215	252	223
Conduct other hazards analyses and expand/automate explosives safety databases. Develop improved Explosives Safety Mishap Analysis Module with links to accident reports.	258	275	261
Develop and improve risk based analysis tools for explosives safety. Develop sequence of operations prototype.	206	208	274
Small Business Innovative Research/Small Business Technology Transfer Programs		44	
Total	1480	1578	1648

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605805A - Munitions Standardization, Effectiveness and Safety					PROJECT 859	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
859 LIFE CYCLE PILOT PROCESS	18750	22745	3745	3800	3953	4019	4076	

A. Mission Description and Budget Item Justification: This project supports the implementation of the Single Manager for Conventional Ammunition (SMCA) Industrial Base Strategic Plan through technology investigations, model based process controls, pilot prototyping, and industrial assessments. It will assess life cycle production capabilities required for all ammunition families, address design for manufacturability to facilitate economical production, identify industrial and technology requirements, and address the ability of the production base to rapidly and cost effectively produce quality products. Cost Reduction is an important part of the Life Cycle Pilot Process (LCPP). LCPP provides the resources to prototype critical technologies and develop the knowledge base to establish cost-effective, environmentally safe and modern production processes in support of the Munitions Industrial Base transformation.

Accomplishments/Planned Program:	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Continue ongoing technology investigations. Developed concept designs and plans to transfer life cycle pilot process technology into the supplier base.	1441	1476	1543
Performed numerous production base readiness assessments to analyze present capabilities and identify trends in munitions and industrial technology. Identified over 700 single points of failure in the supplier base and began assessment of mitigation plans.	882	727	762
Develop "pilot" prototype processes for critical ammunition end items and components necessary to establish quality, affordable, and environmentally safe production.	2041	1374	1440
Established framework and operations for the NJ Nanotechnology and Micro-Electromechanical Systems (MEMS) Consortium in support of ammunition production modernization.	3888		
Continued development a new x-ray inspection system for munitions using a Cadmium Zinc Telluride (CZT) detector for automated munitions inspections and surveillance. Increased processing knowledge of CZT detector material.	972		
Continued development of processes to eliminate safety concerns and achieve net-shape manufacturing of advanced cluster energetic materials by developing novel coating and handling processes to support Insensitive Munitions (IM) explosive fill and transfer those processes to the supplier base. Developed advanced coating technology and began transfer of process technology to the explosive manufacturing Industrial Base.	3888	4826	
Establish commercial partnership with ARDEC's Center for Manufacturing Science for the prototyping process and capturing production knowledge in the arena of forged and drawn metal parts. Established framework for integrated data environment for sharing of manufacturing science.	1944	2317	
Investigated pilot processes for Single Point Failure mitigation and performed technology assessments in support of pilot scale prototyping of critical energetic ingredients and components for munition items.	2722		
Establish a focal point with the Defense Materials Technology Center to investigate innovative technology to support the needs of the munitions industrial base in metals manufacture.	972	1930	

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
6 - Management support	0605805A - Munitions Standardization, Effectiveness and Safety	859	
Establish a focal point for polymer technology to investigate innovative polymer based components and manufacturing processes related to polymer based components for munition applications.		965	
Develop a pilot scale process for production of atomized magnesium within the National Technology and Industrial Base (NTIB).		965	
Develop and transition flexible manufacturing and inspection processes for thermal batteries used in munition items.		2799	
Develop technology for the sensing of depleted uranium munitions residues and investigate technologies for their management and removal.		4730	
Small Business Innovative Research / Small Business Technology Transfer Programs		636	
Total	18750	22745	3745

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605805A - Munitions Standardization, Effectiveness and Safety					PROJECT 862	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
862 FUZE TECHNOLOGY INTEGRATION	1997	2125	2181	2225	2269	2313	2354

A. Mission Description and Budget Item Justification: This program investigates maturing technologies and seeks potential candidates for integration on current fuzing and safe and arm devices. This program will implement these technologies into fuzing systems to preclude obsolescence and enhance performance of existing munitions. The program addresses two major areas: (1) risk mitigation and (2) block upgrades. The first area is risk mitigation, which will evaluate a second source Monolithic Microwave Integrated Circuit (MMIC) for artillery and mortar fuzes and a second source high G survivable tuning crystal for mortar fuzes. Risk mitigation efforts will evaluate and demonstrate second sources for fuzing systems that may reduce cost by providing competition, and maintain production when sources or parts are no longer available. It will also allow for the performance enhancement of current ammunition items by conducting aging studies of major fuze components to detect and identify latent defects. The second major area is block upgrades, which will evaluate and perform studies on improvements to the Bunker Defeat Munition (BDM) impact sensor; increase commonality of fuze components and requirements across all hand grenade programs; determine feasibility of common training fuze for 60, 81, and 120mm mortar rounds; determine feasibility of common mortar safe and arm device components for M734A1, M783 Fuzes; improve M759 fuze sensitivity of 30 mm munition . Block upgrades will enable the introduction of the latest technologies into fuzing, keep the fuzing design current to avoid obsolescence issues, and add capabilities.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Risk Mitigation: Successfully developed a second source for the signal processor on the M734 A1 fuze for mortars. Successfully demonstrated a 2nd environment sensor for mortar fuzing using optics for 81 mm, ferrous/ non-ferrous mortar tubes, and provided the design to PM CAS. Evaluating storage reliability of current artillery batteries for the Multi Option Fuze for Artillery (MOFA) fuze/determine possible solutions to battery electrolyte storage instabilities and upgrade a battery spin-airgun. Evaluating improvements to stockpiled training and war reserve fuzes to enhance capabilities and/or address deficiencies. Evaluating, new second source for Monolithic Microwave Integrated Circuits (MMICs) used in artillery and mortar fuzes, evaluate new battery and electronics sources for current inventory fuzes. Evaluate second source for electronic safe and arm device (ESAD) components. Perform study to evaluate potential 2nd source for high _g survivable tuning fork crystals for electronic time fuzes for mortars and artillery.	700	418	650
Block Upgrades: Lab and Field tests performed for Bunker defeat Munition (BDM) impact sensor signature collection. Target impact signature data collected. Fabricated fuze electronics and conducted a ballistic test of prototype BDM Fuze. Investigate drop in proximity upgrades for current airburst fuzing for mortar, artillery and other munitions. Evaluate proximity sensor upgrades for M734A1. Determining feasibility of a common training fuze for 60, 81, and 120mm mortar rounds. Prototyping a mortar common Safe and arm device for M734A1 and M783 rounds. Performing a study on commonality of fuze components and requirements across all hand grenades (M67, M84, and M18). Enhanced the M762A1/M767 Application Specific Integrated Circuit (ASIC), by improving manufacturability and functionality. Enhancing Turbine Alternator (T/A) on the M734A1/M783 mortar fuze to survive high _g gun launch environments.	1297	1648	1531
Small Business Innovative Research/Small Business Technology Transfer Programs		59	
Total	1997	2125	2181

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BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605805A - Munitions Standardization, Effectiveness and Safety					PROJECT F21	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
F21 NATO SMALL ARMS EVAL	981	1000	1019	1041	1052	1049	1049	

A. Mission Description and Budget Item Justification: This program assures complete interchangeability of small caliber and automated cannon-caliber ammunition and weapons among all NATO countries with all of the associated logistic, strategic and tactical advantages. Project involves development, maintenance and testing compliance of NATO standardization agreements (STANAGS) and staffing of the NATO North American Regional Test Center (NARTC).

FY 2009 funds maintain the NARTC and support NATO qualification/production testing of select ammunition types produced by LCAAP and second source manufacturers. Funds will continue to support the development of a STANAG and Manual of Proof and Inspection for 40mm Low Velocity Grenade ammunition and the NATO qualification of US 30mm x 137mm and 40mm High Velocity Grenade Ammunition. In addition, this funding will be used to support activities aimed at improvements for NATO cartridges, reducing ammunition costs while benefiting NATO interoperability and identifying new manufacturing technologies that can be shared with NATO participating manufacturers.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
40mm High/Low Velocity Standardization	40	45	50
30mm Assessment Team	20	20	20
Maintain standardization of Qualified designs	100	100	100
New Ammo Design Qualification & NATO Nominated Weapon Evaluation	130	125	121
NARTC Equipment Purchases	60	80	95
Staff, Equip, Maintain NARTC	130	130	140
Aeroballistic Study of M856	143	80	50
Design & Refine Models	75	75	95
Optimize Manufacturing Process306	283	317	348
Small Business Innovative Research/Small Business Technology Transfer Programs		28	
Total	981	1000	1019

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BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605805A - Munitions Standardization, Effectiveness and Safety					PROJECT F24	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
F24 CONVENTION AMMO DEMIL	6735	6978	4802	4866	5484	6115	6207

A. Mission Description and Budget Item Justification: Under the leadership and oversight of the Product Manager for Demilitarization, this project supports a continuing technology evaluation of demilitarization methods for all types of conventional ammunition in development, production, and storage, as well as conventional ammunition recovered from formerly used defense sites (FUDES). Project F24 will complete the development and demonstration of new, safe, and environmentally acceptable alternatives to open burning/open detonation (OB/OD), including recovery/recycle/reclamation equipment, and processes to reduce the extremely large stockpile of munitions in the resource recovery disposition account and munitions recovered from FUDES.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Prove-out testing of prototype plasma arc technology for conventional ammunition and resource recovery potential continued in FY07. Prove-out testing will be completed in FY08 and Demonstration/Validation tests will be completed in FY09.	1410	1714	469
Installation of re-designed equipment was completed for the cryofracture demilitarization process for anti-personnel landmines and other munitions in FY 07. Prove-out testing was initiated. Demonstration/Validation tests will be completed in FY08.	1231	500	
Development of integrated cryofracture/plasma arc technology on a mobile platform continued in FY07. Detailed design was completed. Equipment procurement will be conducted in FY08 along with sub-system testing. System assembly and installation will begin in FY09.	150	150	200
Development of recycle/reuse technology for magnesium continued. Equipment procurement for the prototype process was nearly completed in FY07. Equipment installation, prove-out testing and demonstration /validation will be conducted in FY 08 and FY09.	1380	1335	500
Develop, install and prove out of transportable alternative materials recovery capabilities for various energetic components. Technical supervision and support of the MPTS project continued and will be conducted through FY09.	144	184	184
Multi-based propellant recovery technology application. Pilot plant efforts will be conducted through FY09.			1307
Development of advanced resource recovery/reuse technology for explosives. Focus on Ultrasonic Removal technology development continued and will optimize pilot plant operations in FY08. In FY09, design of a prototype facility will be initiated.	20	500	1000
Development of Technology for Demilitarization of insensitive munitions will begin in FY09.			900
Implementation of advanced cutting technology will begin in FY09.			242
The purpose of this Congressional Add is to support recovery of critically needed propellant ingredients from obsolete and/or waste gun propellant formulations.	2400	2400	
Small Business Innovative Research / Small Business Technology Transfer Programs		195	
Total	6735	6978	4802

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BUDGET ACTIVITY		PE NUMBER AND TITLE					
6 - Management support		0605857A - Environmental Quality Technology Mgmt Support					
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
Total Program Element (PE) Cost	4279	4926	5125	5238	5133	5178	5295
031 Environmentally Sustainable Acquisition/Logistics	3165	3405	3634	3710	3784	3869	3956
06H UNEXPLODED ORDNANCE CLEARANCE TECHNOLOGY SUPPORT	1114	1171	1218	1250	1281	1309	1339
06I POLLUTION PREVENTION TECH SUPPORT		350	273	278	68		

A. Mission Description and Budget Item Justification: This program resources environmental quality technology (EQT) related management support functions including support of RDT&E required for EQT technical integration efforts at demonstration/validation test sites, technical information and activities, test facilities and general test instrumentation, and EQT requirement assessments. Funds required to support the management of technology transfer associated with technology demonstrated or validated as part of Army EQT projects are included in this program element. In addition, support to the Army weapon system acquisition community to address generic pollution prevention related requirements are included under the Environmentally Sustainable Acquisition/Logistics Program.

The Environmentally Sustainable Acquisition/Logistics Project includes the program management for developing acquisition strategies that both achieve system key performance parameters and sustain the environment without permanent and unacceptable change in the natural environment or human health from system concept refinement to disposal. It includes systematic consideration of environmental impacts, energy use, natural resource, installation impacts, economics, and quality of life. It provides support to the system acquisition community; e.g., program and project managers, to integrate environmental quality analyses into system acquisition process. The goal is to resolve environmental quality issues related to weapon systems that are identified during design, development, testing, operation, or support to reduce Army environmental liabilities and total ownership cost and includes the following: efforts to eliminate the use of hazardous and ozone-depleting materials from weapon systems and facilities, and helping to ensure the availability of Halon 1301 to support weapon system fire suppression requirements through the year 2020.

The Unexploded Ordnance Detection and Clearance project will, beginning in FY 2004, be overseen by the Army. The project has been overseen by office of the Secretary of Defense in prior years. This project funds the Joint Unexploded Ordnance Coordination Office (JUXOCO) of the Unexploded Ordnance Center of Excellence (UXOCOE) to provide oversight in coordinating requirements and technologies in detection and clearance of unexploded ordnance (UXO) and related ordnance issues within Department of Defense (DoD).

The Pollution Prevention Technology Support project will provide management support for the demonstration and validation of reformulated surface coating materials for weapon systems production and maintenance operations. These materials will increase operational sustainment and warfighter training capabilities by reducing soldier health risks, environmental impacts and compliance enforcement actions against installations while increasing coatings performance and standardization across the Army. This project manages research, development, test and evaluation (RDTE) activities under projects 0603779A, Environmental Quality Technology Dem/Val (E21), and 0603804A, Logistics and Engineer Equipment Adv Dev (K42), which together serve to transition advanced technologies developed under 0603728A, Environmental Quality Technology

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BUDGET ACTIVITY

PE NUMBER AND TITLE

6 - Management support

0605857A - Environmental Quality Technology Mgmt Support

Demonstrations (025).

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BUDGET ACTIVITY	PE NUMBER AND TITLE		
6 - Management support	0605857A - Environmental Quality Technology Mgmt Support		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	4370	4958	5158
Current BES/President's Budget (FY 2009)	4279	4926	5125
Total Adjustments	-91	-32	-33
Congressional Program Reductions		-32	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	32		
SBIR/STTR Transfer	-123		
Adjustments to Budget Years			-33

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BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605857A - Environmental Quality Technology Mgmt Support					PROJECT 031	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
031 Environmentally Sustainable Acquisition/Logistics	3165	3405	3634	3710	3784	3869	3956	

A. Mission Description and Budget Item Justification: The Environmentally Sustainable Acquisition/Logistics (ESAL) project provides support to the system acquisition community to integrate environmental quality, system safety and occupational health, energy efficiency and material compatibility/corrosion control issues and concerns into the system acquisition process. The Army Acquisition Executive, the Assistant Secretary of the Army (Acquisition, Logistics, and Technology), and the Commanding General, Army Materiel Command (AMC) have defined the functions of the ESAL project in coordination with the office of the Assistant Secretary of the Army for Installations and Environment [ASA(I&E)]. This project supports acquisition policy support for concerns of Program Executive Officers and program managers and guidance and direct support for the Army acquisition community. ESAL helps the Army achieve compliance with its weapon systems, industrial base, field and deployed activities directed by international treaties, Federal statutes, Executive Orders, DoD and Army policies and regulations.

ESAL funds system acquisition support to the Army's Environmental Technology Technical Council (ETTC) and coordinates environmental quality related systems' needs for expanded research and development efforts. ESAL tasks are executed using appropriate Army research, development, and engineering centers; Army laboratories; and contractor facilities. Technologies are assessed for material compatibility, system safety, toxicity and health hazard risks and are implemented by program managers and life cycle management commands with their resources during design, development, or production; on the shop floor; during operations; and/or through improved materials and processes used by or on their system.

ESAL includes Army efforts to eliminate the use of ozone-depleting substances from weapon systems and facilities, to manage the Army ozone-depleting substance reserve, and Army acquisition efforts to eliminate the use of hazardous and toxic materials on Army systems. ESAL works in coordination with tactical units and field commands to leverage lessons-learned from field commanders to reduce the burden of hazardous materials on logistics and to reduce hazardous waste generated during operations and support of weapon systems. This includes supporting National Environmental Policy Act (NEPA) analyses by sharing data at the major command, installation, and unit level as appropriate. The focus of ESAL is on improving readiness, improving acquisition processes, reducing supportability burden, and minimizing total ownership cost. ESAL includes support to the Joint Group on Pollution Prevention (JG-PP).

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
- Environmentally Sustainable RDTE program management and oversight of technology integration efforts by Army Life Cycle Management Commands and weapon system program environmental integrated process teams. Participation and technical assistance in integrating pollution prevention technologies into system engineering activities. Technology management with weapon system environmental management teams to implement Department of Defense/Army policies related to hazardous and toxic materials, ozone depleting substances and environmental management systems to reduce environmental risks to acquisition programs. Provided oversight to integrated process teams addressing environmental quality issues from Army commodities and including participation in the Stryker Brigade Combat Team and Unit of Action environmental management teams. Provided technology management support across commodity areas for the Unit of Action and represented the Army acquisition community in development of Environmental Analyses	653	688	807

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
6 - Management support	0605857A - Environmental Quality Technology Mgmt Support	031		
related to Army Modernization. During FY07, continued emphasis will be placed on support of Acquisition Category (ACAT) II and ACAT III systems when the Milestone Decision Authority is not the Army Acquisition Executive.				
- Technical management and oversight of the Army's reserve of ozone depleting substances. Includes oversight of Army programs developing alternative chemicals to substitute into mission critical applications in tactical vehicles and aircraft. The reserve contains the Army's strategic resources of Halon 1301 used for explosion and fire suppression systems, and Freon (R-12) used for tactical cooling systems in wheeled combat and combat support vehicles. Technical management includes oversight of operational use of reserve resources, resolution of operational problems affecting reserve resources, coordination with weapon system program managers to affect system replacement and retrofit to eliminate ozone depleting chemicals, coordination and technical assistance to garrison commanders to assure recovery and deposit of excess Halon 1301 and R-12 into the reserve and management of resource levels to assure continued availability of Halon 1301 and R-12 needed to support combat mission critical applications throughout the life of legacy weapon systems. Includes participation in Federal government and multi-national forums discussing use of ozone depleting substances, justifying mission critical applications, and addressing international importation and use regulations. Significant effort supported Army warfighters in Operation Enduring Freedom and Operation Iraqi Freedom assuring adequate supplies of fire/explosion suppression and cooling agents in the theatre of operations. In addition, provided coordination and oversight to testing of Transcritical carbon dioxide (CO2) cooling systems for support to up-armored tactical vehicles. This new cooling system is demonstrating significant cooling improvement and is being coordinated for implementation. ESAL plans to maintain level funding support of continued warfighter readiness.	391	414	443	
- Technical management and oversight of system safety, health hazard and toxicity assessments of materials and chemicals used in weapon system configuration, production, maintenance and operation. Army regulations require all new materials and chemicals be assessed for health hazards and toxicity prior to introduction into the Army inventory. Technical management and oversight assure "environmentally preferable" materials and chemicals do not introduce unknown risks to soldiers and workers. Technical management is provided to assist in risk mitigation decisions for implementing solutions.	84	89	95	
- Technology support to Program Executive Offices and program managers to integrate environmental quality considerations into systems engineering activities. Includes definition of technology requirements to meeting operational requirements, participation in developing test plans and protocols, oversight of testing efforts, analysis of technical data to support implementation decisions, participation in technical and cost risk assessment and reassessment and revision of contractual and operational requirements for successful technology integration, operation and support. Accomplished through direct participation in weapon system environmental management teams located at major subordinate commands. Includes technology management in Environmental Management Systems and participation in documentation and review processes supporting weapon system program milestone decisions. Directly supported elimination of Cadmium, Hexavalent Chromium, and Halon from the Stryker and other ground combat systems. Continued development of an environmental management system for the Unit of Action, reviewing environmental statutes and regulations affecting communications-electronic commodities, and preparing environmental documentation for initial capability documents and in preparation for milestone reviews.	428	455	485	
- Technology management, technical support and representation of the Army Materiel Command (AMC) on the Joint Logistics Commander's Joint Group on Pollution Prevention. Includes coordination of technology requirements among service members, coordination of technology and operational requirements among Army program managers, management and oversight for developing joint test protocols, oversight of testing activities, and technical data analysis of test results to support systems engineering decision making.	140	149	158	
- Technology management, technical support, and representation of the AMC voting member of the Army's Environmental Quality Technology program's Environmental Technology Technical Council (ETTC). Includes coordination of Technology Base (RDTE)	739	739	815	

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT						
6 - Management support	0605857A - Environmental Quality Technology Mgmt Support	031						
<p>Budget Activity (BA)-1 & BA-2 requirements among members of the ETTC Pollution Prevention Technology Team, coordination of technology and operational requirements in support of RDTE BA-3 and BA-4 evaluations in support of weapon system platform integration, management and oversight for developing test plans, oversight of testing activities, and technical data analysis of test results to support weapon systems engineering decision making. Participation in performance and cost/risk assessments in support of Assistant Secretary of the Army (Installations & Environment) [ASA(I&E)] program objectives. Manage development and execution of plans for pollution prevention technology development in four technology areas including Sustainable Painting Operations for the Total Army (SPOTA) that address Army compliance with impending National Emission Standards for Hazardous Air Pollutants (NESHAPs) through a pollution prevention solution. Continue to provide oversight RDTE management to recomposition training simulators to remove perchlorate and other hazardous constituents in the composition of ammunition, rockets and missiles, and pyrotechnics. In FY07, develop management plan for new environmental quality technology programs including the Zero Footprint Camp and the Heavy Metals Reduction in Surface Finishing Processes.</p>								
<p>- Technology management and technical support to AMC industrial base and Army field installations for fielding and maintaining pollution prevention technology. Includes coordination of weapon system integration of pollution prevention technology for resolution of industrial base (depots, arsenals and ammunition plants) and garrison environmental issues associated with system fielding (operation and support). Coordination and information transfer supporting materiel fielding. Analysis of impending legal statutes impacting production, operation and support of weapon systems. Assessment of readiness impacts to weapon systems resulting from impacts in capabilities of industrial base and garrisons to support production levels, training and operational tempo and maintenance activities. Participate with ASA(I&E) management and representatives in assessing the readiness implications of impending NESHAPs on Army industrial base and garrison activities. Oversee evaluation of impacts of impending NESHAPs on Army modernization and fielding of Unit of Action. Provide Army acquisition community representation in Office of Systems Develop (OSD) and Department of the Army (DA) committees addressing environmental legislation and rulemaking.</p>					730	776	831	
Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR) Reductions						95		
Total					3165	3405	3634	

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BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605857A - Environmental Quality Technology Mgmt Support					PROJECT 06H	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
06H UNEXPLODED ORDNANCE CLEARANCE TECHNOLOGY SUPPORT	1114	1171	1218	1250	1281	1309	1339	

A. Mission Description and Budget Item Justification: This effort was devolved to the Army from the office of the Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)). This effort funds the Joint Unexploded Ordnance Coordination Office (JUXOCO) of the Unexploded Ordnance Center of Excellence (UXOCOE) to provide the day-to-day management, coordination, and information clearinghouse functions of the UXOCOE, which serves as the Department of Defense's (DoD) center for coordinating Unexploded Ordnance (UXO) requirements and programs across DoD; develops and promotes standards for testing, modeling, and evaluation; maintains information on technologies for UXO detection and clearance; publishes an annual report summarizing the activities and accomplishments of the UXOCOE in order to improve the effectiveness and economy of UXO detection and clearance RDT&E throughout DoD; and gathers and maintains a database for the results of these efforts. The Army oversees and coordinates this effort on behalf of the office of the USD(AT&L).

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Conduct review and technology workshops to coordinate and improve the technological thrusts of DoD UXO RDT&E.	120	125	130
Coordinate/collect/analyze UXO RDT&E information via conferences, seminars, and workshops.	339	355	371
Generate an annual UXO Clearance Report focused on UXO RDT&E efforts for countermines, explosive ordnance disposal, UXO remediation, humanitarian demining, and active range clearance.	187	196	205
Maintain and update the UXO clearance/detection databases and computer web site and analyze data from and programs in UXO RDT&E for potential solutions to UXO related needs.	255	286	282
Provide oversight of JUXOCOE's Ft. A. P. Hill test site which is used for standardized scientific experiments to help gather data on and model the performance of potential UXO sensors. Data are needed for the acquisition of UXO sensor performance data versus a full system evaluation. Focus is on the sensor itself, not on full-scale operational system capability. Full-scale development would occur during engineering and manufacturing development and be aimed at meeting validated requirements prior to full-rate production.	213	176	230
Small Business Innovative Research/Small Business Technology Transfer Programs		33	
Total	1114	1171	1218

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BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605898A - Management HQ - R&D					PROJECT M65	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
M65 Army Test and Evaluation Command (ATEC)	13893	14797	15665	16317	16935	17311	17702	

A. Mission Description and Budget Item Justification: This project provides for the salaries and related personnel benefits for the management headquarters authorized civilian personnel at the U.S. Army Test and Evaluation Command (ATEC), Alexandria, VA, and Aberdeen Proving Ground, MD. ATEC's mission involves the planning, conducting, and integration of developmental testing, independent operational testing, independent evaluations, assessments and experiments in order to provide essential information to decision makers.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Civilian labor and other support required to manage and administer the Army test and evaluation mission at ATEC.	13893	14779	15665
Small Business Innovative Research/Small Business Technology Transfer Programs		18	
Total	13893	14797	15665

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BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
6 - Management support	0605898A - Management HQ - R&D			M65
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	13937	14889	15639	
Current BES/President's Budget (FY 2009)	13893	14797	15665	
Total Adjustments	-44	-92	26	
Congressional Program Reductions		-92		
Congressional Rescissions				
Congressional Increases				
Reprogrammings	-42			
SBIR/STTR Transfer	-2			
Adjustments to Budget Years			26	

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BUDGET ACTIVITY		PE NUMBER AND TITLE							
7 - Operational system development		0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM							
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	63189	53712	59749	20648	8506	10719	10155	Continuing	Continuing
090 MLRS HIMARS	17704	4428	3774	2032	3475	6550	6409	Continuing	Continuing
093 MLRS JOINT TECH ARCHITECTURE	2333	4670	4109	4612	2404	1490	994	Continuing	Continuing
784 GUIDED MLRS	43152	44614	51866	14004	2627	2679	2752	Continuing	Continuing

A. Mission Description and Budget Item Justification: The High Mobility Artillery Rocket System (HIMARS), M270A1, Guided Multiple Launch Rocket System (GMLRS), GMLRS Unitary provide precision strike capability, and GMLRS Dual Purpose Improved Conventional Munitions (DPICM) has 404 submunitions.

HIMARS, is a C-130 transportable launcher mounted on a Family of Medium Tactical Vehicles (FMTV) chassis. HIMARS is capable of firing either 6 Multiple Launch Rocket System (MLRS) Family of Munitions (MFOM) rockets or one Army Tactical Missile (ATACMS) Family of Munitions (AFOM) missile, including precision munitions, to a range of 300KM.

Compliance with the Joint Technical Architecture (JTA) supports HIMARS and M270A1 MLRS Launcher programs, and is required by both Department of the Army and Office of the Secretary of Defense. The M270A1 upgraded MLRS launcher is mounted on a Bradley Fighting Vehicle chassis, and is capable of firing the MFOM and the AFOM, including precision munitions, to a range of 300KM.

GMLRS is a precision munition providing increased range to 70KM, and Global Positioning System (GPS) accuracy. Fired from M270A1 and HIMARS launchers, GMLRS comes in two variants: DPICM contains 414 submunitions, for attacking area targets with improved accuracy and significantly reduced hazardous duds; and GMLRS Unitary has a 200lb High Explosive (HE) warhead for attacking point targets with reduced collateral damage.

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BUDGET ACTIVITY	PE NUMBER AND TITLE		
7 - Operational system development	0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	74672	54055	60003
Current BES/President's Budget (FY 2009)	63189	53712	59749
Total Adjustments	-11483	-343	-254
Congressional Program Reductions		-343	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	-9451		
SBIR/STTR Transfer	-2032		
Adjustments to Budget Years			-254

Change Summary Explanation: Funding - FY 2007: Funds reprogrammed to support high priority Army programs.

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BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM						PROJECT 090	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
090 MLRS HIMARS	17704	4428	3774	2032	3475	6550	6409	Continuing	Continuing

A. Mission Description and Budget Item Justification: The M142 High Mobility Artillery Rocket System (HIMARS) fully supports more deployable, affordable, and lethal Brigade Combat Teams, Modular Forces and Joint Expeditionary Forces. It is a light weight, deployable system which provides long range precision strike capability in both early and forced entry scenarios. Mounted on a medium tactical wheeled vehicle chassis, HIMARS is transportable in a C-130 aircraft, and is self-loading and self-locating using Global Positioning System (GPS) technology. It fires the full Multiple Launch Rocket System (MLRS) Family of Munitions (MFOM) and Army Tactical Missile System (ATACMS) Family of Munitions (AFOM). Additionally a HIMARS battery requires significantly reduced airlift resources that are required to transport a battery of the tracked M270/M270A1 MLRS. HIMARS, as part of the Fires Brigade, provides fires that shape, shield and isolate the battle space. Using both Precision Guided Multiple Launch Rocket System (GMLRS) and ATACMS Unitary munitions, HIMARS provides close support fires for Troops In Contact (TIC) in both open and urban terrain. HIMARS has been deployed to both Operation Iraqi Freedom and Operation Enduring Freedom with great success. HIMARS is also a key component of the Marine Corps Future Fighting Effort.

Accomplishments/Planned Program:	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Continue system design and Production Qualification Testing (PQT), conduct Functional Configuration Audit (FCA), and develop Integrated Logistics Products (ILP); integrate and test Horizontal Technology Insertion (HTI) upgrades including Increased Crew Protection, Enhanced Command and Control, Improved Initialization, Obsolescence Mitigation, Tactical Fire Control, Embedded Training Launcher Loader Module (LLM) electric drive, Diagnostics/Pronostics, Alternate Coupling, Situational Awareness, Long Range Communication and future munition integration. Perform technical assessments, concept studies, cost reduction, risk reduction, field issue resolution and required documentation.	17704	4304	3774
Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) Programs		124	
Total	17704	4428	3774

B. Other Program Funding Summary	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
HIMARS Launcher (C02901)	190309	225133	246041	219102	222751	23450	20911	Continuing	Continuing
HIMARS Modifications (C67501)	14886	10470	16408	33082	26769	10084	9724	Continuing	Continuing
HIMARS Modifications: Initial Spares (CA0289)	1312	1261	1056	1839	1903	1945	1987	Continuing	Continuing
Initial Spares, HIMARS (CA0288)	7909	11441	11946	9103	19455	966	1260	Continuing	Continuing

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM

PROJECT

090

C. Acquisition Strategy The HIMARS program is currently in Full Rate Production (FRP) and awarded the FRP-3 contract December 2007. HIMARS follow-on Horizontal Technology Insertion (HTI) efforts include the Increased Crew Protection, Enhanced Command and Control, Improved Initialization, and Long Range Communication.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM							PROJECT 090		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Risk Reduction/ Maturation Contract	SS/CPIF & CPAF	LMMFC, Texas	113610								113610	
Path through Operational Test	SS/CPFF	LMMFC, Texas	11809								11809	
Work Directives/ Chassis and Cab	N/A	TACOM (S&S)	5733								5733	
Battle Command	SS/CPFF	CECOM, STRICOM, UA Networks, Techrizon, LMMFC, Texas	5909	1834	2-4Q	1201	2-3Q	2615	2-3Q	Cont.	Cont.	
Government Support	N/A	AMCOM/ GSA, RSA & TSM	16705	176	2-4Q	194	2-3Q	223	2-3Q	Cont.	Cont.	
Increased Crew Protection	SS/CPFF	LMMFC, Texas	8471	9823	2-3Q	1611	2-3Q				19905	
Subtotal:			162237	11833		3006		2838		Cont.	Cont.	

Remarks: TACOM - Tank Automotive & Armaments Command; AMCOM - Aviation & Missile Command
 RSA - Redstone Arsenal Alabama; STRICOM - Simulation Training and Instrument Command
 S&S - Stewart & Stevenson; GSA - General Services Administration
 LMMFC - Lockheed Martin Missile and Fire Control
 TSM - TRADOC System Manager; TBD - To Be Determined; N/A - Not Applicable
 CECOM - US Army Communication - Electronics Command
 SS - Sole Source; CPIF - Cost Plus Incentive Fee; CPAF - Cost Plus Award Fee
 CPFF - Cost Plus Fixed Fee; UA - Unit of Action

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C/CPFF	Camber Research/S3/TMI, Alabama	2119	232	2-3Q	385	2-3Q	354	2-3Q	Cont.	Cont.	
Subtotal:			2119	232		385		354		Cont.	Cont.	

Remarks: S3 - Systems Studies Simulation, Inc., TMI - Tec Masters Inc

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM	PROJECT 090
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III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Support	N/A	Fort Hood,ATEC,APG MD,WSMR NM & RTTC RSA	35402	5306	2-4Q	916	2-4Q	453	2-4Q	Cont.	Cont.	
Subtotal:			35402	5306		916		453		Cont.	Cont.	

Remarks: APG MD - Aberdeen Proving Ground, Maryland
 WSMR NM - White Sands Missile Range, New Mexico
 RTTC RSA - Redstone Technical Test Center
 ATEC - US Army Test and Evaluation Command

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
In-House Support	N/A	PFRMS Project Office, Redstone Arsenal, AL	8397	333	1-4Q	121	1-4Q	129	1-4Q	Cont.	Cont.	
Subtotal:			8397	333		121		129		Cont.	Cont.	

Remarks: PFRMS - Precision Fires Rocket and Missile Systems

Project Total Cost:	208155	17704		4428		3774		Cont.	Cont.	
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Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13							
	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				
	BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM																												PROJECT 090		
Increased Crew Protection Development and Live Fire Test and Evaluation (LFT&E)																																
Increased Crew Protection & LFT&E																																
Central Technical Support Facility Certification																																
Enhanced Command and Control Development and Testing													Software Blk 2-5																			
													Enhanced Cmd and Ctrl Dev/Test																			

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM					PROJECT 090	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Increased Crew Protection Development and Live Fire Test and Evaluation (LFT&E)	1Q - 4Q	1Q - 3Q						
Central Technical Support Facility Certification	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Enhanced Command and Control Development and Testing	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM					PROJECT 093	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
093 MLRS JOINT TECH ARCHITECTURE	2333	4670	4109	4612	2404	1490	994	Continuing	Continuing

A. Mission Description and Budget Item Justification: Compliance with the Joint Technical Architecture (JTA) as defined in the DoD Information Technical Standards Registry (DISR) supports the M142 High Mobility Artillery Rocket System (HIMARS) and M270A1 Multiple Launch Rocket System (MLRS) launcher programs and is required by both the Department of the Army and the Office of the Secretary of Defense (OSD). JTA provides for analysis and integration of Network Interoperability, and Global Positioning System (GPS) Modernization. Network Interoperability includes upgrades to meet Joint reference standards, compliance with information assurance mandates, long range communications, Sensor to Effects (STE), and Enhanced Command and Control (C2) for M142 and M270A1 launchers. Support Joint and Army interoperability certifications via Central Technical Support Facility (CTSF), Joint Interoperability Test Certificate (JITC) and implementing Army Software Blocking policy. These efforts include conducting assessments, integration, and prototyping of long range communications and situational awareness.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Required GPS Modernization.			442
Command, Control, Communications, Computers, and Intelligence (C4I)/Interoperability Certification Tests, Improved Operational Timeline.	1424	2407	2825
Card Consolidation.	191		
Network interoperability Testing/Certification.	442	558	356
Perform technical assessments, concept studies, and risk reduction.	276	1574	486
Small Business Innovative Research/Small Business Technology Transfer Program		131	
Total	2333	4670	4109

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
MLRS Mods(C67500)	5508	5540	1872	3117	3121	3190	3260	Continuing	Continuing
HIMARS Launcher (C02901)	190309	225133	246041	219102	222751	23450	20911	Continuing	Continuing
MLRS Mod Initial Spares (CA0265)	519	1043	1040	1039	1040	1063	1086	Continuing	Continuing
HIMARS Modifications (C67501)	14886	10470	16408	33082	26769	10084	9724	Continuing	Continuing
HIMARS Initial Spares (CA0288)	7909	11441	11946	9103	19455	966	1260	Continuing	Continuing
HIMARS Mod Initial Spares (CA0289)	1312	1261	1056	1839	1903	1945	1987	Continuing	Continuing

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM

PROJECT

093

Comment:

C. Acquisition Strategy The Joint Technical Architecture (JTA) program ensures compliance as defined in the Department of Defense (DoD) Information Technical Standards. Funding is provided to several Government Agencies/Laboratories each Fiscal Year in support of this program. Support efforts include Enhanced C2, Interoperability Certifications, and Information Assurance compliance.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM							093		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contract	CPFF	LMMFC-D, Dallas, Texas	21583	191	2Q	257	1-3Q	442	1-3Q	Cont.	Cont.	
Government Support	N/A	AMRDEC-RSA AL, FT SILL OK, CECOM-NJ	5581	941	1-3Q	1683	1-3Q	2153	1-3Q	Cont.	Cont.	
Subtotal:			27164	1132		1940		2595		Cont.	Cont.	
Remarks: CPFF - Cost Plus Fixed Fee LMMFC-D - Lockheed Martin Missile and Fire Control-Dallas N/A - Not Applicable AMRDEC - United States Army Research, Development, and Engineering Command RSA AL - Redstone Arsenal, Alabama OK - Oklahoma CECOM - United States Army Communication - Electronics Command												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	Various	Multiple	40	593	1-3Q	2004	1-3Q	987	1-3Q	Cont.	Cont.	
Subtotal:			40	593		2004		987		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Support, Joint Interoperability Test Certificate	N/A	CTSF, Ft. Hood, Texas	709	442	1-3Q	558	1-3Q	356	1-3Q	Cont.	Cont.	
Test Support	N/A	AMCOM, RTTC, Redstone Arsenal, Alabama	154							Cont.	154	
Test Support	N/A	WSMR, New Mexico	442							Cont.	442	
Subtotal:			1305	442		558		356		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM	PROJECT 093
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Remarks: CTSF - Central Test Support Facility AMCOM - Army Missile Command RTTC-Redstone Technical Test Center
WSMR - White Sands Missile Range

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
In-House Support	N/A	PFRMS Proj Ofc, Redstone Arsenal, Alabama	2896	166	1-4Q	168	1-4Q	171	1-4Q	Cont.	Cont.	
Subtotal:			2896	166		168		171		Cont.	Cont.	

Remarks: PFRMS - Precision Fires Rocket and Missile Systems

Project Total Cost:	31405	2333		4670		4109		Cont.	Cont.	
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Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
	Comd, Cntrl, Com, Comp, and Intell (C4I)/Interop Cert Tests, Imp Oper Timeline																											
Card Consolidation																												
Network Interoperability Testing/Cerification																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM					PROJECT 093	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Comd, Cntrl, Com, Comp, and Intell (C4I)/Interop Cert Tests, Imp Oper Timeline	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Card Consolidation	1Q - 4Q							
Network Interoperability Testing/Cerification	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q			

Command, Control, Communications, Computers, and Intelligence (C4I)/Interoperability Certification Tests, Improved Operational Timeline.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM						PROJECT 784	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
784 GUIDED MLRS	43152	44614	51866	14004	2627	2679	2752	Continuing	Continuing

A. Mission Description and Budget Item Justification: Guided Multiple Launch Rocket System (GMLRS) munitions are the Army's primary organic Joint Expeditionary, all-weather, all-terrain, 24/7, tactical range precision guided rockets employed by modular Fires Brigades supporting Brigade Combat Teams (BCT), Divisions, Joint Special Operations Force (JSOF), and Joint Force combatant commanders. GMLRS are the primary munitions for units fielded with the High Mobility Artillery Rocket System (HIMARS) and Multiple Launch Rocket System (MLRS) M270A1 rocket and missile launcher platforms. GMLRS provides close, medium and long range pin point precision and massed fires to destroy, suppress and shape threat forces and protect friendly forces against: cannon, mortar, rocket and missile artillery; light materiel and armor; personnel; command and control; and air defense surface targets. GMLRS is a major upgrade/replacement for the aging M26/A1/A2 rocket inventory that integrates a guidance and control package and an improved rocket motor achieving greater range and precision accuracy requiring fewer rockets to defeat targets than current artillery rockets, thereby reducing the logistics burden. There are two variants of GMLRS; GMLRS with Dual Purpose Improved Conventional Munitions (DPICM) and GMLRS with a 200 pound class high explosive warhead (Unitary). The GMLRS DPICM is a five nation cooperative program among France, Germany, Italy, United Kingdom and the United States. The GMLRS Unitary is a modification to the GMLRS DPICM integrating a multi-mode fuze and high explosive Insensitive Munition (IM) warhead making it an all-weather, low collateral damage, precision rocket. This expands the MLRS target set into urban and complex environments, adds point targets, and supports Troops in Contact (TIC). The alternative warhead will service the DPICM target set and leave zero unexploded ordnance on the battlefield. This effort includes development and test activities. To meet Central Command Operational Need Statements, two quantities (486/972) of limited capability GMLRS Unitary rockets were accelerated and fielded in Iraq between June 2005 and December 2007. In the more than 500 missions flown in Operation Iraqi Freedom (OIF)/Operation Enduring Freedom (OEF), the GMLRS Unitary Rocket has recorded a 98% reliability rate demonstrating high effectiveness and low collateral damage while supporting TIC. Continued GMLRS Unitary development efforts will incorporate trajectory shaping capability into the flight software. Additional material changes will provide operational flexibility and capability against an expanded target set. GMLRS is also a key component of the Marine Corps Future Fighting Effort.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Perform technical assessments, concept studies, prepare milestone documentation and risk reduction	2152	2473	3624
Conduct Development and Engineering for Insensitive Munitions (IM) Program	2341	4715	5038
Conduct Development Engineering; Design and Develop; Perform Integration and Test of Multi-Mode Fuzes and Alternative Warheads	9790	19801	22350
Initiate Initial Common Hardware Buy for Test Activities for Unitary (test articles for Engineering Development Testing (EDT), Production Qualification Testing (PQT), Cold Region Testing, & Initial Operational Test & Evaluation (IOT&E))	10318		
Perform Anti-Jamming Analysis and System Engineering/Integration	3533		
Conduct Functional Configuration Audit, Final Product Data Definition Package (PDDP), and System Integration Test	8893	8181	8780
Conduct system test and evaluation activities	6125	8262	12074
Small Business Innovative Research/Small Business Technology Transfer Programs		1182	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM	PROJECT 784
Total	43152	44614

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
Missile Procurement Army - GMLRS (C64400)	124952	201786	247213	311271	341392	368386	369399	Continuing	Continuing

Comment:

C. Acquisition Strategy The Guided Multiple Launch Rocket System (GMLRS) Dual Purpose Improved Conventional Munitions (DPICM) is currently in Full Rate Production (FRP). The primary objective of the GMLRS DPICM System Development and Demonstration (SDD) was to develop a rocket with greater range and significantly enhanced accuracy with minimum impact on existing MLRS companion hardware and software. Recent testing of the self-destruct fuze has proven a significantly lower dud rate and will be cut into production immediately. Other GMLRS development efforts include desired new rocket motor capabilities; design, evaluation, and test of alternative warhead technologies; and increased range. The European Cooperative Development Partners for GMLRS have expressed a desire to join the GMLRS Alternative Warhead program.

The GMLRS Unitary Acquisition Strategy is a streamlined product improvement program. Initial configuration hardware maximizes commonality with GMLRS DPICM and incorporate a new warhead and multi-mode fuze (point detonation, airburst and delay). The European Cooperative Development Partners for GMLRS have expressed a desire to join the GMLRS Unitary program during the Production and Deployment Phase. In FY05, Congress encouraged the Army to accelerate the GMLRS Unitary program to field a quantity of not less than 450 rockets with limited capability no later than fourth quarter FY06. In December 2004, the Army received an urgent need statement from Central Command requesting limited capability GMLRS Unitary rockets by fourth quarter FY06. The first 72 limited capability GMLRS Unitary Rockets were fielded in theater during June 05. In the more than 500 missions flown in Operation Iraqi Freedom (OIF)/Operation Enduring Freedom (OEF), the GMLRS Unitary Rocket has recorded a 98% reliability rate demonstrating high effectiveness and low collateral damage while supporting Troops in Contact (TIC).

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM							784		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
SDD DPICM Contract	SS/CPAF	LMMFCS Dallas, TX	91194								91194	
SDD Unitary Contract	SS/CPFF	LMMFCS Dallas, TX	163679	18097	1Q	24136	1Q	24168	1Q	Cont.	Cont.	
Government Support	N/A	AMCOM/AMRDEC, RSA	57437	3626	1-3Q	7183	1-4Q	3220	1-4Q	Cont.	Cont.	
Subtotal:			312310	21723		31319		27388		Cont.	Cont.	

Remarks: DPICM - Dual Purpose Improved Conventional Munitions; SS/CPAF - Sole Source/Cost Plus Award Fee; SS/CPFF - Sole Source/Cost Plus Fixed Fee; LMMFCS - Lockheed Martin Missile and Fire Control System; TX - Texas; AMCOM-Aviation & Missile Command; AMRDEC - U.S. Army Research, Development & Engineering Command; RSA - Redstone Arsenal, Alabama; N/A - Not Applicable

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C/CPFF	Camber Research/S3/TMI, Alabama	15413	2845	1-3Q	1479	1-3Q	1932	1-3Q	Cont.	Cont.	
Subtotal:			15413	2845		1479		1932		Cont.	Cont.	

Remarks: C/CPFF-Cost/Cost Plus Fixed Fee
S3-Systems Studies Simulation, Inc.
TMI-Tec Masters, Inc.

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Support	N/A	WSMR, NM	78251	14906	1-4Q	8227	1-4Q	20936	1-4Q	Cont.	Cont.	
Subtotal:			78251	14906		8227		20936		Cont.	Cont.	

Remarks: WSMR, NM - White Sands Missile Range, New Mexico

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM							784		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
In-House Support	N/A	PFRMS Proj Ofc, RSA	16631	3678	1-4Q	3589	1-4Q	1610	1-4Q	Cont.	Cont.	
Subtotal:			16631	3678		3589		1610		Cont.	Cont.	
Remarks: PFRMS - Precision Fires Rocket and Missile Systems												
Project Total Cost:			422605	43152		44614		51866		Cont.	Cont.	

Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
	Unitary POT-2					POT-2																						
(1) UNITARY MS C						MS C																						
(2) UNITARY LRIP I CA					LRIP I																							
Alternative Warhead																												
UNITARY FRP IOTE					IOTE																							
(3) UNITARY IOC																												
UNITARY FRP																												
Technical Assessment/Concept Studies/Cost Reduction Studies																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM					PROJECT 784	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Unitary PQT-2	1Q							
UNITARY MS C	2Q							
UNITARY LRIP I CA	3Q							
Alternative Warhead	2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q				
UNITARY FRP IOTE		2Q - 3Q						
UNITARY IOC		4Q						
UNITARY FRP			1Q					
Technical Assessment/Concept Studies/Cost Reduction Studies				1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	

Termination Liability Funding For Major Defense Acquisition Programs, RDT&E Funding (R5)	February 2008
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BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM	PROJECT 784
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Funding in \$000							
Program	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Guided MLRS							
Total Termination Liability Funding:							

Remarks:
The GMLRS Program Prime Contract Incorporates the "Limitation Of Funds" Clause (DFARS 52.232-22) to limit the government's liability. For the GMLRS Program, The "Limitation of Funds" Clause limits the government's financial liability per the Contract to those funds placed on contract plus any outstanding commitments plus costs associated with the orderly termination of contractual actions.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0603820A - Weapons Capability Modifications UAV						PROJECT D20	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
D20 UAV WEAPONIZATION CAPABILITY MOD	1549	3875							5424

A. Mission Description and Budget Item Justification: The Extended Range Multi-Purpose (ERMP) Unmanned Aircraft System (UAS) includes and addresses the full scale development and integration of a weapon system capability.

These modifications include the refinement of requirements, the selection of the weapons matched to the aircraft capabilities, hardware and software design, development, and integration with the system.

This will include requisite airframe, mission management software and weapon compatibility modifications necessary to carry and employ weapons. Tests are required to ensure reliable, safe, accurate, and timely weapons stowage and delivery. Weaponization of ERMP includes the full scale development and integration of a modified HELLFIRE missile into the ERMP UAS. Missile development will include type classification and formal materiel release.

Accomplishments/Planned Program:	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Launcher Modification / Test Equipment / Integration		3875	
Guided Dispenser System for Tactical UAV	1549		
Total	1549	3875	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0603820A - Weapons Capability Modifications UAV			PROJECT D20
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	1582	3900		
Current BES/President's Budget (FY 2009)	1549	3875		
Total Adjustments	-33	-25		
Congressional program reductions				
Congressional rescissions	-33	-25		
Congressional increases				
Reprogrammings				
SBIR/STTR Transfer				
Adjustments to Budget Years				

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

D. Acquisition Strategy Development/integration of an extended range unmanned aircraft includes a two phased approach. Phase I was a paper downselect to two vendors. Phase II consisted of a competition with a flyoff and downselect to one qualified airframe vendor which occurred on 6 Aug 05. PM UAS in coordination with PM JAMS will integrate the modified HELLFIRE missile system into the ERMP UAS. PM JAMS will design, develop, test, and deliver the modified HELLFIRE missile.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0603820A - Weapons Capability Modifications UAV							D20		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Integration and Testing of UADD	MIPR	Other Government Agency	2876	1549	2-3Q						4425	17074
Launcher Modification / Test Equipment / Integration	MIPR	Other Government Agency				3875	1-2Q				3875	
Subtotal:			2876	1549		3875					8300	17074
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
Project Total Cost:			2876	1549		3875					8300	17074

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0603820A - Weapons Capability Modifications UAV

PROJECT
D20

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0603820A - Weapons Capability Modifications UAV					PROJECT D20	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
System Requirements Review								
Program Design Review								
Contract Design Review								
Proof of Principle Testing Firings		2Q						
Limited User Test Firings			1Q					
P+ Missiles Contract Award (CA)			1Q					
P+ Launcher Contract Option (CA)	4Q							
System Development Demonstration	1Q - 2Q							
IOT&E / Limited User Test (LUT)			1Q					
Production Proveout Test		3Q - 4Q	1Q - 2Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0102419A - Aerostat Joint Project Office					PROJECT E55		
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
E55 Jnt Land Atk Msl Def Elevated Netted Sensor-JLENS	237795	478204	356434	335071	318513	181294			1907311

A. Mission Description and Budget Item Justification: (U) The mission of the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) is to provide elevated, persistent, Over-The-Horizon (OTH) surveillance and fire control quality data on Army and Joint networks enabling protection of the United States, Allied and Coalition forces, as well as critical geo-political assets from Cruise Missiles and Aircraft, Unmanned Aerial Vehicles (UAVs), Tactical Ballistic Missiles (TBMs), Large Caliber Rockets (LCRs), and Surface Moving Targets (SMTs). JLENS is a critical part of the Army's future Integrated Air and Missile Defense (IAMD) architecture and is a Joint Service interest program. A JLENS orbit consists of two systems: a fire control radar system and a wide-area surveillance radar system. Each radar system employs a separate 74-meter tethered aerostat, mobile mooring station, radar and communications payload, processing station, and associated ground equipment. JLENS uses advanced sensor and networking technologies to provide 360-degree, wide-area surveillance and precision tracking of land-attack cruise missiles. This JLENS information is distributed via the Joint Data Network and Joint Composite Tracking Network, contributes to the single integrated air picture. JLENS has the capability of detecting and tracking surface moving targets, detecting Tactical Ballistic Missiles at boost phase and Large Caliber Rockets during the ascent phase. JLENS also performs as a multi-role platform to enable extended range command and control linkages, communications relay, and battlefield situational awareness.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Continue System Development and Demonstration phase contract activity.	197162	386874	305704
Continue work on Lightweight X-Band Radar Micro Electro Mechanical (MEMS) Antenna Technology.	1000		
Start work on Navy Integrated Fire Control - Counter Air/JLENS Planning and Analysis		1512	1512
System Test and Evaluation	9939	10583	10348
Other contracts and Other Government Agencies (OGAs).	18809	28901	27925
Project Management	3650	3955	2070
Government Furnished Equipment(GFE)	7235	33064	8875
Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)		13315	
Total	237795	478204	356434

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
7 - Operational system development	0102419A - Aerostat Joint Project Office			E55
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	242781	481251	353983	
Current BES/President's Budget (FY 2009)	237795	478204	356434	
Total Adjustments	-4986	-3047	2451	
Congressional Program Reductions		-3047		
Congressional Rescissions				
Congressional Increases				
Reprogrammings	-4986			
SBIR/STTR Transfer				
Adjustments to Budget Years			2451	

<u>C. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
PE 0604869A, Proj M06, Patriot/MEADS Combined Aggregate Program (CAP)	322915	369786	431270	585597	424948	433464	76911	Continuing	Continuing
SSN C50001, Patriot/MEADS CAP			31049	400215	668463	1032860	1305623	Continuing	Continuing
SSN BZ0525, JLENS PRODUCTION					442084	440585	391876	Continuing	Continuing
PE 0604802A, Proj S23, SLAMRAAM	28549	34526	31774					Continuing	Continuing
SSN C81001, SLAMRAAM Production			40468	117094	76073	61307	61307	Continuing	Continuing
PE 0604820A, Proj E10, SENTINEL	2446	7022						Continuing	Continuing
PE 0603327E88, Proj E88, Integrated Fire Control AMD	36342							Continuing	Continuing
327S34, Proj S34, AMD System of System Engineering and Integration	1870	137517	113853	81057	37608	5203		Continuing	Continuing

Comment: This PE is an integral part of the PEO, Missiles and Space Integrated Air and Missile Defense (IAMD) Program including Integrated Fire Control, JLENS, Patriot/MEADS Combined Aggregate Program (CAP), SLAMRAAM, SENTINEL, and on-going initiatives to achieve Single Integrated Air Picture (SIAP).

D. Acquisition Strategy On 28 Jun 05, the DAB approved the JLENS program for entry into System Development and Demonstration (SDD) as recommended by the Army

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	0102419A - Aerostat Joint Project Office	E55

Acquisition Executive. The DAB elected to maintain oversight of JLENS as an ACAT 1D program as stated in the Acquisition Decision Memorandum signed on 5 Aug 05.

A JLENS Orbit consists of a Fire Control Radar System and a Surveillance Radar System, each with its own aerostat platform, mobile mooring station, communications payloads, mobile processing station, and associated ground support equipment. Development Test and Evaluation (DT&E) will be conducted in FY11 culminating in an SDD First Unit Equipped by 4QFY11. Initial Operational Test and Evaluation (IOT&E) will be conducted in FY12 culminating with the fielding of the first JLENS Orbit.

The JLENS Operational Requirements Document (ORD) calls for initial fielding to Block 1 requirements (tethered aerostat platforms for Fire Control and Surveillance radars); followed by fielding of Block 2 (untethered platforms for Fire Control and Surveillance radars); and Block 3 (both radars on a single untethered platform). There is currently no funding beyond Block 1. The Army plans to move to Block 2 once technology has matured sufficiently to make development of Block 2 capability attainable.

Negotiations were conducted in November culminating in an agreed to price for the JLENS SDD effort on 1 Dec. 06. The contract change order modification was signed and definitized on 14 Dec 06. This contract modification established a SDD period of performance of 27 Oct 05 through 30 Sep 12.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0102419A - Aerostat Joint Project Office							E55		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Technology Development (TD) Phase Contracts and Government	Sole Source/Cost Plus Incentive Fee (SS/CPIF)	Raytheon Systems Co. (MA/CA/FL/TX)	301083								301083	301083
Lightweight X-band Radar Antenna	Not Applicable (N/A)	Multiple	6811	1000	2Q						7811	
Contractor System Development and Demonstration (SDD) Hardware/Software	SS/CPIF	Raytheon Systems Co. (MA/CA/FL/TX)	65861	176583	1Q	361399	1Q	287284	1Q	Cont.	Cont.	Cont.
SDD OGA System Engineering	N/A	Multiple	3170	3867	1Q	6052	1Q	6301	1Q	Cont.	Cont.	
SDD System Engineering Contracts	N/A	Multiple	9274	14181	1-2Q	21916	1-2Q	20654	1-2Q	Cont.	Cont.	
SDD GFE Various	N/A	Multiple		4105	1Q	23043	1Q	1375	1-2Q	Cont.	Cont.	
SDD GFE - Cooperative Engagement Transmission Processing Set (CETPS)	N/A	Multiple	800	3130	1Q	10021	1Q	7500	1Q	Cont.	Cont.	
SDD Navy Integrated Fire Control - Counter Air Demonstration		Multiple				1512	1Q	1512	1Q	Cont.	Cont.	
Subtotal:			386999	202866		423943		324626		Cont.	Cont.	Cont.

Remarks: Technology Development and System Development and Demonstration activities are separately identified.

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
TD Phase Misc Support	N/A	Multiple	2084								2084	
SDD Govt Intergrated Logistics Support	N/A	Multiple	679	761	1Q	933	1Q	970	1Q	Cont.	Cont.	
SDD Organizational Support Equipment	N/A	Multiple								Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY				PE NUMBER AND TITLE						PROJECT			
7 - Operational system development				0102419A - Aerostat Joint Project Office						E55			
Subtotal:				2763	761		933		970		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
TD Phase Maintain Test Bed	Sole Source/Cost Plus Fixed Fee (SS/CPFF)	CAS-TX, NM	3056								3056		
SDD Contractor System Test & Evaluation	SS/CPIF	Raytheon Systems Co. (MA/CA/FL/TX)	933	2854	1Q	3728	1Q	2754	1Q	Cont.	Cont.	Cont.	
SDD Government System Test & Evaluation	N/A	Multiple	178	9939	1Q	10583	1Q	10348	1Q	Cont.	Cont.		
Subtotal:			4167	12793		14311		13102		Cont.	Cont.	Cont.	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
SDD Contractor Program Management	SS/CPIF	Raytheon Systems Co. (MA/CA/FL/TX)	15305	17725	1Q	21747	1Q	15666	1Q	Cont.	Cont.	Cont.	
SDD Government Program Management	N/A	PEO Missiles and Space, HSV, AL	2651	3650	1-4Q	3955	1-4Q	2070	1-4Q	Cont.	Cont.		
SBIR/STTR					1-4Q	13315					13315		
Subtotal:			17956	21375		39017		17736		Cont.	Cont.	Cont.	
Project Total Cost:			411885	237795		478204		356434		Cont.	Cont.	Cont.	

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0102419A - Aerostat Joint Project Office

PROJECT
E55

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
Program Milestones: (1) Orbit SFR, (2) Orbit PDR, (3) IBR, (4) Orbit CDR, (5) Orbit 1 Delivery to Test, (6) MS C, (7) Orbit 2 Delivery to Test, (8) FUE	SFR ▲ ₃ ▲ ₁ IBR				PDR ▲ ₂				CDR ▲ ₄				Orbit 1 ▲ ₅ ▲ ₇ ▲ ₈				MS C Orbit 2 FUE											
Platform Development	Platform Development and Integration																											
Fire Control Radar Development	Fire Control Radar Development and Integration																											
Surveillance Radar Development	Surveillance Radar Development and Integration																											
Communication and Processing Group Development	Communications Processing Group Development and Integration																											
Subsystem/System Level Testing	Ss/Sys Lvl Test																											
Demonstration Testing	DT																											
Limited User Test	LUT																											
Force Development Test	FDT																											
Initial Operational Test	IOT																											

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0102419A - Aerostat Joint Project Office					PROJECT E55	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Program Milestones:								
Orbit SRR (4Q FY06)								
Orbit SFR	2Q							
Orbit PDR		2Q						
IBR	2Q							
Orbit CDR			2Q					
Orbit 1 Delivery to Test					1Q			
MS C					2Q			
Orbit 2 Delivery to Test					2Q			
FUE					4Q			
Platform Development	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q			
Fire Control Radar Development	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q			
Surveillance Radar Development	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q			
Communication and Processing Group Development	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q			
Subsystem/System Level Testing				3Q - 4Q	1Q - 2Q			
Demonstration Testing					1Q - 4Q	1Q - 2Q		
Limited User Test					2Q			
Force Development Test						1Q - 2Q		
Initial Operational Test						2Q - 3Q		

Termination Liability Funding For Major Defense Acquisition Programs, RDT&E Funding (R5)	February 2008
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BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0102419A - Aerostat Joint Project Office	PROJECT E55
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Funding in \$000							
Program	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total Termination Liability Funding:							

Remarks:
The JLENS Prime Contract Incorporates The "Limitation Of Funds" Clause (DFARS 52.232-22) To Limit The Government's Liability.

For The JLENS Program, The "Limitation Of Funds" Clause Limits The Government's Financial Liability Per The Contract To Those Funds Placed On Contract Plus Any Outstanding Commitments Plus Costs Associated With The Orderly Termination Of Contractual Actions.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
7 - Operational system development		0203726A - Adv Field Artillery Tactical Data System						322	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
322 Adv Fa Tac Data Sys/Eff Cntrl Sys (AFATDS/ECS)	18848	16730	15860	11951	9588	10731	11057	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Advanced Field Artillery Data System (AFATDS) performs Command and Control, increases Situational Awareness and automates fire support coordination for the Army, Navy, Air Force, and Marine Corps. Fire support is the effects of lethal and non-lethal weapons (fires) that directly support land, maritime, amphibious, and special operation forces to engage enemy forces, combat formations, and facilities in pursuit of tactical and operational objectives. Fire support coordination is the planning and execution of fires so that a suitable weapon or group of weapons adequately covers targets.

AFATDS performs the attack analysis necessary to determine the optimal weapon target pairing to provide maximum use of the fire support assets. As a result of Operation Iraqi Freedom (OIF)/Operation Enduring Freedom (OEF), AFATDS has implemented precision fires capabilities in new/improved munitions such as Multiple Launch Rocket System (MLRS) Unitary Vertical Attack, Excalibur, Smart and 155 Bonus. Additional implemented capabilities include automatic conduct of Unit Fratricide Avoidance Checks and Collateral Damage Avoidance. AFATDS will field New Non Line of Sight - Launch System (NLOS-LS) Precision Attack Munition (PAM) and improved Command and Control (C2) for the United States Marine Corp (USMC) Firing platform and its new munitions. AFATDS will port to a windows based operating system in FY 08. AFATDS will automatically implement detailed commander's guidance in the automation of operational planning, movement control, targeting, target value analysis and fire support planning. This project is a replacement system for the Initial Fire Support Automated System (IFSAS), Battery Computer System (BCS) and the Fire Direction System (FDS). AFATDS will interoperate with the other Army Battle Command Systems (ABCS), current and future Army, Navy and Air Force Command and Control weapon systems, and the German, French, British and Italian fire support systems.

AFATDS automates the planning, coordinating and controlling of all fire support assets in the Joint battlespace (field artillery, mortars, close air support, naval gunfire, attack helicopters and offensive electronic warfare). AFATDS will perform the Fire Support Command, Control, and Coordination requirements at all echelons of field artillery and maneuver, from Echelons Above Corps to Battery or Platoon in support of all levels of conflict. The system is composed of Common Hardware/Software employed in varying configurations at different operational facilities (or nodes) and unique system software interconnected by tactical communications in the form of a software-driven, automated network.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Provide program and test support for AFATDS Software Block 2 (V6.5) (08-10), Software Block 2+(V6.6) (09-11) and Software Block 3 (V6.7) (10-12).	4842	4080	4415
Complete AFATDS Software Block 2 (V 6.5)(08-10). Continue development of Software Block 2+ (V6.6) (09-10) and Software Block 3 (V6.7) (10-12). Initiate Software Block 3+ (V6.8) (11-13) development efforts.	14006	12218	11445
Small Business Innovative Research/Small Business Technology transfer program		432	
Total	18848	16730	15860

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203726A - Adv Field Artillery Tactical Data System			PROJECT 322
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	18191	16837	15912	
Current BES/President's Budget (FY 2009)	18848	16730	15860	
Total Adjustments	657	-107	-52	
Congressional Program Reductions		-107		
Congressional Recissions				
Congressional Increases				
Reprogrammings	657			
SBIR/STTR Transfer				
Adjustments to Budget Years			-52	

<u>C. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
OPA (B28600)	31663	13836	21635	7705	3495	347		Continuing	Continuing
OPA (B28620)	5249	13500	14367	19171	20380	19494	19562	Continuing	Continuing
Spares	92							Continuing	Continuing

Comment: Beginning in FY08, procurement funding for AFATDS (B28600) and MIS-AFATDS (B28620) now falls under the parent Fire Support C2 Family - SSN: B28501.

D. Acquisition Strategy AFATDS has been fielded since 1996, with the original AFATDS Version 96 Materiel Release. It has been updated with subsequent releases reflecting the Spiral development strategy of the program. AFATDS Version 6.3.2 was released in January 2004, and AFATDS Version 6.4.0.1 (out of cycle) was released in May 2007 and AFATDS Version 6.4.0.2 (out of cycle) released in Sep 2007.

As a result of Operation Iraqi Freedom (OIF)/Operation Enduring Freedom (OEF), AFATDS has implemented precision fires capabilities in new/improved munitions such as Multiple Launch Rocket System (MLRS) Unitary Vertical Attack, Excalibur, Smart and 155 Bonus. Additional implemented capabilities include automatic conduct of Unit Fratricide Avoidance Checks and Collateral Damage Avoidance. AFATDS will field New Non Line of Sight - Launch System (NLOS-LS) Precision Attack Munition (PAM) and improved Command and Control (C2) for the United States Marine Corp (USMC) Firing platform and its new munitions. AFATDS will port to a Windows based operating system in FY 08.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	0203726A - Adv Field Artillery Tactical Data System	322

FY08 development efforts will focus on the 10-12 (SWB3) software baseline. Development efforts will continue to enhance command and control for precision weapons. Excalibur Height above Ellipsoid (HAE), Active Weapon Target pairing and Unexploded Ordnance (UXO) area computations. AFATDS on a card, also known as, 'Command and Control on a Launcher' will give an abbreviated AFATDS functionality to MLRS Launchers. It will also provide backward interoperability to Pass and Subscribe Services (PASS) and AFATDS XML Engine (AXE) for Software Block 2 (SWB2) to enable connection to SWB1/1+ versions.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203726A - Adv Field Artillery Tactical Data System							322		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software Development	CPAF	Raytheon Systems Corp, Ft. Wayne, IN	220070	13767	2-3Q	11998	2-3Q	11195	2-3Q	Cont.	Cont.	
ABCS System Engineering & Integration Efforts	PWD	PEO C3T, Fort Monmouth, NJ	5390							Cont.	Cont.	
Peculiar Support Equipment (PSE)	C/FFP	General Dynamics, Taunton, MA	4843	239	2Q	220	2Q	250	2Q	Cont.	Cont.	
Subtotal:			230303	14006		12218		11445		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software Development Support	MIPR	CECOM, Ft. Monmouth, NJ & Telos, Shrewsbury, NJ	6251	529	2Q	515	2Q	540	2Q	Cont.	Cont.	
Engineering Support	MIPR	CECOM, Ft. Monmouth, NJ	4788	460	2Q	440	2Q	460	2Q	Cont.	Cont.	
Subtotal:			11039	989		955		1000		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Management	MIPR	PM Battle Command (BC), Ft. Monmouth, NJ	1040	232	2Q	245	2Q	255	2Q	Cont.	Cont.	
Test Support	MIPR	Titan, Ft. Sill, OK and various contractors	7446	906	2Q	850	2Q	775	2Q	Cont.	Cont.	
Limited User Test/Government	MIPR	Army Test & Evaluation	5266	1250	2-3Q	950	2-3Q	800	2-3Q	Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development				PE NUMBER AND TITLE 0203726A - Adv Field Artillery Tactical Data System						PROJECT 322		
Confidence Demo		Command (ATEC)										
Subtotal:			13752	2388		2045		1830		Cont.	Cont.	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PM Support	T&M	CSC, Eatontown, NJ	5145	470	2Q	477	2Q	505	2Q	Cont.	Cont.	
Program Management	MIPR	PM Battle Command (BC), Ft. Monmouth, NJ	9373	995	1-4Q	603	1-4Q	1080	1-4Q	Cont.	Cont.	
SBIR					1-4Q	432					432	
Subtotal:			14518	1465		1512		1585		Cont.	Cont.	

Project Total Cost:			269612	18848		16730		15860		Cont.	Cont.	
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Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
	Fielding - V6.4.0.1 /V6.4.0.2 (SWB 1) 07-09 Rotation (Out of Cycle)																											
Development V6.5 (SWB2) 08-10																												
(1) Materiel Release V6.5 (SWB2) 08-10																												
Fielding SWB 08 -10 Rotation																												
Development V6.6 (SWB2+) 09 -11																												
(2) Materiel Release V6.6 (SWB2+) 09-11																												
Fielding SWB 09-11 Rotation																												
Development V6.7 (SWB3) 10-12																												
(3) Materiel Release V6.7 (SWB3) 10-12 Rotation																												
Fielding SWB 10 -12 Rotation																												
Development V6.8 (SWB4) 11-13																												
(4) Materiel Release V6.8 (SWB4) 11-13																												
Fielding SWB 11-13 Rotation																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203726A - Adv Field Artillery Tactical Data System					PROJECT 322	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Fielding - V6.4.0.1 /V6.4.0.2 (SWB 1) 07-09 Rotation (Out of Cycle)	3Q - 4Q	1Q - 2Q						
Development V6.5 (SWB2) 08-10	1Q - 4Q							
Materiel Release V6.5 (SWB2) 08-10		2Q						
Fielding SWB 08 -10 Rotation		3Q - 4Q	1Q - 3Q					
Development V6.6 (SWB2+) 09 -11	1Q - 4Q	1Q						
Materiel Release V6.6 (SWB2+) 09-11			2Q					
Fielding SWB 09-11 Rotation			3Q - 4Q	1Q - 3Q				
Development V6.7 (SWB3) 10-12	4Q	1Q - 4Q	1Q					
Materiel Release V6.7 (SWB3) 10-12 Rotation				2Q				
Fielding SWB 10 -12 Rotation				3Q - 4Q	1Q - 3Q			
Development V6.8 (SWB4) 11-13			1Q - 4Q	1Q				
Materiel Release V6.8 (SWB4) 11-13					2Q			
Fielding SWB 11-13 Rotation					3Q - 4Q	1Q - 3Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE							
7 - Operational system development		0203735A - Combat Vehicle Improvement Programs							
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	13873	41192	141114	227194	344944	217001	171890	135000	1292208
330 ABRAMS TANK IMPROVE PROG	12130	35628	34696	49645	79532	72208	34581	135000	453420
371 BRADLEY BASE SUSTAIN	1743	5564	106418	177549	265412	144793	137309		838788

A. Mission Description and Budget Item Justification: This Program Element (PE) corrects vehicle deficiencies identified in Army operations; continues technical system upgrades to include the spin out of future combat systems technologies on ground systems; addresses needed evolutionary enhancements to tracked combat vehicles; and, develops technology improvements which have application to or insertion opportunities across multiple Ground Combat Systems vehicles. This PE provides combat effectiveness and Operating and Support (O&S) cost reduction enhancements for the Abrams tanks and Bradley Fighting Vehicles through a series of product improvements.

This project funds improvements to the Abrams Main Battle Tank (M1 series) and the Abrams Family of Vehicles (FOV). The Abrams mission is to provide necessary firepower, mobility, and survivability to overmatch all current and emerging enemy threats in achieving decisive dominant maneuver. The M1A2 SEP (current production model) refers to a System Enhancement Package, which upgraded the M1A2's computer systems and its night vision capabilities. Post SEP development efforts are focusing on improvements yielding significant life cycle cost reductions, survivability enhancements and spiral technologies. M1A2 SEP has virtually reached the upper limits for space, weight, and power. Future enhancements may require trade-offs in capabilities or re-architecting existing systems in order to add new capabilities. Spiral Development will leverage experience in an urban environment and Future Combat Systems (FCS) technologies to integrate them into current systems. This could include items such as Survivability Enhancements, Power Management, Interoperability/networking capabilities and lethality. The Abrams tank is expected to be in service through 2045. The Abrams tank must embark on a modernization effort in order to remain relevant, maintain threat overmatch capability, and be interoperable with FCS on the battlefield. The objective is to maintain Survivability, Combat Overmatch and reduce Operational and Support (O&S) costs.

The Bradley Fighting Vehicle System (BFVS) will provide the Heavy Brigade Combat Team (HBCT) with an improved capability to effectively fight in current and future environments. The BFVS redesign will meet the new Capability Development Document requirements which provide more combat over match through a combination of enhanced survivability, lethality, mobility and situational awareness subsystems. Improved survivability will leverage and build on lessons learned from Operation Iraqi Freedom to ensure 360 degree protection to current and future threats in both asymmetric and full spectrum warfare. Improved sensors and optics will enable the detection and identification of targets faster and at greater distances. Improved lethality will complement sensors and optics to enable the crew to engage targets faster with more precision at greater ranges. This provides the Bradley fleet the capability to complement the Abrams Tank in the HBCT and Future Combat Systems mission profiles. This also provides the HBCT commander with the necessary capabilities to employ the Bradley and Abrams in a combined arms approach as well as appropriate mounted and dismounted schemes of maneuver on current and future battlefields.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
7 - Operational system development	0203735A - Combat Vehicle Improvement Programs		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	14380	27615	6020
Current BES/President's Budget (FY 2009)	13873	41192	141114
Total Adjustments	-507	13577	135094
Congressional Program Reductions		-263	
Congressional Rescissions			
Congressional Increases		13840	
Reprogrammings	-102		
SBIR/STTR Transfer	-405		
Adjustments to Budget Years			135094
Change Summary Explanation: Funding - FY 2009: Funding increase in support of the Abrams Tank Improvement Program (+28,900) and the Bradley Base Sustain Program (+106,194).			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0203735A - Combat Vehicle Improvement Programs					PROJECT 330	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
330 ABRAMS TANK IMPROVE PROG	12130	35628	34696	49645	79532	72208	34581	135000	453420

A. Mission Description and Budget Item Justification: This project funds improvements to the Abrams Main Battle Tank (M1 series) and the Abrams Family of Vehicles (FOV). The Abrams mission is to provide necessary firepower, mobility, and survivability to overmatch all current and emerging enemy threats in achieving decisive dominant maneuver. The M1A2 SEP (current production model) refers to a System Enhancement Package, which upgraded the M1A2's computer systems and its night vision capabilities. Post SEP development efforts are focusing on improvements yielding significant life cycle cost reductions, survivability enhancements and spiral technologies. M1A2 SEP has virtually reached the upper limits for space, weight, and power. Future enhancements may require trade-offs in capabilities or re-architecting existing systems in order to add new capabilities. Spiral Development will leverage experience in an urban environment and Future Combat Systems (FCS) technologies to integrate them into current systems. This could include items such as Survivability Enhancements, Power Management, Interoperability/networking capabilities and lethality. The Abrams tank is expected to be in service through 2045. The Abrams tank must embark on a modernization effort in order to remain relevant, maintain threat overmatch capability, and be interoperable with FCS on the battlefield. The objective is to maintain Survivability, Combat Overmatch and reduce Operational and Support (O&S) costs.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Power Train Improvement & Integration Optimization Program (e.g., Total Integrated Engine Revitalization (TIGER), Transmission, Common Controller, Auxiliary Power Unit (APU), Common Power Management)		1500	
Improved Situational Awareness/Supportability/Survivability (e.g. Driver's Rear Facing Camera, 360 Situational Awareness (SA), Active Protection System (APS), OIF Survivability, Environmental Systems (TMS/NBC), Improved Diagnostics and Embedded Training).	7400	11516	6020
Improved Lethality (Profile Verification Program (PVP), Advanced Munitions Integration)	400	4100	1000
Advanced Technology Assessments and Insertion	3330	8015	24676
Testing	1000	1300	3000
Transmission Improvement Program (e.g.Electronic Controls for the Abrams X1100 Transmission)		3800	
Component Optimization for Ground Systems		1600	
GCS Open Architecture Electronic Enhancements (Engineering analysis and investigation in advanced electronic architecture technology opportunities for ground combat systems modernization)		2800	
Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)		997	
Total	12130	35628	34696

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
Abrams Upgrade Program (GA0750)	596351	225000	351179	351100	351430	332409	13308		2220777

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE							PROJECT	
7 - Operational system development	0203735A - Combat Vehicle Improvement Programs							330	
Abrams Vehicle Modification (GA0700)	828501	784997	341569	253231	334989	261041	25673	1993900	4823901
System Enhancement Pgm (GA0730)	1153637								1153637
M1A2 Tank Training Devices (GB1302)	809								809
Training Device Mod (GA5208)	895								4599
Initial Spares (GE0161)									3295

Comment:

C. Acquisition Strategy General Dynamics Land Systems Division (GDLS) is the prime contractor for the vehicle integration effort. General Dynamics is also a part of the Boeing and Raytheon Team contracted for the Active Protection System (APS).

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203735A - Combat Vehicle Improvement Programs							330		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Power Train Improvement & Integration Optimization Program (TIGER)	C-CPAF	Honeywell International Phoenix, AZ	24427								24427	191659
Common Power Management	TBD					1500	2Q				1500	
Forward Looking InfraRed (FLIR) integration into tank	SS-CPFF	General Dynamics Sterling Heights, MI	7000								7000	
Integration of improved engine into vehicle	SSCE	General Dynamics, Sterling Heights, MI	11459								11458	84786
Abrams Suspension Improvement Program (Track)	TBD	United Defense Limited Partnership, Anniston, AL	1933								1933	
Improved Situational Awareness/Supportability/Survivability	CPFF	General Dynamics, Sterling Heights, MI	10100	7400	2Q	11516	2Q	6020	2Q		35036	
Improved Lethality	MIPR	PM, MAS	830	400	2Q	4100	2Q	1000			6130	
Advance Technology Insertion	CPFF	General Dynamics, Sterling Heights, MI	4345	3330	2Q	8015	2Q	24676	2Q	189966	230332	
FLIR	FFP	Raytheon Company, Mc Kinney, TX	7521								7521	
DRS-Test & Energy Management	FP	Huntsville, AL	542								542	
Abrams M1A1 Vehicle Prognostics Development			10012								10012	
DRS - Tactical Systems		Palm Bay, FA	35								35	
Transmission Improvement Program		Allison Transmission, Indianapolis , IN				3800	2Q				3800	
Component Optimization for Ground Systems		Various				1600	3Q				1600	
GCS Open Architecture Electronic Enhancements		Curtiss Wright Roseland, NJ				2800	3Q				2800	
Small Business Innovative						997					997	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY				PE NUMBER AND TITLE							PROJECT		
7 - Operational system development				0203735A - Combat Vehicle Improvement Programs							330		
Research/Small Business Technology Transfer Program													
Subtotal:				78204	11130		34328		31696		189966	345123	276445
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
Engineering Support	MIPR	Various	3804								3804		
Subtotal:			3804								3804		
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
M1A1-FLIR	MIPR	Aberdeen Proving Ground, MD	1300								1300		
Track testing	MIPR	Yuma Proving Ground, AZ	1725								1725		
Improved Situational Awareness/Supportability/Survivability	MIPR	Aberdeen Proving Ground, MD	166								166		
Various sites	MIPR	Aberdeen Proving Ground, MD; Yuma Proving Ground, AZ; White Sands Missile Range, NM	3000	1000	2-4Q	1300	2-4Q				5300		
Advance Technology Insertion Testing		Aberdeen Proving Ground, MD; Yuma Proving Ground, AZ; White Sands Missile Range, NM						3000	2-4Q	46000	49000		
Subtotal:			6191	1000		1300		3000		46000	57491		

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203735A - Combat Vehicle Improvement Programs	PROJECT 330
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
Project Total Cost:			88199	12130		35628		34696		235966	406418	276445

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203735A - Combat Vehicle Improvement Programs

PROJECT
330

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
Common Power Management																												
Improved Situational Awareness																												
Active Protection System (APS)																												
Improved Lethality - Future Ammo Integration																												
Advanced Technology Assessments and Insertion																												
(1) SPINOUT 1 Safety Release, (2) SPIN OUT 1 Exercise									▲ 1 2																			
Requirements Decomposition																												
Initial Modeling & Simulation																												
Trade Studies																												
(3) Milestone B, (4) CDR																	▲ 3				▲ 4							
Prototype Vehicle Build																												
Development Test																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203735A - Combat Vehicle Improvement Programs					PROJECT 330	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Common Power Management		2Q - 4Q	1Q					
Improved Situational Awareness								
Active Protection System (APS)		2Q - 4Q	1Q - 4Q	1Q				
Improved Lethality - Future Ammo Integration		2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Advanced Technology Assessments and Insertion								
SPINOUT 1 Safety Release		1Q						
SPIN OUT 1 Exercise		1Q - 4Q						
Requirements Decomposition	3Q - 4Q	1Q - 3Q						
Initial Modeling & Simulation	2Q - 4Q	1Q - 4Q	1Q - 4Q					
Trade Studies	2Q - 4Q	1Q - 4Q	1Q - 4Q					
Milestone B				1Q				
CDR					2Q			
Prototype Vehicle Build					3Q - 4Q	1Q - 4Q	1Q - 2Q	
Development Test						1Q - 4Q	1Q - 4Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203735A - Combat Vehicle Improvement Programs						PROJECT 371	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
371 BRADLEY BASE SUSTAIN	1743	5564	106418	177549	265412	144793	137309		838788

A. Mission Description and Budget Item Justification: The Bradley Fighting Vehicle System (BFVS) will provide the Heavy Brigade Combat Team (HBCT) with an improved capability to effectively fight in current and future environments. The BFVS redesign will meet the new Capability Development Document requirements which provide more combat over match through a combination of enhanced survivability, lethality, mobility and situational awareness subsystems. Improved survivability will leverage and build on lessons learned from Operation Iraqi Freedom to ensure 360 degree protection to current and future threats in both asymmetric and full spectrum warfare. Improved sensors and optics will enable the detection and identification of targets faster and at greater distances. Improved lethality will complement sensors and optics to enable the crew to engage targets faster with more precision at greater ranges. This provides the Bradley fleet the capability to complement the Abrams Tank in the HBCT and Future Combat Systems mission profiles. This also provides the HBCT commander with the necessary capabilities to employ the Bradley and Abrams in a combined arms approach as well as appropriate mounted and dismounted schemes of maneuver on current and future battlefields.

Accomplishments/Planned Program:	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Electronic System Modeling, electronics modeling framework capable of executing a system model of the entire Bradley electronics.	1743	1408	
Vehicle Health Management System Development		4000	
Bradley A3 Version 2 - Improved capability, increased protection, survivability, lethality, mobility and improved situational awareness			101414
Program Management Support			5004
Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)		156	
Total	1743	5564	106418

B. Other Program Funding Summary	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
G80718 Bradley Program	2080047	839466	171989	144813	162470	7426	8120	Continuing	Continuing
GZ2400 Bradley Program (MOD)	201736	85357	311925	323790	393734	351581	12607	Continuing	Continuing
GZ2500 Bradley Training Devices (MOD)	4363	4652	4386					Continuing	Continuing

Comment:

C. Acquisition Strategy The Acquisition Strategy for the Bradley A3 Version 2 Program plans to award a Sole Source Contract to BAE Systems, the Original Equipment

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0203735A - Combat Vehicle Improvement Programs

PROJECT

371

Manufacturer (OEM) for the Bradley Fighting Vehicle for research, development and system integration of the Bradley Fighting Vehicle. The type of contract awarded would be a Cost Reimbursement/Cost Plus Incentive Fee. The award date anticipated is February 2009.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203735A - Combat Vehicle Improvement Programs							371		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Bradley A3 Version 2	SS/CPIF	BAE, San Jose, CA	64919					101414	2Q	636684	803017	
Electronic System Modeling	CPIF	BAE, San Jose, CA		1743	2Q	1408	2Q				3151	
Vehicle Health Management	CPIF	BAE, San Jose, CA				4000	2Q				4000	
Small Business Innovative Research/Small Business Technology Transfer Program						156					156	
Subtotal:			64919	1743		5564		101414		636684	810324	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PMO	MIPR	PMO, Warren, MI	8478					5004	1Q	46200	51204	
Subtotal:			8478					5004		46200	51204	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Bradley A3 Version 2	MIPR	Army Test Center (Aberdeen and Yuma test sites)								47200	47200	
Subtotal:										47200	47200	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0203735A - Combat Vehicle Improvement Programs						PROJECT 371		
	Type				Date		Date		Date		Contract
Subtotal:											

Project Total Cost:		73397	1743		5564		106418		730084	908728	
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Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203735A - Combat Vehicle Improvement Programs

PROJECT
371

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
Bradley A3 Version 2	[Redacted]																											
Electrical Power Upgrade	[Redacted]																											
Common Modular Power System	[Redacted]																											
Engineering Vehicle Mission Equipment Package	[Redacted]																											
Active Protective System	[Redacted]																											

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203735A - Combat Vehicle Improvement Programs					PROJECT 371	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Bradley A3 Version 2			2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Electrical Power Upgrade			2Q - 4Q	1Q				
Common Modular Power System			2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q		
Engineering Vehicle Mission Equipment Package				2Q - 4Q	1Q			
Active Protective System			2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203740A - Maneuver Control System						PROJECT 484	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
484	33947	45191	37151	13083	5970	7785	8376		151503

A. Mission Description and Budget Item Justification: Tactical Battle Command (TBC) provides a suite of products and services that provide commanders and staffs executive decision making in a collaborative environment, planning tools, and common operational picture management and other maneuver functional tools. TBC satisfies capabilities identified in the MC GE ORD and MCS 6.4 CPD which includes Army migration to DD net-centric environment. The overarching capability includes a user-defined Common Operational Picture (COP) with integrated Command and Control (C2) and Situational Awareness (SA), map-centric collaboration, Army Battle Command System (ABCS) and other enabling system interoperability, data management, and enterprise services that include e-mail, active directory, security, data backup and failover capabilities. The suite of products include the Maneuver Control System (MCS), Battalion and Above Joint Convergence with the Marine Corps, Command Post of the Future (CPOF), Tactical Web Portal for Knowledge management, and Battle Command Common Services (BCCS) that provides the consolidate server and services infrastructure for systems supporting Army Battle Command from Battalion to Army Component Command. TBC products and services are compliant with the joint technical architecture.

FY09 funding will provide for the development of the products and services that will satisfy the Tactical Battle Command capability requirements, while migrating to a service oriented architecture supporting the Army Battle Command Migration Plan. Funding also provides for the development of Battle Command Common Services (BCCS) enabling infrastructure for tactical Battle Command within Army Software Blocking timelines, satisfying net-ready requirements.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
MCS software development to enhance Interoperability, Usability, and Functionality	6726	5303	1150
Joint Convergence Engineering and Development	8797	17404	17201
CPOF Development	17149	17600	15000
Battle Command Common Services Development	1275	3697	3800
Small Business Innovative Research/Small Business Technology Transfer Programs		1187	
Total	33947	45191	37151

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203740A - Maneuver Control System	PROJECT 484
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<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	34590	43961	28166
Current BES/President's Budget (FY 2009)	33947	45191	37151
Total Adjustments	-643	1230	8985
Congressional Program Reductions		-370	
Congressional Rescissions			
Congressional Increases		1600	
Reprogrammings	254		
SBIR/STTR Transfer	-897		
Adjustments to Budget Years			8985

Change Summary Explanation:

FY08: \$1.6m Congressional Add

FY09: \$8.985 million funding was provided for the development associated with implementation of the Battle Command Migration plan.

<u>C. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
BA9320 - Maneuver Control System (MCS)	133057	121661	123009	95453	103001	74066	71359	Continuing	Continuing
BS9710 - MCS Spares	1707	1509	1357			1549	1559	Continuing	Continuing
BE4162 - MACOM Automation Systems						372		Continuing	Continuing

Comment:

D. Acquisition Strategy The Acquisition Strategy is based on modular development of application software, integrated with the common system software, hosted on commercial off-the-shelf computers and peripheral hardware. Software will be developed, tested, integrated and trained as necessary to meet warfighter tactical and training requirements. Upon completion of the base capability that is being fielded, development will continue for Joint Interoperability, Common Operating Environment and Safety requirements as necessary to continue the life of the software in the field. The current software development effort is developing products and services in a net centric environment.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203740A - Maneuver Control System							484		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
MCS Software Development	C/CPAF	Lockheed Martin Corp., Tinton Falls, NJ	184627								184627	178467
Misc Contracts	Various	Various	16981	1958	1Q	2115	1Q	1650	1Q	Cont.	Cont.	
CPOF Development	MIPR	DARPA	16237								16237	
CPOF Development		General Dynamics	5534	13689	1Q	12000	1Q	12000	1Q	Cont.	Cont.	
Software Development & Technical Support	MIPR	CECOM Software Engineering Center, NJ	32108	3167	1-2Q	5750	1-2Q	5750	1-2Q	Cont.	Cont.	
MCS, Joint Convergence, and BCCS System Engineering & Development	C/CPAF	Lockheed Martin Corp., Tinton Falls, NJ	13815	6423	1-4Q	4178	1-3Q			Cont.	Cont.	
ABCS SoS Contract	TBD	TBD				9378	2-4Q	9681	1-4Q	Cont.	Cont.	
Technical Support	In House	PM Battle Command, NJ	16299	2830	1-4Q	2972	1-4Q	2400	1-4Q	Cont.	Cont.	
PSE H/W & S/W	Various	Various	2575	200	2Q	200	2Q			Cont.	Cont.	
MITRE System Engineering		MITRE Corp., Eatontown, NJ	10596	1062	1Q	1147	1Q	1239	1Q	Cont.	Cont.	
ABCS SE&I	MIPR	PEO C3T, NJ	1830								1830	
SBIR/STTR						1187	2Q				1187	
Subtotal:			300602	29329		38927		32720		Cont.	Cont.	178467
II. Support Costs												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Misc Support	In House	PM Battle Command, NJ	4354	550	1-4Q	578	1-4Q	607	1-4Q	Cont.	Cont.	
Misc Contracts	Various	Various	2328	475	1-2Q	513	1-2Q	460	1-2Q	Cont.	Cont.	
Subtotal:			6682	1025		1091		1067		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203740A - Maneuver Control System	PROJECT 484
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III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
OGA	MIPR	Various	4100	267	1-2Q	280	1-2Q	240	1-2Q	Cont.	Cont.	
Misc Contracts	Various	Various	5001	250	1-2Q	270	1-2Q	230	1-2Q	Cont.	Cont.	
Test Planning/Conduct	MIPR	Various	20052	1721	1-3Q	3200	1-3Q	1400	1-2Q	Cont.	Cont.	
Subtotal:			29153	2238		3750		1870		Cont.	Cont.	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Office Mgmt	In House	PM Battle Command, NJ	3443	1355	1-4Q	1423	1-4Q	1494	1-4Q	Cont.	Cont.	
Subtotal:			3443	1355		1423		1494		Cont.	Cont.	

Project Total Cost:	339880	33947		45191		37151		Cont.	Cont.	178467
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Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
	S/W Development, Integration and COE/Interoperability Upgrades for MCS/CPOF/BCCS																											
S/W Development	[Red Grid]																											
Fielding	[Red Grid]																											
CTSF Integration Testing/Interop Certification of TBC Suite (MCS/CPOF/BCCS)	[Red Grid]																											
(1) CPOF Development Contract Award	[Red Grid]																											
Server Consolidation/Common Services Development	[Red Grid]																											
Evolving Software Upgrades (e.g., joint interoperability, COE compliance, etc.)	[Red Grid]																											
Field Test	[Red Grid]																											
Operational Evaluation	[Red Grid]																											

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203740A - Maneuver Control System					PROJECT 484	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
S/W Development	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Fielding	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
CTSF Integration Testing/Interop Certification of TBC Suite (MCS/CPOF/BCCS)	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
CPOF Development Contract Award	3Q							
Server Consolidation/Common Services Development	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Evolving Software Upgrades (e.g., joint interoperability, COE compliance, etc.)	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Field Test		3Q						
Operational Evaluation			3Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE							
7 - Operational system development		0203744A - Aircraft Modifications/Product Improvement Programs							
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	299405	328514	452787	428195	514030	416410	417621	Continuing	Continuing
028 Aerial Common Sensor (ACS) (MIP)	22561	12874	171526	247726	352075	289440	319707	Continuing	Continuing
430 IMPR CARGO HELICOPTER	28967	21038	9907	10975	11173				82060
504 BLACK HAWK RECAPITALIZATION/MODERNIZATION	122976	95654	33910	35245	40634	44442	44463	Continuing	Continuing
D12 LONGBOW APACHE OPERATIONAL SYSTEMS DEVELOP	641		36066						36707
D17 APACHE BLOCK III	118863	192453	198361	134249	110148	82528	53451	Continuing	Continuing
D18 UTILITY FW CARGO AIRCRAFT	5397	6495	3017						14909

A. Mission Description and Budget Item Justification: This PE provides for development of modifications and improvements for the Guardrail Common Sensor/Aerial Common Sensor, the Improved Cargo Helicopter (ICH), the UH-60A/L Black Hawk Recapitalization/Modernization.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
7 - Operational system development	0203744A - Aircraft Modifications/Product Improvement Programs		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	303491	325643	417911
Current BES/President's Budget (FY 2009)	299405	328514	452787
Total Adjustments	-4086	2871	34876
Congressional Program Reductions		-17012	
Congressional Rescissions		-117	
Congressional Increases		20000	
Reprogrammings			
SBIR/STTR Transfer	-4086		
Adjustments to Budget Years			34876

FY08: \$15 million reduction to Project 028 (ACS lack of Acquisition Strategy); \$10 million increase to Project 430 (HUMS); \$8.4 million increase to Project 504 (HALS, MEDEVAC, Aircraft Component Remediation)
 FY09: \$34.8 million increase to Project D12 in support of Composite Main Rotor Blade(CMRB), Apache Training Devices NRE and the Light Weight Missile Launcher efforts.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs						PROJECT 028	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
028 Aerial Common Sensor (ACS) (MIP)	22561	12874	171526	247726	352075	289440	319707	Continuing	Continuing

A. Mission Description and Budget Item Justification: (U) Aerial Common Sensor (ACS) is an Airborne Reconnaissance, Surveillance and Target Acquisition (RSTA)/Intelligence, Surveillance, and Reconnaissance (ISR) capability directly supporting Battlespace Awareness for tactical commanders. Specifically, ACS will provide real-time, persistent, precision, networked, wide-area, high-capacity, multi-sensor intelligence collection capability throughout the joint battlespace. ACS will quickly produce actionable intelligence that provides commanders and soldiers critical shared situational understanding delivered with the speed, accuracy, and timeliness necessary to conduct successful and when necessary, lethal joint operations. ACS will support focused Intelligence Preparation of the Battlespace (IPB), Indications and Warnings (I&W), precision targeting, battle damage assessment (BDA), Situational Development, battle command, and Force Protection. Each of these will be synchronized with operations in order to develop and maintain situational awareness and reduce clutter in the maneuver environment. ACS will be a manned, high performance fixed-wing aircraft capable of rapid worldwide deployment carrying multiple sensor payloads and intelligence processing, appropriate air/ground/satellite data links, and air crew (i.e., pilots and intelligence systems operations). The RSTA/ISR payload will consist of a suite of modular, scaleable Signals Intelligence (SIGINT), Imagery Intelligence (IMINT) and Measurement and Signature Intelligence (MASINT) sensors and processors that can operate alone or simultaneously in combination with each other (e.g., automated cross-cueing). The intelligence processing suite onboard ACS and in the ground station, provided by the Distributed Common Ground System-Army (DCGS-A), will integrate the products from all ACS Sensor payloads as well as the sensor feeds from other joint force sensors, including manned/unmanned (MUM) teaming with Army Unmanned Aircraft Systems (UAS), to provide a correlated near-real-time picture of the tactical operational environment with the greatest degree of granularity possible. Onboard communications will consist of a robust set of line-of-sight (LOS) and satellite communications (SATCOM) datalinks that will enable direct linkage to Brigade Combat Teams, Manned-Unmanned teaming with Army UAS, wideband/worldwide connectivity to DCGS and the Global Information Grid, and interoperability with other Army, Joint and National RSTA/ISR assets. ACS will be a critical and integral component of the future force.

The National Security Agency's Military Intelligence Program (MIP) provides funding to support enhanced SIGINT capabilities.

FY09 funds support completion of source selection activities, ASARC/DAB process, start of SDD contract management and ACAT I reporting.

FY 2007 funding total includes no funding received in GWOT supplemental.
 FY 2008 funding total includes no funding received in the Bridge Supplemental.
 FY 2008 funding totals do not include any previously requested funding for current FY 2008 GWOT requirements, and no FY 2008 GWOT funds have been previously requested in the RDTE Project of 028.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Modeling, Program Office, Matrix Engineering and Test support for the AC Sensors	7561		
AoA Study, Payload & Platform Integration Studies, CONOPS studies and Analysis, SWAP-C Analysis	2427		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs			PROJECT 028
Modern Signal, Sensor prototype, COMINT Subsystem Development, Datalink Risk Reduction, CHALS-C	12573	2187		
Mission Thread Analysis, Systems Integration Analysis		1600		
Program Office, Matrix Engineering and Test support for the AC Sensors, Payload RFI/SDD RFP/Source Selection activities/MS B Documentation, ASARC/DAB preparation		9087		
Program Office, Matrix Engineering and Test support for the AC Sensors, completion of Source Selection activities, MS B Documentation/ASARC/DAB, SDD contract management, ACAT I reporting				13816
SDD Contract				157710
Total	22561	12874		171526

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
ACS NSA MIP	3674	3779	3921	3978	6897	7170	7337	Continuing	Continuing
CHALS NSA MIP	1460	4071	4169	4146	4094	4182	4234	Continuing	Continuing
GRCS NSA MIP	5645	6588	6713	6709	3741	3787	3795	Continuing	Continuing
ARL NSA MIP		3744	3817	3817	3743	3743	3743	Continuing	Continuing
TSP NSA MIP	4119	6739	6904	6863	6779	6926	7011	Continuing	Continuing

Comment: FY09 Military Intelligence Program (MIP) funding provides for the development of ACS SIGINT technologies needed to ensure applicability of ACS in the evolving future force architecture and Guardrail Modernization Capabilities Growth Study.

C. Acquisition Strategy Upon formal Joint Requirements Oversight Council (JROC) concurrence and milestone B approval by the Defense Acquisition Executive (DAE), the Aerial Common Sensor (ACS) development program will be accomplished on an incremental basis. A competitive system development & demonstration (SDD) contract for Increment I capability will be awarded in FY09. As the development program evolves, future competitive opportunities will be assessed.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs								028	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Multi-Role-Tactical Command Data Link Development	SS-CPAF	L-3 Communications, Salt Lake City, UT	6791	2468	2-3Q	587	3Q				9846	4590
CHALS Enhancement Development	SS-CPFF	Lockheed Martin, Owego, NY	6176	1711	1Q						7887	
Modern Signals Sensor Prototype	SS-CPFF	Radix, Mountain View, CA	3691	5119	1-4Q	1600	2-3Q				10410	
Development/Enhanced Situational Awareness	C-CPFF	Northrop Grumman, Sunnyvale, CA	8000	2289	1Q						10289	
Sentinel UAV Phase II (ARL)				986	1-3Q						986	
SDD contract	TBD	TBD						157710	3Q		157710	
Subtotal:			24658	12573		2187		157710			197128	4590
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Aircraft, ISR and Integration Validation Studies	Gov/KR; TBD	TBD	1709	1258	2Q						2967	
Thread Analysis for ACS Design CONOPS; Systems Integration Analysis	IDA/Mitre			1169	1-3Q	1600	2Q				2769	
Subtotal:			1709	2427		1600					5736	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Support	MIPR/CPFF	Gov't/Kr Various	3132	163	1Q	328	1-2Q	1500	1-2Q	Cont.	Cont.	Cont.



ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							028		
Subtotal:			3132	163		328		1500		Cont.	Cont.	Cont.
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PMO Staff/travel/O/H expenses	In-House	PM, AC Sensors	21511	2144	1-4Q	1180	1-4Q	2500	1-4Q	Cont.	Cont.	Cont.
Program Seta Support	C-T&M	CACI/TBD NJ/DC/TBD	8634	1157	1-2Q	907	1-2Q	1640	1-2Q		12338	Cont.
Engineering Seta Support	C-T&M	ILEX, Tinton Falls, NJ	1875	1000	1-2Q	971	1-2Q	1200	1-2Q	Cont.	Cont.	Cont.
Seta Mgmt Support	Kr; Various	Multiple	7498	851	1-3Q	1019	1-3Q	1447	1-3Q	Cont.	Cont.	Cont.
Matrix Support	CPFF	BAH, Eatontown, NJ	10902	921	1-2Q	862	1-2Q	1709	1-2Q	Cont.	Cont.	Cont.
Matrix Support	MIPR	CRDEC/I2WD, Ft Monmouth, NJ	4052	808	1-3Q	921	1-2Q	1885	1-2Q	Cont.	Cont.	Cont.
Matrix Support	MIPR/CPFF	Gov't; Various	2348	517	1-2Q	2899	1-2Q	1935	1-2Q		7699	
Subtotal:			56820	7398		8759		12316		Cont.	Cont.	Cont.
Project Total Cost:			86319	22561		12874		171526		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
	CDD Development and Approval																											
Path Forward Analysis/Dev Acq Strategy																												
(1) Path Forward Decision					 Decision																							
Milestone Preparation Activities																												
RFP Process and Source Selection																												
(2) ACS Milestone B Decision									 MS Decision																			
ACS Development Contract																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs					PROJECT 028	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
CDD Development and Approval	1Q - 4Q	1Q - 3Q						
Path Forward Analysis/Dev Acq Strategy	1Q - 4Q	1Q - 3Q						
Path Forward Decision	4Q							
Milestone Preparation Activities	2Q - 4Q	1Q - 4Q	1Q - 2Q					
RFP Process and Source Selection		1Q - 4Q	1Q - 2Q					
ACS Milestone B Decision			2Q					
ACS Development Contract			2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
ACS Contract Termination and Closeout	1Q - 4Q	1Q - 2Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs					PROJECT 430			
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost	
430 IMPR CARGO HELICOPTER	28967	21038	9907	10975	11173				82060	

A. Mission Description and Budget Item Justification: The CH-47 Chinook is a twin-turbine, tandem-rotor, heavy-lift transport helicopter with a useful load of up to 25,000 pounds. As the Army's only heavy lift helicopter, the CH-47F Improved Cargo Helicopter is an essential component of the Army Future Force. The CH-47F program fills the Army's Aviation Transformation Chinook requirement. Key product improvements integrate the CH-47F Common Avionics Architecture System (CAAS) digital cockpit which will provide future growth potential to meet the Net-Ready Key Performance Parameters (KPPs) and also includes a digital data bus that permits installation of enhanced communication and navigation equipment for improved situational awareness, mission performance, and survivability. The CH-47 program funds completion of the Independent Operational Test and Evaluation program, developmental improvements to the T55-GA-714A engines which includes a redesigned N1 Drive Train and Composite Inlet Housing, and the Airframe Component Improvement Program that includes development of new Rotor Blades that will result in significant performance improvement for the Chinook such as gaining an additional 1000 lbs of lift, improving erosion protection, and reducing retreating blade stall. The Health and Usage Monitoring System (HUMS) incorporated onboard the Chinook aircraft will collect timely and accurate diagnostic data which will be used to enhance fleet management. The Cargo Condition Based Maintenance (CBM) effort will provide near real time accurate aviation maintenance and component performance data for fleet management; provide logistical and engineering data to Army support organizations at a level of detail previously unavailable; exercise CBM technologies and processes in the context of a single Platform Maintenance Application and emerging Army maintenance doctrine; and reduce risk for integration on the CH-47F by providing out key system and process element/performance specification enabling timely insertion of HUMS/CBM technology.

FY 2007 funding total includes no funding received in GWOT supplemental.

FY 2008 funding total includes no funding received in the Bridge Supplemental.

FY 2008 funding totals do not include any previously requested funding for current FY 2008 GWOT requirements, and no FY 2008 GWOT funds have been previously requested in the RDTE Project of 430.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Operational Test & Evaluation	1536		
Continue in-house and Program Management Administration	515	842	489
714 Engine Component Improvement Program	6041	4279	3955
Airframe Component Improvement Program	3861	5328	5463
Health and Usage Monitoring (HUMS)	16200	10000	
Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)	814	589	
Total	28967	21038	9907

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs					PROJECT 430			
<u>B. Other Program Funding Summary</u>			FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
APA, SSN AA0252, CH-47 CARGO HELICOPTER MODS (MYP) (Including Adv Proc and Initial Spares)			1310791	912049	726218	698834	911570	1212077	702564	6622220	13096323
APA, SSN A05008, CH-47 CARGO HELICOPTER NEW BUILD (Including Adv Proc)				189600	443519	215850	211558	138572	153510	155000	1507609

Comment:

C. Acquisition Strategy The CH-47F rebuild program extends the service life by twenty years, incorporates a new machined airframe, and includes a new Common Avionics Architecture System (CAAS) cockpit with digital communication/navigation capability allowing improved interoperability on the digital battlefield. The CH-47F rebuild program includes recapitalization of key dynamic components, bringing them to a near zero time.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							430		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
EMD	CPIF	Various	117221								117221	117098
TOCR	CPIF	Various	1600								1600	1600
Low Maintenance Rotor Hub	CPIF	Boeing	7685								7685	
SBIR/STTR				814	1Q	589	1Q				1403	
Technical Support	CPFF	Various	8408								8408	
714 Engine Component Improvement Program	CPFF	Various	10134	6041	2Q	4279	1-2Q	3955	1-2Q		24409	
Airframe Component Improvement Program				3861	2-4Q	5328	2Q	5463	2Q		14652	
Health and Usage Monitoring (HUMS)			23400	16200	3-4Q	10000	3-4Q				49600	
Subtotal:			168448	26916		20196		9418			224978	118698
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PMO/OGA	Reimbursable	Various government	13507	515	2-3Q	842	2-3Q	489	2-3Q		15353	
Subtotal:			13507	515		842		489			15353	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
DT/OT	Reimbursable	Various government	18971	1536	1-2Q						20507	
Live Fire Test & Eval	Reimbursable	Contract/Govt	6365								6365	
Live Fire Test & Eval	Contract		50								50	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs								PROJECT 430	
Test Analysis	Reimbursable	Various Government	1500								1500	
Subtotal:			26886	1536							28422	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CAMBER/Westar	SS/FP	Huntsville, AL	3901								3901	3901
Subtotal:			3901								3901	3901

Project Total Cost:			212742	28967		21038		9907			272654	122599
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Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Programs PROJECT
430

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
Full Rate Production	Full Rate Production																											
IOT&E Phase II																												
(1) FUE																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs					PROJECT 430	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Long Lead (Lot 1)								
LRIP Decision								
LRIP Lot 1 Contract Award								
Low Rate Initial Production								
LRIP Lot 2 RFP								
LRIP Lot #2 Contract Award								
Full Rate Production RFP								
IOT&E Phase I								
MS III/FRP								
Full Rate Production	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
IOT&E Phase II	1Q - 3Q							
FUE	4Q							
Milestone III								
Full Rate Pdn								
Initial Oper Test & Eval (IOT&E) Phase II								

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs						PROJECT 504	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
504 BLACK HAWK RECAPITALIZATION/MODERNIZATION	122976	95654	33910	35245	40634	44442	44463	Continuing	Continuing

A. Mission Description and Budget Item Justification: The UH-60 BLACK HAWK will serve as the Army's utility helicopter in the Future Force. It is used for air assault, general support, aeromedical evacuation (MEDEVAC), and command and control in active and reserve component theater, corps, division, and Table of Distribution and Allowances (TDA) units. The UH-60A entered service in fiscal year 1978 (FY78), and the newer model UH-60L in FY89. The Army's last procurement of UH-60L helicopters was FY06. The Army has established a recapitalization goal for its systems of maintaining the fleet's average age at the design half-life or less. The UH-60 was designed for a 20 year service life. The oldest UH-60As are now over 25 years old, and the average age of the UH-60A fleet is 21 years old. The increased operational tempo, coupled with the technological age of the basic airframe, components, and systems, is having an adverse impact on the operational readiness (OR) and operating and support (O&S) costs of the over 1500 aircraft UH-60 fleet. In addition, the UH-60A/L helicopters lack the necessary digital avionics architecture to meet current and future Army and Joint Service interoperability communication requirements. The Army has determined that an upgrade program is required to address these issues. An Operational Requirements Document (ORD) for recapitalization of the BLACK HAWK fleet was approved by the Joint Requirements Oversight Council (JROC) in March, 2001. The ORD describes an evolutionary, block approach to transform the utility helicopter force to one that is more deployable, responsive, and less expensive to operate. A revised ORD was signed by the JROC on July 24, 2006 updating key performance parameters for survivability and force protection. The UH-60M provides a common platform for the modernized air ambulance MEDEVAC mission equipment package (MEP). RDTE funds are required to develop, integrate, test and qualify the UH-60M configuration. FY05 funded the initial efforts to move the UH-60M program to an Upgrade configuration which includes the Fly By Wire (FBW), Composite Tailcone, Full Authority Digital Engine Control (FADEC) and the Common Avionics Architecture System (CAAS), which is the common cockpit to be used by UH-60M, CH-47 and Special Operations. Incorporation of CAAS will minimize the future sustainment costs for these aircraft platforms. A successful UH-60M Upgrade IPR decision was obtained in January 2006. On May 18, 2007, the Office of the Secretary of Defense (OSD) Overarching Integrated Product Team (OIPT) report recommended approval for the UH-60M program to enter Full Rate Production (FRP) and approved the Army request for advanced procurement for seven UH-60M Upgrade aircraft and recommended a paper Defense Acquisition Board (DAB). On June 26, 2007 the Black Hawk Full Rate Production (FRP) Acquisition Decision Memorandum (ADM) was signed. This newly approved ADM authorizes entry into FRP for the Black Hawk Upgrade Program to include both the UH-60M and HH-60M baseline aircraft. The ADM also provides for FY08 advanced procurement for long lead items to support the initial cut-in aircraft for the UH/HH-60M Upgrade effort.

FY07 Funds the continuation of the Upgrade program. FY07 includes funds for the Full Authority Digital Engine Control (FADEC) Development.

FY08 include the on-going FADEC Development program and continues efforts for the development and test of the UH-60M Upgrade aircraft.

FY09 - FY10 Funds on-going development of the FADEC program and continues efforts for the development and test of the UH-60M Upgrade aircraft.

FY11 and out funds the Improved Turbine Engine Program (ITEP) development and qualification.

FY 2007 funding total includes no funding received in GWOT supplemental.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs	PROJECT 504
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FY 2008 funding total includes no funding received in the McConnell Amendment.
 FY 2008 funding totals do not include any previously requested funding for current FY 2008 GWOT requirements, and no FY 2008 GWOT funds have been previously requested in the RDTE Project of 504.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Continue airframe, avionics and powerplant development based on finalized configuration as a result of airframe CDR. Conduct System Preliminary Design Review and Critical Design Review.	40372	24668	14072
Software Development - includes failure modes and effects criticality analysis; software design descriptions; qualification testing of mission critical computer resources; update software requirements specifications and multiplex interface control documents; and prepare software design descriptions.	31287	17080	3312
Continue Producibility Engineering and Planning (PEP) as well as manufacturing planning and control.	7840	4752	1554
Prototype build and delivery to support Development Testing (DT).	4364	3454	3390
Testing (Conduct flight testing, EME testing and ground testing).	28071	21712	7267
Preparation of training documentation for Logistics Demonstration Familiarization Course, Government Test Pilot Familiarization Course and Test Data Collection Training Course.	943	3169	841
Conduct training course to support test.	934		1029
Maintain Continuous Acquisition and Life Cycle Support (CALs)/Contractor Integrated Technical Information Service (CITIS) and deliver Interface Control Documents (ICD's).	712	807	330
Support Equipment	333	144	141
Full Authority Digital Engine Control (FADEC)	8120	8791	1974
Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR)		2677	
Operator Situational Awareness System - MEDEVAC		2000	
Helicopter Autonomous Landing System (HALS)		4000	
Aircraft Component Remediation		2400	
Total	122976	95654	33910

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
A05002 BLACK HAWK (MYP)	1271931	1364796	1063027	1230556	951480	1058266	1154394	Continuing	Continuing

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

7 - Operational system development

0203744A - Aircraft Modifications/Product Improvement Programs

504

C. Acquisition Strategy The UH-60 BLACK HAWK will serve as the Army's utility helicopter in the Future Force. The Army revised the acquisition strategy for the UH-60M to procure new UH-60M helicopters in lieu of Recap/Upgrade. This program addresses current UH-60 fleet aging problems such as decreasing operational readiness (OR) and increasing O&S costs, including all top-ten cost drivers, and provides a common, modernized platform for the UH-60 utility and MEDEVAC fleet of the future. The program will be executed over four phases: pre-System Development/Demonstration Phase (FY00-01), System Development/Demonstration Phase (Baseline FY01-07) (Upgrade FY05-10), Production/Readiness Phase (FY05-25), and Operations and Sustainment Phase (FY06-FY44).

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							504		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Design, Integration & Qualification Contract	SS/CPAF	Sikorsky Aircraft Co 6900 Main Street Stratford, CT 06601	362752	1463	1-2Q						364215	
UH-60M Upgrade Pre-Planned Product Improvement Contract	SS/CPAF	Sikorsky Aircraft Co 6900 Main Street Stratford, CT 06601	85956	92112	1-2Q	68967	1-2Q	23794	1-2Q	11267	282096	
Development Support - Organic	MIPR	UH PMO/matrix	19681	1832	1-3Q	529	1-3Q	921	1-3Q	324	23287	
Development Support - Contractor	C/FP	Support Contractors	13679	2060	1-3Q	1586	1-3Q	1475	1-3Q	972	19772	
IMD-HUMS Development Support - Organic	MIPR	Aviation Applied Tech Directorate (AATD) Matrix	6953								6953	
IMD-HUMS Development Support - Contractor	C/FP	Goodrich, 100 Panton Road, Vergennes, Vermont 05491	46862								46862	
MAST Development Support - Organic	MIPR'S	Other Government Agency Support	1429								1429	
MAST Development Support - Contractor	MIPR	Smith Industries Clear Water , FLI	5708								5708	
Full Authority Digital Engine Control (FADEC) Development - Organic				922	1-2Q	998	1-2Q	224	1-2Q	1709	3853	
Full Authority Digital Engine Control (FADEC) Development - Contractor				7198	1-2Q	7793	1-2Q	1750	1-2Q	13212	29953	
Internal Reprogramming - Payback for FY03			3413								3413	
HALS			8675			4000	2-4Q				12675	
Performance Support System - NG (Apache)	MIPR	Other Government Agency Support	1000								1000	
Transfer to Apache			3000								3000	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							504		
Improved Turbine Engine Program (ITEP) Engine Development and Qualification	C	TBD								130414	130414	
Operator Situational Awareness System - MEDEVAC						2000	2-4Q					2000
Aircraft Component Remediation						2400	2-4Q					2400
Subtotal:			559108	105587		88273		28164		157898	939030	

Remarks: IMD-HUMS demonstration program was funded in FY02-05 and is separate from the UH-60M program.
 MAST demonstration program was funded in FY04 and FY05 and is separate from the UH-60M and the HUMS programs.

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Cost Analysis Support	MIPR	AMCOM Matrix	721	77	1-3Q	78	1-3Q	80	1-3Q	81	1037	
Logistics Analysis Support - Organic	MIPR	AMCOM Matrix	829	640	1-3Q	423	1-3Q	393	1-3Q	259	2544	
Logistics Analysis Support - Support Contractor	MIPR	Support Contractor	968	640	1-3Q	352	1-3Q	327	1-3Q	216	2503	
Subtotal:			2518	1357		853		800		556	6084	

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Planning, Test and Evaluation	MIPR	Various Activities	19326	12508	1-3Q	1829	1-3Q	3060	1-3Q	4967	41690	
Test Planning, Test and Evaluation	MIPR	Various Activities	382	230	1-3Q	134	1-3Q	137	1-3Q	239	1122	
Subtotal:			19708	12738		1963		3197		5206	42812	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT	
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							504	
	Type				Date		Date		Date		Contract
PM Support - Organic	MIPR	UH PMO/matrix	7051	1869	1-4Q	1139	1-4Q	1052	1-4Q	665	11776
PM Support - Contract	C/FP	O2K Contractor	3422	1425	1-3Q	749	1-4Q	697	1-3Q	459	6752
SIBR/STTR			4383			2677	1-4Q				7060
Subtotal:			14856	3294		4565		1749		1124	25588
Project Total Cost:			596190	122976		95654		33910		164784	1013514

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Programs PROJECT
504

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13																															
	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																												
UH-60M Program																																																								
(1) FRP IPR																													FRP IPR ▲ ₁																											
(2) Full Rate Production Contract Award, (3) FUE																													FRP CA ▲ ₂ ▲ ₃ FUE																											
UH-60M LRIP																													UH-60M																											
UH-60M OT																													UH-60M OT																											
MYP VII PRODUCTION (UH/HH-60M NEW)																													UH-60M MYP VII PRODUCTION																											
(4) UH-60M Upgrade First Flight																																	▲ ₄																							
(5) UH-60M Upgrade LUT																																	▲ ₅																							
UH-60M Upgrade Development																													UH-60M Upgrade Development																											
UH-60M Upgrade Cut-In																													UH-60M Upgrade Cut-In																											
MYP VIII Production (UH/HH-60M Upgrade New)	MYP VIII Production (UH/HH-60M Upgrade New)																																																							

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE					PROJECT	
7 - Operational system development		0203744A - Aircraft Modifications/Product Improvement Programs					504	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
UH-60M Program	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q				
FRP IPR	3Q							
Full Rate Production Contract Award		1Q						
FUE		2Q						
Test Article Fab/Checkout								
DT/Flight Test								
UH-60M LRIP	1Q - 3Q							
UH-60M OT	1Q							
MYP VII PRODUCTION (UH/HH-60M NEW)	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q			
UH-60M Upgrade IPR								
UH-60M Upgrade First Flight		2Q - 3Q						
UH-60M Upgrade LUT		3Q - 4Q						
UH-60M Upgrade Development	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q				
UH-60M Upgrade Cut-In		4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q			
MYP VIII Production (UH/HH-60M Upgrade New)						1Q - 4Q	1Q - 4Q	
OT preparation and conduct								
Closeout of Integration and Qualification								
Full Rate Production IPR (UH-60M)								
First Unit Equipped (FUE) (UH-60M)		2Q						
UH-60M Upgrade Low Rate Cut-In		4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs						PROJECT D12	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
D12 LONGBOW APACHE OPERATIONAL SYSTEMS DEVELOP	641		36066						36707

A. Mission Description and Budget Item Justification: Project D12, Longbow Apache Operational System Development, provides funding for the accelerated fielding of the Composite Main Rotor Blade (CMRB), the development of the initial suite of the Apache Maintenance Part Task Trainers (PTT), and the development of a Light Weight Missile Launcher. An updated state-of-the-art CMRB is in development for the Block III Apache. The effort in this project provides funding for qualification and enables accelerated fielding for the Longbow Apache Attack Helicopter Block I/II fleet. The CMRB provides twice the time on wing and provides more lift which will have a significant impact to combat operations in OIF/OEF. The development of Apache Maintenance Part Task Trainers addresses the requirements of the US Army Aviation Logistics School for additional maintenance training devices to meet the increasing volume of initial entry students for Military Occupational Specialties 15R and 15Y. The new AH-64D Maintenance PTT are: Wing PTT, Integrated Pressurized Air System PTT, Gun PTT, and Multiplex PTT. The Light Weight Missile Launcher will provide weight savings per launcher, commonality, producibility and improved electronics reliability to the Apache Block I/II fleet.

FY 2007 funding total includes no funding received in GWOT supplemental.

FY 2008 funding total includes no funding received in the Bridge Supplemental.

FY 2008 funding totals do not include any previously requested funding for current FY 2008 GWOT requirements, and no FY 2008 GWOT funds have been previously requested in the RDTE Project of D12.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Composite rotor blade effort for the Apache Aircraft	641		
Boeing NRE Contract -- CMRB Acceleration Development			11800
SOFSA/L3 Inc. NRE Contract -- Apache Training Devices			14400
Light Weight Missile Launcher NRE Contract			9866
Total	641		36066

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
APA, SSNs: AA6606, AA6670	1487830	818109	637343	452897	451754	582245	612912	5732820	10775910
RDTE, 0203744A, D17	118863	192453	198361	134249	101148	82528	53451		881053

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0203744A - Aircraft Modifications/Product Improvement Programs

PROJECT

D12

C. Acquisition Strategy In FY09, CMRB funding will be placed on contract as part of the Block III Phase I SDD effort. The Apache Maintenance Part Task Trainer funding will be placed on contract with L3 through SOFSA. The Light Weight Launcher (LWL) project is anticipated to be a competitively awarded FFP contract. Supporting programs to the LWL are the JAGM missile system PE 655450, other missile product improvement PE 0203802A, Hellfire system C70000, and Hellfire Mods C71500.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY				PE NUMBER AND TITLE							PROJECT	
7 - Operational system development				0203744A - Aircraft Modifications/Product Improvement Programs							D12	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Boeing NRE -- CMRB	Cost Reimb	Mesa, AZ		641				11800	1-2Q		12441	11800
SOFSA/L3 Inc. NRE - TADSS	Cost Reimb	Lexington, KY						14400	1-2Q		14400	14400
Light Weight Launcher NRE	FFP	TBD						9866	1-2Q		9866	
Subtotal:				641				36066			36707	26200
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
Project Total Cost:				641				36066			36707	26200

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Programs PROJECT
D12

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
Boeing NRE Contracts -- CMRB					CMRB -- NRE																							
SOFSA/L3 INC NRE Contract -- Training Devices					Training Devices -- NRE																							
CMS Phase II Demo					Light Weight Launcher -- NRE																							
(1) Airworthiness Certification -- CMRB									Air Worthiness Cert				▲ ₁															
(2) First Delivery -- CMRB Block I/II Fleet													CMRB First Delivery				▲ ₂											
(3) First Unit Equipped (FUE) -- CMRB Block I/II Fleet																	FUE -- CMRB				▲ ₃							
(4) First Delivery IPAS PPT, Wing PPT & Multiplex PPT									1st Delivery -- IPAS/Wing				M-Plex PPTs				▲ ₄											
(5) First Delivery Gun PPT									1st Delivery -- Gun PPT				▲ ₅															

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs					PROJECT D12	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Boeing NRE Contracts -- CMRB			1Q - 4Q					
SOFSA/L3 INC NRE Contract -- Training Devices			1Q - 4Q					
CMS Phase II Demo			1Q - 4Q					
Airworthiness Certification -- CMRB				1Q				
First Delivery -- CMRB Block I/II Fleet					1Q			
First Unit Equipped (FUE) -- CMRB Block I/II Fleet					3Q			
First Delivery IPAS PPT, Wing PPT & Multiplex PPT				1Q				
First Delivery Gun PPT				2Q				

Termination Liability Funding For Major Defense Acquisition Programs, RDT&E Funding (R5)	February 2008
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BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs	PROJECT D12
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Funding in \$000							
Program	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Boeing			1180				
SOSFA/L3 INC			1440				
Light Weight Launcher (TBD)			987				
Total Termination Liability Funding:			3607				



ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs						PROJECT D17	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
D17 APACHE BLOCK III	118863	192453	198361	134249	110148	82528	53451	Continuing	Continuing

A. Mission Description and Budget Item Justification: Project D17, Apache Block III funding is for the non-recurring engineering (NRE), development, and testing work associated with the planned remanufacture of 634 Apache aircraft into Block III-configured aircraft (deliveries to begin in FY11). The Block III program will provide Network-Centric capabilities for 634 Apache Longbows at a critical time as the Army transitions from the current force to the Future Force (FF). Block III capability enhancements are achieved via planned technology insertions such as: FF Connectivity-Seamless Global Information Grid Communications (Interim Communications Suite embedded in an Open Systems Architecture (OSA)); extended range sensing; increased survivability; Cognitive Decision Aiding System (CDAS), which speeds critical battle tasks; improved aircraft performance: reduced Operations and Support (O&S) cost and logistics footprint, and increased aircraft readiness. As a result of United States Army transformation, emerging FF organizational and operational structure, lessons learned from Operation Enduring Freedom and Operation Iraqi Freedom, and a changing operational environment, the Modernized Apache is integral to achieving air-ground synergy during FF operations. The Block III Modernized Apache fleet, with its upgraded system architecture, will enable FF compatibility and enhanced war-fighting capability.

FY 2007 funding total includes no funding received in GWOT supplemental.

FY 2008 funding total includes no funding received in the Bridge Supplemental.

FY 2008 funding totals do not include any previously requested funding for current FY 2008 GWOT requirements, and no FY 2008 GWOT funds have been previously requested in the RDTE Project of D17.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Boeing NRE Contracts	82800	146000	145322
Joint Venture NRE Contracts	25000	22000	26000
Block III NRE Program Support Activities	4097	10131	14183
Operational Assessments	455	2639	6430
Management Services	6511	6298	6426
Small Business Innovative Research/Small Business Technology Transfer Programs.		5385	
Total	118863	192453	198361

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
APA, SSN AA6605	1487830	818109	637342	452897	451754	582245	41229	5732820	10204226
RDTE, PE273744D12	641		36066						36707

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0203744A - Aircraft Modifications/Product Improvement Programs

PROJECT

D17

Comment:

C. Acquisition Strategy The NRE will encompass subsystem integration resulting in a Critical Design Review (CDR) and will utilize existing test aircraft, incorporate the technical insertions, and initiate appropriate qualification and flight testing. The LRIP effort will include a total quantity of 59 aircraft which will take 21 months for delivery and therefore will be two separate contractual actions (FY 09 & FY 10). These 59 Low Rate Initial Production (LRIP) aircraft are to be used for operational testing, First Unit Equipped (FUE) and training base fielding.

In FY 11, a contract for Apache Block III Lot 3 (33 aircraft), initiating full rate production, will be awarded with options for Lot 4 (48 aircraft), Lot 5 (48 aircraft) and Lot 6 (48 aircraft), and continuing through to a total of 634 aircraft.

Contractor Support is anticipated to Apache Block III Lot 6 deliveries. Training device concurrency will be maintained with each technical insertion. Advanced material procurement is planned for award in FY 09 to support the LRIP deliveries in FY 11. All NRE efforts will be awarded as Cost Reimbursable. The LRIP and production efforts will be awarded as Firm Fixed Price (FFP) and include the Advanced Procurement requirements.

As the acquisition strategy and plan unfolds Multi-Year authority may be requested for the out-years.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							D17		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Boeing Contracts	Cost Reimb	Mesa, AZ	103377	82800	1-2Q	146000	1-2Q	145361	1-2Q	279300	756838	756838
Joint Venture Contracts	Cost Reimb	Orlando, FL	49000	25000	1-2Q	22000	1-2Q	26000	1-2Q	28108	150108	150108
Lockheed Martin Contracts	Cost Reimb	Orlando, FL								18831	18831	18831
Subtotal:			152377	107800		168000		171361		326239	925777	925777
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Block III NRE Support	Various	Various Activities	1596	4097	1-3Q	15516	1-3Q	14183	1-2Q	25460	60852	60852
Subtotal:			1596	4097		15516		14183		25460	60852	60852
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Assessments, Test Integration Working Group (TWIG), TEMP, etc.	MIPR, Various	Various Activities	672	455	1-2Q	2639	1-2Q	6430	1-2Q	7351	17547	17547
Subtotal:			672	455		2639		6430		7351	17547	17547
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Management Svcs (In-House, Travel, etc.)	Various	PMO AAH, Matrix Support, AMCOM	6468	6511	1-2Q	6298	1-2Q	6426	1-2Q	21326	47029	47029

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							D17		
		Express										
Subtotal:			6468	6511		6298		6426		21326	47029	47029

Project Total Cost:			161113	118863		192453		198400		380376	1051205	1051205
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Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
	NRE Contracts - Boeing	NRE Contracts - Boeing NRE																										
NRE Contracts - Joint Venture	NRE Contracts - Joint Venture																											
Lockheed Martin Contracts	Lockheed Martin Contracts																											
(1) Preliminary Design Review	▲ ₁ PDR																											
(2) Critical Design Review (CDR)					▲ ₂ CDR																							
(3) Limited User Test (LUT) I													▲ ₃ Limited User Test (LUT) I															
(4) Milestone C													▲ ₄ MS C															
(5) Initial Operating Capability (IOC)																					▲ ₅ IOC							

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs					PROJECT D17	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
NRE Contracts - Boeing	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q	
NRE Contracts - Joint Venture	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q	
Lockheed Martin Contracts				1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q	
Preliminary Design Review	3Q							
Critical Design Review (CDR)		2Q						
Limited User Test (LUT) I				1Q				
Milestone C				3Q				
Initial Operating Capability (IOC)							2Q	

Termination Liability Funding For Major Defense Acquisition Programs, RDT&E Funding (R5)	February 2008
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BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs	PROJECT D17
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Funding in \$000							
Program	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
D17, Apache Block III	12200	19500	19500	13500	11000	8300	5380
Total Termination Liability Funding:	12200	19500	19500	13500	11000	8300	5380



ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs						PROJECT D18	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
D18 UTILITY FW CARGO AIRCRAFT	5397	6495	3017						14909

A. Mission Description and Budget Item Justification: This Project supports Test and Evaluation of the Joint Cargo Aircraft (JCA). The RDT&E funds are to support statutorily-mandated Live Fire Test and Evaluation (LFT&E) including survivability/susceptibility assessment and Initial Operational Test and Evaluation (IOT&E). The LFT&E will involve system, subsystem- and component-level live fire testing. Additionally, survivability/susceptibility characterization assessments of nuclear, biological, chemical, and electromagnetic capabilities will be performed.

FY 2007 funding total includes no funding received in GWOT supplemental.
 FY 2008 funding total includes no funding received in the Bridge Supplemental.
 FY 2008 funding totals do not include any previously requested funding for current FY 2008 GWOT requirements, and no FY 2008 GWOT funds have been previously requested in the RDTE Project of D18.

Accomplishments/Planned Program:	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Production Qualification Test (PQT)	594	1145	874
Live Fire Test & Evaluation (LFT&E) Testing	2312	5133	693
Live Fire Test & Evaluation (LFT&E) Hardware	2491		
Initial Operational Test & Evaluation (IOT&E)		36	1450
Small Business Innovative Research/Small Business Technology Transfer Programs		181	
Total	5397	6495	3017

B. Other Program Funding Summary	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
A11000 UTILITY F/W CARGO AIRCRAFT	71864	155982	266222	303824	427737	466800	465600	Continuing	Continuing
USAF PE0401138F/Project 5259 Joint Cargo Aircraft	7781	19530	27001	11500	9650	19200			94662
USAF BA 02/Item No. 10b/Joint Cargo Aircraft			5500	125400	266600	538500	483600	Continuing	Continuing

Comment: The Joint Cargo Aircraft test program is a joint effort between the Army and the Air Force. Each service will provide 50% of the required funding critical to complete aircraft testing to include PQT, LFT&E and IOT&E. This agreement was approved in the Memorandum of Agreement (MOA) signed June 2006. Air Force PE: 0401138F (Joint Cargo Aircraft), Project: 5259. The Air Force RDT&E line also includes funding for Trainer Development; Engineering, Training and Logistics Studies; and Joint Development Engineering.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0203744A - Aircraft Modifications/Product Improvement Programs

PROJECT

D18

C. Acquisition Strategy The Joint Cargo Aircraft's acquisition strategy is based on leveraging the commercial market. The contract was awarded in June 2007 to procure a previously developed and fielded, low-risk, commercially available aircraft and Mission Equipment Package (MEP). A protest immediately followed, which resulted in a 100 day stop work order. Program was re-started in October 07. These aircraft possess open architecture systems that will support technology insertions as improvements become available.

The JCA program was established to correct operational shortfalls with respect to time sensitive mission critical requirements, provide commonality with other aviation platforms, and replace multiple retiring aircraft systems. This aircraft addresses these shortfalls, and replaces retiring C-23 fleets, and selected C-12s.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							D18		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Production Qualification Test (PQT)	MIPR	Various		594	1-2Q	1145	2-3Q	874	2-3Q		2613	2196
LFT&E Testing	MIPR	Various		2312	1-2Q	5133	2-3Q	693	2Q		8138	6147
LFT&E Hardware	C/FFP	L3 Comm Integ Sys, Greenville, Texas		2491	1Q						2491	5235
Initial Operational Test & Evaluation (IOT&E)	MIPR	TBD						643	2-3Q		643	643
Initial Operational Test & Evaluation (IOT&E)	MIPR	Army Test Evaluation Command (ATEC), Alexandria, VA				36	3Q	807	2Q		843	862
Subtotal:				5397		6314		3017			14728	15083
Remarks: Award of FY07 LFT&E Hardware and a majority of LFT&E Testing and PQT will occur in FY08 as a direct result of a 100 day stop work order necessitated by a GAO protest.												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY				PE NUMBER AND TITLE						PROJECT		
7 - Operational system development				0203744A - Aircraft Modifications/Product Improvement Programs						D18		
Small Business Innovative Research/Small Business Technology Transfer Programs						181	1-4Q				181	155
Subtotal:						181					181	155
Project Total Cost:					5397		6495		3017		14909	15238

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Programs PROJECT
D18

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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) Milestone C	<div style="position: absolute; top: 10%; left: 15%; width: 10%; text-align: center;"> ▲ 1 Milestone C </div> <div style="position: absolute; top: 25%; left: 20%; width: 40%; background-color: blue; color: white; text-align: center; padding: 2px;">PQT</div> <div style="position: absolute; top: 35%; left: 20%; width: 40%; background-color: blue; color: white; text-align: center; padding: 2px;">LFT&E</div> <div style="position: absolute; top: 45%; left: 55%; width: 10%; text-align: center;"> IOT&E ■ </div> <div style="position: absolute; top: 60%; left: 65%; width: 10%; text-align: center;"> ▲ 2 FRP </div>																											
Production Qualification Test (POT)																												
Live Fire Test & Evaluation																												
Initial Operational Test & Evaluation (IOT&E)																												
(2) Full Rate Production Decision																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs					PROJECT D18	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Milestone C	3Q							
Production Qualification Test (PQT)	2Q - 4Q	1Q - 4Q	1Q - 3Q					
Live Fire Test & Evaluation	2Q - 4Q	1Q - 4Q	1Q - 4Q					
Initial Operational Test & Evaluation (IOT&E)			4Q	1Q				
Full Rate Production Decision				2Q				

Termination Liability Funding For Major Defense Acquisition Programs, RDT&E Funding (R5)	February 2008
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BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs	PROJECT D18
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Funding in \$000							
Program	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Joint Cargo Aircraft							
Total Termination Liability Funding:							

Remarks:
 The Joint Cargo Aircraft's acquisition strategy is based on leveraging the commercial market. The contract was awarded in Jun 07 to procure a previously developed and fielded, low-risk, commercially available aircraft and Mission Equipment Package (MEP). Based on this rationale, no Termination Liability Funding has been budgeted. RDTE funding in the JCA program is associated with PQT, OT and LFT&E only.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
7 - Operational system development		0203758A - Digitization						374	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
374	14490	9675	9534	8871	6472	6574	6709	Continuing	Continuing

A. Mission Description and Budget Item Justification: Horizontal Battlefield Digitization is a strategy that allows warfighters, from the individual soldier and platform to echelons above corps, to share critical situational awareness (SA) and command and control information. It applies digital information technologies to acquire, exchange, and employ data throughout the battlespace, providing a clear and accurate common relevant picture for leaders at all levels. This timely sharing of information significantly improves the ability of commanders and leaders to quickly make decisions, synchronize forces and fires, and increase the operational tempo. Digitization is a means of realizing a fully integrated command and control capability to the platoon level, including interoperability links with joint and multi-national forces. The major efforts included in the program element are: 1) Integration and synchronization of the Army's interoperability efforts; coordination of interoperability efforts between joint and multi-national forces; and the synchronization of combat material and training efforts to develop and deploy Army information technologies. 2) Systems engineering and integration of hardware and software interfaces between and across multiple battlefield operating systems and across multiple Program Executive Offices, providing System of Systems (SOS) capabilities that satisfy warfighter requirements and enable the prosecution of mission operations by providing one Common Operational Picture (COP). 3) Software Blocking to synchronize system developments in order to support System of System (SOS) interoperability for legacy, interim and objective forces. 4) Unit Set Fielding operationally releases, fields and incorporates materiel systems as part of the whole C4ISR system of systems architecture. 5) Field integration to Active and Reserve Components both CONUS and OCONUS to support field use of digitized equipment.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Conduct technical interoperability assessments, perform interoperability/integration analyses, analyze networked weapon system and Situational Awareness (SA), Command and Control (C2), Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems compatibility, and assess technical and operational test plans, activities, and results.	3131	1782	1727
Manage cross-platform software and hardware development, testing, training, and fielding to ensure the coordinated interoperability for each Army Force unit rotation.	3815	2505	2216
Integrate and synchronize interoperability across SA/C2/C4ISR programs in support of acquisition synchronization, testing, training, and fielding System of Systems capabilities to the Army Force. Continue application across current and future force.	2100	1650	1732
Apply university academic and research resources to the integration of Army complex modeling, simulation, and training in support of modernized forces.	1500		
Support Joint and Coalition interoperability programs to improve integration and interoperability in accordance with Army Software Blocking Policy, Joint Planning Guidance, Coalition Specifications, Joint Capabilities Integration and Development System (JCIDS) requirements.		600	620
Support digitization technical integration with Active and Reserve Components both CONUS and OCONUS.	3944	2921	3239
Small Business Innovative Research/Small Business Technology Transfer Program		217	
Total	14490	9675	9534

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203758A - Digitization			PROJECT 374
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	14709	9737	11056	
Current BES/President's Budget (FY 2009)	14490	9675	9534	
Total Adjustments	-219	-62	-1522	
Congressional Program Reductions		-62		
Congressional Rescissions				
Congressional Increases				
Reprogrammings	108			
SBIR/STTR Transfer	-327			
Adjustments to Budget Years			-1522	

Change Summary Explanation: Funding - FY 2009: Funds realigned to higher priority programs.

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

D. Acquisition Strategy To validate/demonstrate concepts and requirements, near term efforts are focused on developing a seamless battlefield software architecture and digitized hardware systems to include: evaluation of the horizontal battlefield digitization resources for systems, acquisition, integration, and testing of digital capability across multiple command and control, communications, sensors, and weapons platforms. The result will be an integrated, synchronize capability designed to meet the near-term requirements of the Stryker Brigade Combat Teams and the Army Future Force. Also supports the Army's role in joint and multi-national digitization programs, battle command efforts and Joint Battlefield Situational Awareness.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203758A - Digitization							374		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
System/Software Integration	MIPR/PWD	Various	100815	6204	2-3Q	3421	2-3Q	4454	2-3Q	Cont.	Cont.	
International Digitization	MIPR/PWD	Various	11001								11001	
Technical Analysis	MIPR	MITRE, McLean, VA	9756	1600	1Q	1650	1Q	1780	1Q	Cont.	Cont.	
Other Government Agencies	MIPR	Various	6522									
Single Integrated Ground Picture	MIPR		7281									
Subtotal:			135375	7804		5071		6234		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Directorate of Integration Office Operations	In House	Pentagon, Arlington, VA	11772	1350	1-4Q	1404	1-4Q		1-4Q		14526	
Digitization Planning, Internet and graphics support	MIPR	General Dynamics Corp. Pentagon, Arlington, VA	6999								6999	
Info Ops, System Eng. & Field Integration, Internet and graphics support.	PWD	Quantum Res International, Pentagon & NC3, Arlington, VA, Ft. Monroe, VA, & Ft. Hood, TX and others	19894									
Other Integration Support	MIPR	L3Com, Pentagon	2119								2119	
System Eng. & Field Integration, Internet and graphics support.	PWD	Quantum Res International, Pentagon & Arlington, VA, Ft. Monroe, VA, & Ft. Hood, TX	3111	3836	4Q	3200	4Q	3300	4Q		13447	
Subtotal:			43895	5186		4604		3300			37091	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203758A - Digitization	PROJECT 374
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III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Other Govt. Agencies	MIPR	Various	5062								5062	
University XXI Initiatives	PWD	Univ. of Texas and Texas A&M	16357	1500	1Q						17857	
Studies/Analyses	MIPR	Pentagon, Arlington, VA	2116								2116	
DISM Battalion Test	MIPR/PWD		1000								1000	
Subtotal:			24535	1500							26035	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

Remarks: Not Applicable

Project Total Cost:	203805	14490		9675		9534		Cont.	Cont.	
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203759A - Force XXI Battle Command, Brigade and Below (FBCB2)						PROJECT 120		
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
120 Force XXI Battle Cmd, Brigade & Below (FBCB2)	26068	32194	38418						96680

A. Mission Description and Budget Item Justification: The Force XXI Battle Command Brigade and Below (FBCB2) is a digital, battle command information system that provides integrated, on-the-move, timely, relevant battle command information to tactical combat, combat support and combat service support leaders and soldiers. FBCB2 incorporates state-of-the-art information technology to allow commanders to concentrate combat system effects rather than combat forces, enabling units to be both more survivable and more lethal. FBCB2 provides the capability to pass orders and graphics allowing the warfighter to visualize the commander's intent and scheme of maneuver. FBCB2 affords combat forces the capability to retain the tactical/operational initiatives under all mission, enemy, terrain, troops, and time available conditions to enable faster decisions, real/near-real-time communications and response. FBCB2 as a key component of the Army Battle Command System (ABCS), completes the information flow process from brigade to platform and across platforms within the brigade task force and across brigade boundaries. FBCB2 system provides a dual based capability consisting of both terrestrial (EPLRS) and satellite based (L-Band) systems. The system includes a Pentium based processor, display unit, keyboard, removable hard disk drive cartridge, and a platform specific installation kit. The satellite based system, more commonly known as Blue Force Tracking (BFT), includes an L-Band transceiver that employs commercial satellite services in lieu of tactical terrestrial radios. Currently over 20,000 systems have been fielded with approximately 15,000 systems in support of Operation Enduring Freedom (OEF)/Operation Iraqi Freedom (OIF).

FY09 funds continue execution of Chief of Staff of the Army Directives for Battle Command Architecture and Joint Requirements Oversight Council Memorandum (JROCM) efforts. Efforts include security network architecture requirements, and interoperability between Tactical Internet and L-Band based FBCB2 systems. Funds will be used to provide platform-level situational awareness and provide interoperability with ABCS System of Systems, Bradley, Abrams, Aviation, Stryker and support mandated Army/DoD protocol/system updates.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Continue to design, develop, fabricate and test a Type 1 Encryption Device (T1ED) to meet requirements for processing secret messages.	3149	5664	
Continue test and evaluation efforts to support Army Software Blocking schedule.	1403	5259	4000
PM FBCB2 Program Management	2075	2566	3618
Continue development of FBCB2 Joint Capabilities Release (JCR) to include Army and Marine Corp Common Battle Command Product Line (BCPL) initiatives, communications connectivity, and high speed data networks capabilities.	7000	10116	8839
Design, develop, fabricate and test prototype L-Band antennas to achieve data capacity and situation awareness accuracy requirements. Develop and deliver an organic FBCB2 Blue Force Tracking (BFT) L-band key management capability for the Army and other DoD and coalition users of the FBCB2 BFT L-Band network.	12441	7688	
Initiate systems engineering design and development of Joint Battle Command-Platforms Software.			4000

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		PROJECT
7 - Operational system development	0203759A - Force XXI Battle Command, Brigade and Below (FBCB2)		120
Initiate systems development efforts against current Combat Identification Capability gaps for accuracy/latency of Blue Position reporting, density of systems and joint coalition interoperability.			7461
Initiate hardware development for dismounted, tablet, and beacon capabilities.			3500
Develop and test cross domain security solution to permit unclassified users to operate systems on a Type 1 secured network. Provide interface to unclassified sensor networks and logistics data.			3000
Develop and test netcentric services appropriate for platforms. Integrate wideband terrestrial radio/hybrid network.			4000
Small Business Innovative Research/Small Business Technology Transfer Programs		901	
Total		26068	32194

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203759A - Force XXI Battle Command, Brigade and Below (FBCB2)	PROJECT 120
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<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	26083	32446	13666
Current BES/President's Budget (FY 2009)	26068	32194	38418
Total Adjustments	-15	-252	24752
Congressional Program Reductions		-252	
Congressional Rescissions	-15		
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years			24752

Change Summary Explanation: Funding - FY09 increase provided to initiate development efforts for Joint Battle Command-Platforms (JBC-P) capabilities.

<u>C. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
OPA - W61900	523472	248444	231651	197154	124513	100987	71299		1497520
OPA - BS9736 (Spares)	363	2811	5633						8807
OMA - 432142	14536	19901	19901						54338

Comment:

D. Acquisition Strategy The FBCB2 development effort follows an evolutionary acquisition strategy to support Product Line Architecture, Army/Marine Corps convergence, Army Battle Command System (ABCS) interoperability and Army Software Blocking requirements. A Full Rate Production (FRP) decision review conducted by the Army Systems Acquisition Review Council (ASARC) in Aug 2004 authorized the FBCB2 program to enter into the Production and Deployment phase. Development efforts are executed via an Indefinite Delivery/Indefinite Quantity (ID/IQ) Cost Plus Award/Fixed Fee type contract. The current contract was awarded in Sep 2004 with a period of performance through Sept 2009. Follow on contract for development of JBC-P capabilities will be awarded based on full and open competition.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203759A - Force XXI Battle Command, Brigade and Below (FBCB2)							120		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software/Systems Engineering	CPIF/CPAF	Northrup Grumman, CA	185362	1680	1-2Q	2428	1-2Q	6552	1-2Q	Cont.	Cont.	
Hardware Development	CPFF	Northrup Grumman, CA	36387	15590	1-3Q	13352	1-2Q	3500			68829	
Software Development	CPIF/CPAF	Northrup Grumman, CA	252778	5320	1-2Q	7688	1-2Q	20748	1-2Q	Cont.	Cont.	
TACNAV	CPIF	TRW CA	1000								1000	
Systems Eng, Training and Log Development	CPAF	Lockheed Martin, NJ	11196								11196	
Systems Eng, Training and Log Development	Various	Various Contracts	1504								1504	
Subtotal:			488227	22590		23468		30800		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PM Office Support	N/A	CECOM, Ft. Monmouth	15018	345	1-4Q	670	1-4Q	874	1-4Q	Cont.	Cont.	
Matrix Support	MIPR	CECOM, Ft. Monmouth	4985	318	1-2Q	528	1-2Q	673	1-2Q	Cont.	Cont.	
Misc. Contracts Support	MIPR/PWD	CECOM, Ft. Monmouth	28443	1412	1-2Q	1368	1-2Q	2071	1-2Q	Cont.	Cont.	
Subtotal:			48446	2075		2566		3618		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CTSF	MIPR	CTSF	3308		1-3Q		1-4Q	75	1-4Q		3383	
ATEC	MIPR	ATEC	37077	285	1-3Q	765	1-4Q	2500	1-4Q	Cont.	Cont.	
EPG	MIPR	EPG	19999	616	1-3Q	4494	1-4Q	1000	1-4Q	Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0203759A - Force XXI Battle Command, Brigade and Below (FBCB2)							PROJECT 120	
CRTC	MIPR	CRTC	1040							1040	
Misc Contract Support			3269	502	1-3Q		1-4Q	425	1-4Q		4196
Subtotal:			64693	1403		5259		4000		Cont.	Cont.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Small Business Innovative Research/Small Business Technology Transfer Programs						901	1-4Q				901	
Subtotal:						901					901	

Project Total Cost:			601366	26068		32194		38418		Cont.	Cont.	
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Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203759A - Force XXI Battle Command, Brigade and Below (FBCB2)

PROJECT
120

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
FBCB2																												
Joint Capabilities Release (JCR)/ Product Line Architecture/ JROCM 161-03																												
(1) System/Segment Acceptance Testing (SSAT), (2)																												
Intra Army Interoperability Certification (IAIC),																												
Operational Evaluation																												
JBC-P																												
(3) Milestone B																												
(4) Contract Award																												
Development Phase																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203759A - Force XXI Battle Command, Brigade and Below (FBCB2)	PROJECT 120
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<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>
FBCB2	1Q - 4Q	1Q - 4Q	1Q - 4Q				
Joint Capabilities Release (JCR)/ Product Line Architecture/ JROCM 161-03	1Q - 4Q	1Q - 4Q	1Q - 4Q				
System/Segment Acceptance Testing (SSAT)		3Q					
			2Q				
Intra Army Interoperability Certification (IAIC)		2Q - 3Q					
			2Q - 3Q				
Operational Evaluation		4Q					
JBC-P			4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
Milestone B			2Q - 3Q				
Contract Award			3Q				
Development Phase			3Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE							
7 - Operational system development		0203801A - Missile/Air Defense Product Improvement Program							
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	16529	30026	37871	40577	25790	10926	10931		172650
036 PATRIOT PROD IMP PGM	16529	10829	11163	12140	12644				63305
DF8 DF8		4292	11804	8579	3217				27892
DF9 DF9		14905	14904	19858	9929	10926	10931		81453

A. Mission Description and Budget Item Justification: PATRIOT is an advanced Surface-to-Air guided missile system with a high probability of kill capable of operation in the presence of Electronic Countermeasures (ECM) and able to conduct multiple simultaneous engagements against high performance air breathing targets and ballistic missiles likely to be encountered by US Forces. The Patriot Product Improvement Program provides for the upgrade of the Patriot System through individual materiel changes. Program Development efforts address Mode V/S Identification Friend or Foe (IFF), launcher and design improvements.

DF8 The PATRIOT advanced missile system plays a critical part in the integrated battlefield. DF8 funding was provided by OSD to support expanding ongoing current Joint efforts to advance integrated battlefield capabilities.

DF9 DF9 funding was provided to the Army by OSD as part of an ongoing Joint OSD-managed effort.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
7 - Operational system development	0203801A - Missile/Air Defense Product Improvement Program		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	10651	30219	38115
Current BES/President's Budget (FY 2009)	16529	30026	37871
Total Adjustments	5878	-193	-244
Congressional Program Reductions		-193	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	5878		
SBIR/STTR Transfer			
Adjustments to Budget Years			-244

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203801A - Missile/Air Defense Product Improvement Program						PROJECT 036	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
036 PATRIOT PROD IMP PGM	16529	10829	11163	12140	12644				63305

A. Mission Description and Budget Item Justification: PATRIOT is an advanced Surface-to-Air guided missile system with a high probability of kill capable of operation in the presence of Electronic Countermeasures (ECM) and able to conduct multiple simultaneous engagements against high performance air breathing targets and ballistic missiles likely to be encountered by US Forces. The Patriot Product Improvement Program provides for the upgrade of the Patriot System through individual materiel changes. Program Development efforts address Mode V/S Identification Friend or Foe (IFF), launcher and design improvements.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Software Improvement for Threat Evolution	16229	10829	11163
Small Business Innovative Research/Small Business Technology Transfer Programs	300		
Total	16529	10829	11163

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

C. Acquisition Strategy The design objective of the Patriot system was to provide a baseline system capable of modification to cope with the evolving threat. This alternative minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems. The Patriot Product Improvement program upgrades the Patriot system to address operational lessons learned, enhancements to joint force interoperability, and other system performance improvements to provide overmatch capability with the emerging threat. Upgrades are implemented through individual hardware and software materiel changes and fielded incrementally.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203801A - Missile/Air Defense Product Improvement Program							036		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software Improvement for Threat Evolution	SS-CPIF	Multiple	16858	14509	2Q	8829	2Q	8984	2Q		49180	
Recapitalization	SS-CPIF	Multiple	89289								89289	
SIAP	SS-FP	Raytheon, MA	14852								14852	
Advanced Composite Radome	SS-CPIF	Multiple	3100								3100	
Subtotal:			124099	14509		8829		8984			156421	
Remarks: Sole Source-Cost Plus Incentive Fee (SS-CPIF); Sole Source-Fixed Price (SS-FP)												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Missile Command	MIPR	RSA, AL	18221	330	2-3Q	375	2-3Q	400	2-3Q	Cont.	Cont.	
White Sands Missile Range	MIPR	WSMR, NM	14042	230	2-3Q	250	2-3Q	270	2-3Q	Cont.	Cont.	
RDEC and Other Govt Agent	MIPR	RSA, AL	99992	600	2-3Q	625	2-3Q	684	2-3Q	Cont.	Cont.	
Subtotal:			132255	1160		1250		1354		Cont.	Cont.	
Remarks: Military Interdepartmental Purchase Request (MIPR); Redstone Arsenal (RSA); White Sands Missile Range (WSMR)												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0203801A - Missile/Air Defense Product Improvement Program							PROJECT 036	
In-House Support	N/A	RSA, AL	17211	480	1-4Q	450	1-4Q	475	1-4Q	Cont.	Cont.
Matrix Support	N/A	RSA, AL	5137	380	1-2Q	300	1-2Q	350	1-2Q	Cont.	Cont.
Subtotal:			22348	860		750		825		Cont.	Cont.

Remarks: Non-Applicable (N/A); Redstone Arsenal (RSA)

Project Total Cost:			278702	16529		10829		11163		Cont.	Cont.
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Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13																																																																																																																							
	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																																																																																																																				
	RECAPITALIZATION	Recapitalization																																																																																																																																														
Mode V IFF																																																																																																																																																
Launcher Electronics																																																																																																																																																
Surveillance/Detection																																																																																																																																																
Software Build																																																																																																																																																
(1) PBD 6 Event Start: 5416 vposition: 3135																																																																																																																																																
(2) PBD 6.5 Event Start: 7800 vposition: 3630																																																																																																																																																
(3) PBD 7 Event Start: 10400 vposition: 4125																																																																																																																																																

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203801A - Missile/Air Defense Product Improvement Program					PROJECT 036	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
RECAPITALIZATION	1Q - 4Q							
Mode V IFF	1Q							
Launcher Electronics	1Q							
Surveillance/Detection								
Software Build	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
PBD 6 Event Start: 5416 vposition: 3135	1Q							
PBD 6.5 Event Start: 7800 vposition: 3630			1Q					
PBD 7 Event Start: 10400 vposition: 4125					1Q			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE							
7 - Operational system development		0203802A - Other Missile Product Improvement Programs							
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	19086	1885	1527						40302
781 Hellfire UAV	7457	1885	1527						10869
786 APKWS Simulator Upgrade	12								12
788 ATACMS PIP	11617								29421

A. Mission Description and Budget Item Justification: The Laser HELLFIRE II missile requires replacement of the gyro and software modification to facilitate deployment from high altitudes and increased engagement geometries to defeat a broad target set ranging from heavy armor to urban structures. Modifications will be made to both the current AGM-114K or AGM-114K-2 (shaped charge) and N (blast fragmentation) model missiles and result in an AGM-114 P+ configuration. The missile will be backwards compatible with current rotary wing platforms.

The Advanced Precision Kill Weapon System (APKWS) Program was terminated in FY07.

Army Tactical Missile Systems (ATACMS) are the U.S. Army's primary 24/7, all-weather, surface-to-surface organic long range precision missiles employed by modular Fires Brigades supporting Brigade Combat Teams (BCT), Joint Special Operations Force (JSOF), and Joint Force combatant commanders. ATACMS missiles are used to shape the battlefield with destructive and suppressive Precision Strike fires out to a range of 300 KM against area and point targets in Open, Complex and Urban environments. To date, approximately 500 ATACMS missiles have been expended in support of Operation Enduring Freedom (OEF) / Operation Iraqi Freedom (OIF) in the Global War On Terror (GWOT). The current ATACMS Quick Reaction Unitary (QRU) replaces the Anti-Personnel Anti-Material (APAM) warhead used against area and point targets in Open Terrain with low collateral damage.

ATACMS Unitary is the next incremental development of the ATACMS QRU missile. This incremental development will validate the use of a tri-modal fuze system using the WDU-18 warhead. The WDU-18 warhead plus the addition of the tri-modal fuze system will provide an air-burst capability for area targets; impact detonation for surface targets; and delay-detonation for underground targets, multi-story buildings, or for targets with collateral damage adverse circumstances. This effort includes development and test activities and will extend missile service-life by approximately 10 years. In accordance with the Army Acquisition Executive's Termination letter dated 11 June 2007, the ATACMS development program has been directed to be brought to an orderly conclusion.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
7 - Operational system development	0203802A - Other Missile Product Improvement Programs		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	22554	1897	1537
Current BES/President's Budget (FY 2009)	19086	1885	1527
Total Adjustments	-3468	-12	-10
Congressional Program Reductions		-12	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	-2834		
SBIR/STTR Transfer	-634		
Adjustments to Budget Years			-10

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs					PROJECT 781		
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost	
781 Hellfire UAV	7457	1885	1527						10869	

A. Mission Description and Budget Item Justification: The Laser HELLFIRE II missile requires replacement of the gyro and software modification to facilitate deployment from high altitudes and increased engagement geometries to defeat a broad target set ranging from heavy armor to urban structures. The missile will also be backwards compatible with current rotary wing platforms. The summary activities of the project are: a) replace the missile altitude gyro with an Inertial Measurement Unit (IMU), b) develop a modified digital communication link between the missile and the launcher/platform required to perform Unmanned Aircraft Systems (UAS) functions, c) modify autopilot algorithms and associated software to take advantage of the enhanced engagement envelope offered by the IMU, and d) fully develop, test, and qualify the hardware and software for materiel release for Army fixed and rotary wing platforms. Modifications will be made to both the current AGM-114K or AGM-114K-2(shaped charge) and N (blast fragmentation) model missiles and result in an AGM-114 P+ configuration. These missiles will be designated the P-4A (shaped charge warhead, with sleeve) and N-4 (metal augmenting charge warhead) configurations.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Define and develop system requirements and preliminary design.	3269	224	113
Develop test plans, test support equipment and testing.	2272	1357	1171
Perform government engineering support	1916	251	243
Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)		53	
Total	7457	1885	1527

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
C70100 Laser HELLFIRE Missile (Basic/IHW/HFII)		45689	48629	31721	32710				158749

Comment:

C. Acquisition Strategy The HELLFIRE AGM-114 P+ configuration is an in-house development effort that "leverages" previous experience associated with integration of HELLFIRE on the Air Force Predator Unmanned Aerial Vehicle (UAV) and the current Warrior System Design and Development effort (reviews, testing, and documentation). The end result of the missile modification/integration effort will be an Engineering Change Proposal (ECP) defining the hardware and software changes to be incorporated into production of the missiles for the Warrior UAS and rotary wing platforms.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203802A - Other Missile Product Improvement Programs							781		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Engineering Services	CPFF	Longbow Limited Liability Company, Orlando, FL	2285								2285	
Support Contracts	Various	Various	1708	2759	1-4Q	224	1-3Q	113	1-3Q		4804	
Developmental Engineering	Various	Various	795	1917	1-4Q						2712	
Subtotal:			4788	4676		224		113			9801	
Remarks: Cost Plus Fixed Fee (CPFF)												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Support	Various	Various	2292	2272	1-4Q	1345	1-4Q	1171	1-4Q		7080	
Subtotal:			2292	2272		1345		1171			7080	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
In-House Support	Various	Various	221	295	1-4Q	251	1-4Q	243	1-4Q		1010	
SBIR/STTR				214	2Q	65	2Q				279	
Subtotal:			221	509		316		243			1289	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs				PROJECT 781			
Project Total Cost:	7301	7457		1885		1527		18170

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203802A - Other Missile Product Improvement Programs

PROJECT
781

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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) Preliminary Design Review (PDR)																	1 PDR											
(2) Critical Design Review (CDR)																	2 CDR											
Engineering Development Tests (EDT)																	EDT											
Pre-Production Tests (PPT)																	PPT											
(3) Limited User Tests (LUT)																	3 LUT											
Initial Operational Test and Evaluation (IOTE)																	IOTE											

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs					PROJECT 781	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Preliminary Design Review (PDR)	1Q							
Critical Design Review (CDR)	3Q							
Engineering Development Tests (EDT)		1Q						
Pre-Production Tests (PPT)		4Q						
Limited User Tests (LUT)			1Q					
Initial Operational Test and Evaluation (IOTE)				1Q				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0208053A - Joint Tactical Ground System						PROJECT 635		
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
635 JOINT TACT GRD STATION-P3I (MIP)	14987	23215	1957	19274	7986	8200	9300		84919

A. Mission Description and Budget Item Justification: This program element supports development of critical improvements and insertion of technological upgrades to the Joint Tactical Ground Station (JTAGS) and the research and development of the JTAGS Pre-Planned Product Improvement (P3I). JTAGS is a transportable information processing system that receives and processes in-theater, direct down-linked data from Defense Support Program (DSP) satellites. JTAGS disseminates warning, alerting, and cueing information on Ballistic Missiles and other tactical events of interest throughout the theater using existing communication networks. This program is designated as a DoD Space program. JTAGS is designated as the in-theater element of the United States Strategic Command's Theater Event System. JTAGS supports all Theater Missile Defense pillars and by being located in-theater, provides the shortest sensor to shooter connectivity. JTAGS is required to remain viable through FY13. The objectives of the improvements are to upgrade JTAGS to a new configuration for operation with the next generation of Space Based Infrared System (SBIRS), and to improve warning accuracy and timeliness. The P3I follow on program is no longer a fiscally cooperative effort but is still a joint interest development effort with the U.S. Air Force.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Complete Rebaseline Block I & Begin Block II P3I Follow On Integrated Product and Process Development (IPPD)	7548	10027	1957
Continue Block II P3I Follow On Development	6939	13088	
JTAGS Test and Evaluation Support	500	100	
JTAGS Modernization			
Total	14987	23215	1957

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
7 - Operational system development	0208053A - Joint Tactical Ground System			635
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	14878	23462	7954	
Current BES/President's Budget (FY 2009)	14987	23215	1957	
Total Adjustments	109	-247	-5997	
Congressional Program Reductions				
Congressional Rescissions				
Congressional Increases				
Reprogrammings				
SBIR/STTR Transfer				
Adjustments to Budget Years	109	-247	-5997	

<u>C. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
BZ8420 Joint Tactical Ground Station Mods (JTAGS)	328			7309	5649				17791
BZ8430 JTAGS M3P Institutional Training Equipment	9484								11389

Comment:

D. Acquisition Strategy Under this program element, critical improvements will be developed making maximum use of Non-Developmental Items(NDI)/Commercial Off-The-Shelf (COTS) components. After design and integration, the system will be subject to a thorough developmental and operational testing to verify performance and operational effectiveness and suitability. All Block I (referred to as DSP Only Multi-Mission Mobile Processor (M3P)(DM3P)) activities (including development and testing) were rebaselined and resources refocused to maintain viability of JTAGS. P3I Block II was a joint interest developmental effort with the U.S. Air Force; however Block II (formerly referred to as SBIRS High, Geosynchronous M3P) activities are being rebaselined to modernize the currently fielded JTAGS with the incorporation of SBIRS HEO and GEO raw satellite data receipt and processing and dissemination functionality."

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0208053A - Joint Tactical Ground System							635		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Competitive/Cost Plus Award Fee	Lockheed / Sunnyvale, CA	29191							Cont.	Cont.	Cont.
Engineering Services Software	Sole Source/Cost Plus Fixed Fee	Northrop Grumman / Azusa, CA	10045	1830	1-3Q	300	2Q				12175	
Engineering Services Hardware	Sole Source/Cost Plus Fixed Fee	Northrop Grumman / Boulder, CO		5109	3-4Q	12788	2-3Q				17897	
Government Furnished Equipment	N/A	Multiple	919	216	2-3Q						1135	
Subtotal:			40155	7155		13088				Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering IPPD Support	Sole Source/Cost Plus Fixed Fee	Multiple	15966	2457	2-3Q	2525	2-3Q			Cont.	Cont.	
Subtotal:			15966	2457		2525				Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
White Sands Missile Range	N/A	Multiple	3772	500		100				Cont.	Cont.	Cont.
Subtotal:			3772	500		100				Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0208053A - Joint Tactical Ground System	PROJECT 635
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Remarks: N/A-Not Applicable

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Government IPPD	N/A	Multiple	18606	3302	1-4Q	5929	1-4Q	1957	1-4Q	Cont.	Cont.	Cont.
Contractor IPPD			15449	1573	1-4Q	1573	1-4Q				18595	
Subtotal:			34055	4875		7502		1957		Cont.	Cont.	Cont.
Project Total Cost:			93948	14987		23215		1957		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0208053A - Joint Tactical Ground System

PROJECT
635

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13											
	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 DEVELOPMENT	P3I DEVELOPMENT																																			
JTAGS P3I IHEO DEVELOPMENT	IHEO DEVELOPMENT																																			
P3I PHASE IIa TEST	P3I PHASE IIa TEST																																			
P3I PHASE IIa UNIT FIELDING									P3I PHASE IIa UNIT FIELDING																											
P3I PHASE IIa UNIT FIELDING													P3I PHASE IIa UNIT FIELDING																							
P3I PHASE IIa UNIT FIELDING																	P3I PHASE IIa UNIT FIELDING																			
P3I PHASE IIa UNIT FIELDING																					P3I PHASE IIa UNIT FIELDING															
P3I PHASE IIa UNIT FIELDING																									P3I PHASE IIa UNIT FIELDING											
JTAGS P3I GEO DEVELOPMENT													GEO DEVELOPMENT																							
JTAGS P3I GEO (PHASE II) TEST																					JTAGS P3I GEO (PHASE II) TEST															
P3I PHASE IIb UNIT FIELDING																									P3I PHASE IIb UNIT FIELDING											
P3I PHASE IIb UNIT FIELDING																													P3I PHASE IIb UNIT FIELDING							
P3I PHASE IIb UNIT FIELDING																													P3I PHASE IIb UNIT FIELDING							
P3I PHASE IIb UNIT FIELDING																													P3I PHASE IIb UNIT FIELDING							
P3I PHASE IIb UNIT FIELDING																													P3I PHASE IIb UNIT FIELDING							

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0208053A - Joint Tactical Ground System

PROJECT
635

<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>
P3I DEVELOPMENT	2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q
JTAGS P3I IHEO DEVELOPMENT	2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q			
P3I PHASE IIa TEST	2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q			
P3I PHASE IIa UNIT FIELDING				2Q			
P3I PHASE IIa UNIT FIELDING				3Q			
P3I PHASE IIa UNIT FIELDING				4Q			
P3I PHASE IIa UNIT FIELDING					1Q		
P3I PHASE IIa UNIT FIELDING					3Q		
JTAGS P3I GEO DEVELOPMENT			1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q
JTAGS P3I GEO (PHASE II) TEST				4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q
P3I PHASE IIb UNIT FIELDING							2Q
P3I PHASE IIb UNIT FIELDING							3Q
P3I PHASE IIb UNIT FIELDING							3Q
P3I PHASE IIb UNIT FIELDING							4Q
P3I PHASE IIb UNIT FIELDING							4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0208058A - Joint High Speed Vessel (JHSV)						PROJECT JH1	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
JH1 JOINT HIGH SPEED VESSEL MANUFACTURING TECHNOLOGY	19752	5116	2936	3133	3251	3252	3379		40819

A. Mission Description and Budget Item Justification: The Joint High Speed Vessel (JHSV) program is a merger of the Army's Theater Support Vessel (TSV) program and the Marine Corps/Navy High Speed intra-theater surface Connector (HSC) program into a joint (multi-service) High Speed Vessel program. The JHSV program takes advantage of inherent commonality hull forms to create a more flexible asset for the Department of Defense and leverage the Navy's core competency in ship acquisition. The JHSV program will provide high speed intra-theater surface connector capability to rapidly deploy troops and equipment together and then immediately transition to execute, even in the absence of developed infrastructure, and conduct deployment and sustainment activities in support of multiple simultaneous, distributed, decentralized battles and campaigns. The primary missions include: support to Theater Security Cooperation Program (TSCP) and Global War on Terrorism (GWOT), littoral maneuver, and seabasing support. Department of Army (DA) and Department of Navy (DoN) will maintain separate and distinct funding streams to support this joint program. DA will resource to the critical Army requirement set validated for the joint Initial Capabilities Document (ICD) for High Speed Intra-theater Surface Connector (HSC) and the Capability Development Document (CDD) for JHSV. DA and DoN will focus on the development of common capabilities, each Department will source their unique developmental costs for unique service capabilities that cannot be incorporated into a combined solution set.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
FY07-FY09: Provide Program Management Support.	950	1000	1050
FY07-FY09: Provides Acquisition/Documentation Development.	1845	1700	500
FY07-FY09: Continues Technical/Design Development	16389	2416	1386
Small Business Innovative Research/Small Business Technology Transfer Program	568		
Total	19752	5116	2936

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
7 - Operational system development	0208058A - Joint High Speed Vessel (JHSV)			JH1
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	20172	5148	2955	
Current BES/President's Budget (FY 2009)	19752	5116	2936	
Total Adjustments	-420	-32	-19	
Congressional Program Reductions				
Congressional Rescissions		-32		
Congressional Increases	148			
Reprogrammings				
SBIR/STTR Transfer	-568			
Adjustments to Budget Years			-19	

<u>C. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
OPA 3, M11203, Joint High Speed Vessel (JHSV),		208851	168846	168564	168870	168455		Continuing	Continuing

Comment:

D. Acquisition Strategy The JHSV program will combine the two separate programs (Theater Support Vessel (TSV) - Army and High Speed Connector (HSC) - Navy) and take advantage of inherent commonality of hull forms to create a more flexible asset for the Department of Defense. Based on the efforts accomplished and data collected to date by the two services, it appears that a hardware solution will incorporate the evolutionary development of commercial based high speed vessel technology employing integrated military unique capabilities/adaptations. The JHSV would be acquired competitively and production would be based in the United States. The Joint High Speed Vessel (JHSV) program Acquisition Strategy is currently under development. The JHSV program Milestone A Defense Acquisition Board (DAB) was in April 2006. Milestone B is planned for August 2008.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0208058A - Joint High Speed Vessel (JHSV)							JH1		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Acquisition/Documentation Development	MIPR	PEO Ships Washington Navy Yard, DC	2326	1845	1-2Q	1700	1-2Q	500	1-2Q		6371	
Technical/Design Development	MIPR	PEO Ships Washington Navy Yard, DC		16389	1-2Q	2416	1-2Q	1386	1-2Q		20191	
Subtotal:			2326	18234		4116		1886			26562	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	PWD	PM Force Projection, TACOM, Warren, MI	800	950	1-2Q	1000	1-2Q	1050	1-2Q		3800	
SBIR/STTR				568							568	
Subtotal:			800	1518		1000		1050			4368	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

7 - Operational system development

0208058A - Joint High Speed Vessel (JHSV)

JH1

Project Total Cost:

3126

19752

5116

2936

30930

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0208058A - Joint High Speed Vessel (JHSV)

PROJECT
JH1

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13							
	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) Acquisition Milestones																																
Source Selection																																
(2) Award Lead Vessel																																

1
MS B
2

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0208058A - Joint High Speed Vessel (JHSV)					PROJECT JH1	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Acquisition Milestones								
Acquisition Milestones		4Q						
Source Selection	1Q - 4Q	4Q						
Award Lead Vessel		4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE							
7 - Operational system development		0303140A - Information Systems Security Program							
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	56583	31403	38090	39974	38329	36161	37013	Continuing	Continuing
491 INFORMATION ASSURANCE DEVELOPMENT	8407	17239	11739	12323	12089	9427	9770		80994
501 ARMY KEY MGT SYSTEM	1504	960	1027	1915					5406
50B BIOMETRICS	46672	13204	25324	25736	26240	26734	27243	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Communications Security Equipment Program develops Information Systems Security (ISS) equipment and techniques required to combat threat Signal Intelligence capabilities and to insure the integrity of data networks. The Army's Research Development Test and Evaluation (RDTE) ISS program objective is to implement National Security Agency (NSA) developed security technology in Army information systems. Communications Security Equipment (COMSEC) technology ensures total signal and data security for all Army information systems to include any operational enhancement and specialized Army configurations. The Army Key Management System (AKMS) automates key generation and distribution while supporting joint interoperability. It provides communications and network planning with key management. AKMS is a part of the management/support infrastructure for the Warfighter Information Network - Tactical (WIN-T) program. Additional modifications to the AKMS baseline are required to support the emerging WIN-T architecture. System security engineering, integration of available Information Security (INFOSEC) products, development, and testing are provided to ensure that Command, Control, Communications and Computer Intelligence (C4I) systems are protected against malicious or accidental attacks. Several joint service/NSA working groups exist in the area of key management in order to avoid duplication and assure interoperability between all systems, including the establishment of standards and testing. The Defense Information Systems Agency (DISA) Multi-Level Security (MLS) working group coordinates all the different ongoing technology efforts. This program will also develop, integrate, and demonstrate Command and Control (C2) Protect Common Tools into C4I systems that manage, protect, detect and react to C2 system vulnerabilities, threats, reconfigurations, and reconstitutions. Modeling, simulation, and risk management tools will be used to develop C2 Protect capabilities, enabling the warfighter to distribute complete and unaltered information and maintain a dynamic, continuous synchronous operational force.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
7 - Operational system development	0303140A - Information Systems Security Program		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	25466	28332	26720
Current BES/President's Budget (FY 2009)	56583	31403	38090
Total Adjustments	31117	3071	11370
Congressional Program Reductions	-285		
Congressional Rescissions			
Congressional Increases	1923	3350	
Reprogrammings	23300		
SBIR/STTR Transfer		-829	
Adjustments to Budget Years	6179	550	11370

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303140A - Information Systems Security Program						PROJECT 491	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
491 INFORMATION ASSURANCE DEVELOPMENT	8407	17239	11739	12323	12089	9427	9770		80994

A. Mission Description and Budget Item Justification: This project implements National Security Agency (NSA) developed security technologies in Army information systems. Project objectives are to provide systems security mechanisms through encryption, trusted software or standard operating procedures, and to integrate these mechanisms into specified systems, securing operations in as transparent a manner as possible. This entails architecture studies, modeling, system integration and testing, installation kits, and certification and accreditation of Automation Information Systems. Project will also assess, develop, integrate and demonstrate information assurance (IA) common tools (hardware and software) providing protection for fixed infrastructure post, camp and station networks as well as efforts on tactical networks. The cited work is consistent with Strategic Planning Guidance, and the Army Modernization Plan.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Crypto Mod and Key Management Program. FY07: Supported development of net centric technologies for the Tactical Network, Modularity and the Global War on Terror. Implemented Inline Network Encryptor (INE) and Link Encryption Family (LEF) Evolution Plans. Planned Army Secure Wireless Local Area Network (LAN) Strategy using SecNet54 and other products for Div and Below. Developed Information Assurance Plan for Future Combat System (FCS). Completed evaluation and supported fielding of KG175B/C/D, KIV7M, and SecNet54 (Secure Wireless LAN). Conducted initial fielding of Secure Voice Over IP. Evaluating Secure Mobile Environment/Personal Electronic Device (SME/PED) including voice and data capability and email migration. FY08: Field Crypto Mod compliant devices, including KG-175D, KIV19M TACLANE Router KG-240A, KG-245A and KG-250B Software upgrades for existing devices including KG-175A, KG-175B and Talon. Deploy secure voice capability VIA kov-26(TALON)device. Strategic deployment of SME/PED device below GO/SES level, initial tactical deployment of device at DIV/BDE and below level. Test and evaluation of Army secure network devices to HAIPE 3 and IPv6. FY09: Will field CM compliant devices, including Taclane 10G, KG-245X and KG-250D. Evaluate and deploy software upgrades for all existing INE devices. Deploy initial Encrypted Network Interfaces. Deploy HAIPE 3 compliant devices. Initial pilot conversion of Army secure networks to HAIPE 3.0 and IPv6. Conduct tactical deployment of SME/PED device below GO level.	4660	9912	7039
Tactical C2 Protect Tools / Tactical PKI. FY 07: Developed/validated/enhanced IA tools for the tactical War fighter. Functionally evaluated, performed vulnerability assessments/performance testing and source code analysis on tools for fielding. Both commercial off-the-shelf/government off-the-shelf(COTS/GOTS) IA tools for deployment were evaluated for use in support of Army priorities, modularity and the Global War on Terrorism. Developed TPKE solution for Future Force use as well as Current Systems planned to interface with Future Force systems. Performed necessary field experiments as well as integration testing, system level testing and Vulnerability testing. FY08: Develop/validate/enhance IA tools for the tactical War fighter. Functionally evaluate, perform vulnerability assessments/performance testing and source code analysis on tools for fielding. Evaluate both COTS/GOTS IA tools for deployment for use in support of Army priorities, modularity and the Global War on Terror. Validate TPKE solution for Future Force use as well as Current Systems planned to interface with Future Force systems. Perform necessary field experiments as well as integration testing, system level testing and Vulnerability testing. Support FCS spinout 1 TPKE deployment. FY09: Will develop/validate/enhance IA tools	3554	6895	4700

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0303140A - Information Systems Security Program	PROJECT 491
for the tactical Warfighter. Functionally perform vulnerability assessments/performance testing on tactical tools for fielding. Both COTS/GOTS IA tools for deployment will be evaluated for use to support. Army priorities, modularity and the Global War on Terrorism. Will modify/enhance FCS TPKE spinout 1 baseline and validate/test final software/hardware for fielding in FY 10.		
Small Business Innovative Research/Small Business Technology Transfer Program	193	432
Total	8407	17239

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
OPA TA0600	83280	47400	47444					Continuing	119154

Comment:

C. Acquisition Strategy The objective of this project is to develop, integrate and validate hardware and software solutions that will secure current and objective architecture and electronic business/commerce transactions. Project focuses on completing development and evaluation of Battle Command and control IA Common tools and the procurement and institutionalization of information assurance related hardware and software, as well as techniques and procedures. The objective of the DOD CRYPTO Modernization Program is to provide adaptive, flexible, and programmable cryptographic systems using best practices, lessons learned and programmatic management to meet the challenge of modernizing the Army's aging cryptographic systems.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0303140A - Information Systems Security Program							491		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
System Engineering		CECOM, RDEC	33960	4863	1Q	12332	1Q	5735	1Q	Cont.	Cont.	Cont.
Hardware/Software Engineering	Various	CECOM, RDEC	5224								5224	
C2 Protect Common Tools	Subcontracts reflected in d. through k. below	Subcontracts reflected in d. through k. below	8099							Cont.	Cont.	Cont.
Engineering Support	Various	CECOM, RDEC	7847			120	4Q				7967	
Engineering Support	T&M	Lockheed Martin/SRI Int., Eatontown, NJ	1843	75	1Q					Cont.	1918	Cont.
Information Assurance System Engineering Support	C-Reimburs	MITRE, McLean, VA	1413	300	1Q	465	1Q	400	1Q		2578	
Malicious Mobile Code Analysis	T&M	ILEX Tinton Falls, NJ	577								577	
Information Assurance System Engineering Support	T&M	DSCI Consulting	2005	850	1Q		1Q		1Q	Cont.	2855	Cont.
Engineering Support	T&M	VIATECH				1722	1Q	2104	1Q	Cont.	Cont.	Cont.
Tactical Intrusion Detection System	T&M	MIT, Cambridge, MA	135								135	
Model & Simulation for Information Assurance Trainer	T&M	Atlantic Consulting Services, GA	1020								1020	
DHIAP	Various	CIO/G6 BMO	12027								12027	
DoD Biometrics Program	Various	CIO/G6 BMO	18280								18280	
Crypto Mod	Various	CECOM, RDEC	274								274	Cont.
Engineering Support	T&M	CACI				600	1Q				600	
Engineering Support	T&M	Booze Allen, Eatontown, NJ	450	643		500	2Q				1593	Cont.
Engineering Support	T&M	CSC, Virginia	684	1676	1Q	1500	1Q	3500		Cont.	Cont.	Cont.
Subtotal:			93838	8407		17239		11739		Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0303140A - Information Systems Security Program	PROJECT 491
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II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

Remarks: Not Applicable

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

Remarks: Not Applicable

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

Remarks: Not Applicable

Project Total Cost:	93838	8407		17239		11739		Cont.	Cont.	Cont.
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303140A - Information Systems Security Program						PROJECT 501	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
501 ARMY KEY MGT SYSTEM	1504	960	1027	1915					5406

A. Mission Description and Budget Item Justification: Provides Commander with an automated capability to plan, engineer, distribute, and manage all systems that employ Electronic Key, Electronic Protection (EP), and Signal Operating Instructions (SOI).

- AKMS consists of two Workstations, one hosting Local COMSEC Management Software (LCMS) for COMSEC Management, one hosting Automated Communication Engineering System (ACES) for Cryptonet Planning and the Data Transfer Device (DTD)/Simple Key Loader (SKL).
- LCMS is the COMSEC accounting and generation software that provides Information Systems with Cryptographic Key capability.
- ACES provides Information Systems with Cryptonet Planning & SOI/EP Fill for Combat Net.
- SKLs move the ACES/LCMS data to End Crypto Units (ECUs).

Accomplishments/Planned Program:	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Continue development of next set of software tools for the AKMS workstation development environment to support Army modularity requirements.	930	586	649
Engineering Support	405	297	328
Test and Evaluation	125	50	50
Small Business Innovative Research/Small Business Technology Transfer Programs	44	27	
Total	1504	960	1027

B. Other Program Funding Summary	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
BA1201 TSEC - AKMS	14864	27793	35003	32490	20301	12944	6088	Continuing	Continuing

Comment:

C. Acquisition Strategy Milestone III was conducted in FY99 and the acquisition strategy and type classification for LCMS was approved. LCMS completed fielding to all COMSEC custodians as well as the IOC for ACES 2QFY02. Because of National Security Agency's (NSA) imposition of additional security requirements, the AKMS acquisition strategy to procure Simple Key Loaders was updated in an Acquisition Decision Memorandum (ADM) approved by the PEO C3T Milestone Decision Authority (MDA) 3QFY02. The production contract for the Simple Key Loader (SKL), the upgrade to the DTD, was awarded FY03. SKL Fielding began 3QFY05. The RDTE effort continues in accordance with the approved Acquisition Strategy. The upgrade to ACES v1.7 Block II software was completed 2QFY06. ACES v1.8 upgrade effort began 2QFY06 and was completed

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0303140A - Information Systems Security Program

PROJECT

501

4QFY07. ACES software v1.9 began development in FY08. The SKL initial software v3.0 was completed in FY06 and v4.0 was completed and released 3QFY07. SKL software v5.0 development began 1QFY08. FY09 will continue development of next generation of AKMS software tools to meet emerging Army systems' requirements.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0303140A - Information Systems Security Program							501		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software development	C/T&M	SYPRIS, Tampa, FL	21469	614	1-2Q	335	1-2Q	387	1-2Q	Cont.	Cont.	
Software development/Upgrade	C/T&M	ISS, Tinton Falls, NJ	5300								5300	
Electronic Key Management Sys (EKMS)	MIPR	Navy, Washington	3900								3900	
Software Support	CPFF	SAIC, San Diego, CA	450	283	1-2Q	250	1-2Q	255	1-2Q	Cont.	Cont.	
Subtotal:			31119	897		585		642		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Testing	MIPR	SPAWAR, San Diego, CA	125	125	2Q	50	2Q	50	2Q	Cont.	Cont.	
Subtotal:			125	125		50		50		Cont.	Cont.	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering	C/T&M	TELOS System Integration, Ashburn,	154								154	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT	
7 - Operational system development			0303140A - Information Systems Security Program							501	
		VA									
Government Engineering	MIPR	CECOM, Fort Monmouth, NJ	1560	482	2-4Q	325	2-3Q	335	2-3Q	Cont.	Cont.
Subtotal:			1714	482		325		335		Cont.	Cont.
Project Total Cost:			32958	1504		960		1027		Cont.	Cont.

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0303140A - Information Systems Security Program

PROJECT
501

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13						
	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			
LCMS	S/W Development Versions 5.1/5.1.1																														
ACES Block III Upgrades	ACES v1.8				ACES v1.9				ACES Block III Future Upgrades				ACES Software Support																		
Simple Key Loader (SKL) (Tier 3)																															
SKL Hardware Production/Fielding	Hardware Production/Fielding																														
SKL Block Upgrades V4.0	V4.0																														
SKL Block Upgrades V5.0			V5.0																												
Future SKL Block Upgrades										Blk III Upgrades																					
CJSMPT																															
CJSMPT,	Phase I				Phase II																										
CJSMPT Sustainment						Sustainment																									
(1) Transition to DISA																															

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303140A - Information Systems Security Program					PROJECT 501	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Local COMSEC Management Software								
LCMS	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 3Q				
ACES Block III Upgrades	1Q - 2Q							
ACES Block III Upgrades	1Q - 4Q							
	4Q	1Q - 4Q						
			1Q - 4Q	1Q - 4Q				
					1Q - 4Q	1Q - 4Q	1Q - 4Q	
Simple Key Loader (SKL) (Tier 3)								
SKL Hardware Production/Fielding	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
SKL Block Upgrades V4.0	1Q - 3Q							
SKL Block Upgrades V5.0	4Q	1Q - 4Q						
Future SKL Block Upgrades		4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
CJSMPT	1Q - 4Q	1Q - 2Q						
CJSMPT	1Q - 4Q	1Q - 2Q						
		2Q - 4Q	1Q - 3Q					
CJSMPT Sustainment		2Q - 4Q	1Q - 4Q	1Q - 4Q				
Transition to DISA				4Q				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303140A - Information Systems Security Program						PROJECT 50B	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
50B BIOMETRICS	46672	13204	25324	25736	26240	26734	27243	Continuing	Continuing

A. Mission Description and Budget Item Justification: Secretary of the Army (SA) is the Executive Agent for the Department of Defense (DoD) Biometrics (automated methods of human recognition) Program. The program consists of the Biometrics Task Force (BTF) which includes the Biometrics Fusion Center (BFC). The BTF will synchronize and integrate existing and new technologies throughout DoD; provide identity dominance, protection and management through integrated joint biometric programs; establish and maintain an authoritative biometric data source in order to provide timely, accurate and comprehensive identity superiority to the Warfighter. The BFC is the biometric technology center of excellence for the DoD, focusing on system enhancement, capability improvements and emerging technologies to support the Warfighter. The BFC provides conformance testing and supports test and evaluation of Commercial Off-the-Shelf (COTS) biometrics, supports the development standards and performance measures, provides biometric repository support as required, and provides technical implementation and integration to DoD Biometrics. The testing and evaluation conducted by the BFC supports the development of emerging technologies that enhance the Family of Capabilities and Modalities that interfaces with the biometric core enterprise. The biometric program focuses on an enterprise approach, emphasizing interoperability and utilizing tested biometric technologies for incorporation into DoD business processes. This program sustains current and next generation enterprise development to support all DoD Services. This program was previously under PE 0303140A, Project 491 This system supports the Current-to-Future transition path of the Transformation Campaign Plan (TCP). This funding provides continuous improvement in technologies that support the Warfighter's ability to exercise Identity Dominance over non-traditional enemies.

NOTE:

FY 2007 funding total includes \$31,600 received in GWOT supplemental.

FY 2008 funding total does not include \$23,300 previously requested for current FY 2008 GWOT requirements.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Support test and evaluation of biometric commercial hardware and software to determine suitability for use within DoD. Conduct modeling and simulation efforts to support operational evaluation. Conduct DoD-wide working groups to synthesize enterprise biometric requirements and abilities into biometrics technology demonstrations and pilot activities. Support biometric integration in existing command and control and MIS systems. FY09 and out year funding will support an uninterrupted Biometric capability that will include new and emerging technologies and modalities to support the Warfighter and Interagency operations. Through continuous enhancements to the Automated Biometric Identification System (ABIS) the Average Automated Match response time decreased from 27 minutes to 14 minutes from 3rd qtr FY07 to 1st qtr FY08. During this same timeframe over 400k of Biometric records were added to the database bringing the total to just under 2 million records within the ABIS. As this database grows it allows the Warfighter greater ability to maintain identity dominance over potential non-traditional enemies. The continuous response time improvements will lead to near real time identification capability.	46239	12828	25324
Small Business innovative Research/Small Business Technology Transfer Program	433	376	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0303140A - Information Systems Security Program	PROJECT 50B
Total	46672	13204

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
TA0600 - Information Systems Security Program	1465	3006	3881	3697	3476	3390	3301		29801
432144 - Operations and Maintenance Army	10332	11977	11108	11468	11825	12085	12351		94104

Comment:

C. Acquisition Strategy The objective of this project is to develop biometric systems that interoperate to provide and/or verify the identities of persons of interest; a major component of this is the next generation DoD Automated Biometrics Identification System (ABIS) that will be managed at the enterprise level. ABIS currently provides a biometric matching capability that can identify national security threats in support of the Global War on Terrorism for a variety of functions. Primary focus for FY06 was to establish the biometrics program of record and develop a framework for leveraging technologies and processes to facilitate better sharing of biometric data on persons of interest collected and forwarded to other DoD agencies and to develop a biometric implementation strategy for Homeland Security Presidential Directive (HSPD)-12. The program will also continue to support the testing and evaluation of products and other analysis and evaluation of applicable technologies, as well as finalize and synthesize an interoperable biometric enterprise approach. FY09 and beyond will continue to support technology, pilot test and evaluation activities and the deployment of biometric devices and systems used for biometric data collection and processing, physical access, logical access, identity proofing, intelligence exploitation, and law enforcement.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0303140A - Information Systems Security Program							50B		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Enterprise Development	Various	Various	72045	46672	1-4Q	13204	1-2Q	25324	1-2Q	Cont.	Cont.	Cont.
Subtotal:			72045	46672		13204		25324		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
N/A												
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
N/A												
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
N/A												
Subtotal:												
Project Total Cost:			72045	46672		13204		25324		Cont.	Cont.	Cont.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE							
7 - Operational system development		0303141A - Global Combat Support System							
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	47092	94089	104934	79356	31739	32182	32972	Continuing	Continuing
083 GLOBAL COMBAT SUPPORT SYS - ARMY (GCSS-ARMY)	30760	53919	62538	50901	25239	25687	26411	Continuing	Continuing
08A PRODUCT LIFECYCLE MANAGEMENT PLUS (PLM+)	16332	40170	42396	28455	6500	6495	6561	Continuing	Continuing

A. Mission Description and Budget Item Justification: Global Combat Support System-Army (GCSS-Army) has two components: a functional component titled GCSS-Army (Field/Tactical) (F/T) and a technology enabler component titled Product Lifecycle Management Plus (PLM+). GCSS-Army (F/T) coupled with GCSS-Army (PLM+) are information and communications technology investments that will provide key enabling support to the transformation of the Army into a network-centric, knowledge-based future force. The GCSS-Army approved Joint Capability Description Document (CDD) requires an enterprise approach to replace current logistics and maintenance Standard Army Management Information Systems (STAMIS). As the tactical component of the Single Army Logistics Enterprise (SALE), GCSS-Army (F/T) will provide the Army's Combat Support/Combat Service Support (CS/CSS) warfighter with a seamless flow of timely, accurate, accessible and secure information management that gives combat forces a decisive edge. PLM+ will provide interfaces to external systems and limited Master Data Management. GCSS-Army will implement best business practices to streamline supply, accountability, maintenance, distribution, and reporting procedures in support of the future force transition path of the Army Campaign Plan.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
7 - Operational system development	0303141A - Global Combat Support System		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	47986	129689	105567
Current BES/President's Budget (FY 2009)	47092	94089	104934
Total Adjustments	-894	-35600	-633
Congressional program reductions		-35600	
Congressional rescissions			
Congressional increases			
Reprogrammings	352		
SBIR/STTR Transfer	-1246		
Adjustments to Budget Years			-633

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0303141A - Global Combat Support System					PROJECT 083		
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost	
083 GLOBAL COMBAT SUPPORT SYS - ARMY (GCSS-ARMY)	30760	53919	62538	50901	25239	25687	26411	Continuing	Continuing	

A. Mission Description and Budget Item Justification: Global Combat Support System-Army (Field/Tactical) will provide the Army's CS/CSS warfighter with a seamless flow of timely, accurate, accessible, actionable, and secure information not readily available today that gives combat forces a decisive edge. GCSS-Army will modernize automated logistics by implementing best business practices to streamline supply operations, maintenance operations, property accountability, and logistics management and integration procedures in support of the Future Force transition path of the Army Campaign Plan. This effort will implement a comprehensive logistics automation solution for the field (deployable) Army and provide the Commander on the battlefield with an integrated, interoperable view of the battle-space in time to support decisions that will affect the outcome of combat operations, combat power, and planning for future operations. This solution implements Commercial-Off-The-Shelf (COTS) Enterprise Resource Planning (ERP) products. This will also allow the Army to retire multiple custom designed standalone business software baselines optimized to existing Army business processes and replace it with a single integrated business software baseline that has been optimized to industry defined best business practices. It will eliminate the need for extensive maintenance and modification of aging, diverse software systems resulting in improved and efficient change control and configuration management through implementation of an enterprise system.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
PM Operations	4853	6158	13938
GCSS-Army ERP	24714	43397	42102
PM SALE Operations	1193	3000	6498
Small Business Innovative Research/Small Business Technology Transfer Programs		1364	
Total	30760	53919	62538

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
OPA SSN: W00800, STACOMP	4532	10333	18200	68700	183400	194651	198612	Continuing	Continuing
OMA APE: 432612	2300	2074	2800	44897	74305	52686	103194	Continuing	Continuing
OPA SSN: BZ8889, AUTOMATION IDENTIFICATION TECHNOLOGY		76	3969	16377	17390			Continuing	Continuing

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0303141A - Global Combat Support System

PROJECT

083

C. Acquisition Strategy GCSS-Army has an evolutionary acquisition strategy as defined in DoD Directive 5000.1 and DoD Instruction 5000.2 and will define, develop and produce/deploy an initial, militarily useful (and supportable) operational capability based upon proven technology, time-phased requirements, projected threat assessments, and demonstrated manufacturing capabilities in as short a time as possible. The system will be developed in multiple increments as functional capabilities are defined and as integration and synchronization opportunities with related systems present opportunities for subsequent increments. Increment I will be a viable stand alone capability that will not require subsequent increments to be operational.

GCSS-Army Increment I will be implemented in two segments. Increment I, Segment 1, will consist of an integrated system focusing on direct support supply functionality at a single unit with the hooks to maintenance and other future modules as part of an Operational Assessment. increment I, Segment 2, integrates the maintenance, ammunition, and property book functionality for a complete integrated system.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0303141A - Global Combat Support System							083		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Enterprise Resource Planning (ERP) Implementation	C/FP	Northrop Grumman, Chester, VA	159562	19692	1-4Q	4850					184104	Cont.
Enterprise Resource Planning (ERP) Implementation	C+/FF	Northrop Grumman, Chester VA			2-4Q	34722	1-4Q	44464	1-4Q	Cont.	Cont.	
Tactical Combat Developer	MIPR	CASCOM, Ft Lee, VA	9255	1200	1Q	1600	1-4Q	1600	1-4Q	Cont.	Cont.	Cont.
Subtotal:			168817	20892		41172		46064		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PM Support	C/FP	L3/Titan Corp, Colonial Heights, VA	18665	1630	1-4Q	2000	1-4Q	2000	1-4Q	Cont.	Cont.	Cont.
Engineering and Security	MPIR	ISEC, Ft Huachuca, AZ	13848	1134	1-4Q	1142	1-4Q	1400	1-4Q	Cont.	Cont.	Cont.
Technical Services	C/FP	Log Mgt Institute, McLean, VA	12537	458			1-4Q	500	1-4Q	Cont.	Cont.	Cont.
Subtotal:			45050	3222		3142		3900		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Army Test & Evaluation Center/Operational Test Command	MIPR	ATEC/OTC, Ft Irwin, TX	1233	600	1-4Q	448	1-4Q	4000	1-4Q	Cont.	Cont.	Cont.
Subtotal:			1233	600		448		4000		Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0303141A - Global Combat Support System							083		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PMO Operations	NA	NA	24610	4853	1-4Q	6157	1-4Q	5574	1-4Q	Cont.	Cont.	Cont.
PM SALE Operations				1193		3000	1-4Q	3000	1-4Q	Cont.	Cont.	
Subtotal:			24610	6046		9157		8574		Cont.	Cont.	Cont.
Project Total Cost:			239710	30760		53919		62538		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0303141A - Global Combat Support System

PROJECT
083

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
Increment 1 - Enterprise Risk Assessment Methodology																												
Increment 1 - Acquisition Review																												
Increment 1/Segment 1 Operational Assessment																												
Increment 1/Segment 2 Development and Test																												
(1) Increment 1 - Milestone B																												
Increment 1 - Milestone C																												
Increment 1 - IOT&E																												
Increment 1 - Full Fielding																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303141A - Global Combat Support System					PROJECT 083	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Increment 1 - Enterprise Risk Assessment Methodology	3Q							
Increment 1 - Acquisition Review		1Q						
Increment 1/Segment 1 Operational Assessment		1Q - 4Q	1Q - 2Q					
Increment 1/Segment 2 Development and Test		1Q - 4Q	1Q - 4Q	1Q				
Increment 1 - Milestone B		2Q						
Increment 1 - Milestone C				2Q				
Increment 1 - IOT&E				2Q				
Increment 1 - Full Fielding					2Q			
Increment 1 - Initial Operational Capability (IOC)								

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303141A - Global Combat Support System						PROJECT 08A	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
08A PRODUCT LIFECYCLE MANAGEMENT PLUS (PLM+)	16332	40170	42396	28455	6500	6495	6561	Continuing	Continuing

A. Mission Description and Budget Item Justification: Product Life-Cycle Management Plus (PLM+) serves as the technical enabler supporting requirements to integrate National & field logistics components of SALE, harmonize functional product management business rules/processes, and establish a single point of entry for interfaces between Logistics Modernization Program (LMP) and Global Combat Support System (GCSS)-Army (F/T) instances and external systems. PLM+ will be an Army specific commercial off-the-shelf (COTS) web portal implementation via the NetWeaver Platform from developer Systems Applications and Products (SAP) AG to support Army process scenarios and requirements that will provide:

- Hub Services - For a service oriented, Single Point of Entry to connect, mediate, and control the exchange of data
- Optimized Messaging - For routing and transforming message formats among appropriate trading partners
- Customer/Vendor Master Data - The set of business processes and supporting application architecture to centralize the management of master data to ensure accuracy

Hence the PLM+ solution establishes a framework for a fully integrated logistics enterprise that will ultimately provide Commanders Total Visibility from Factory (LMP) to Foxhole (GCSS-Army F/T) thereby ensuring delivery of the right equipment to the right unit at the right time, while reducing backlogs of material on the battlefield.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Product Development	14523	34644	37762
Test and Evaluation		550	583
PM Operations	1809	3853	4051
Small Business Innovative Research/Small Business Technology Transfer Programs		1123	
Total	16332	40170	42396

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
OPA SSN: W11001, PLM+	4136	3236				5049	3688	Continuing	Continuing
OMA APE: 423612		1000	1584	5000	15885	2000	16583	Continuing	Continuing

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0303141A - Global Combat Support System

PROJECT

08A

C. Acquisition Strategy GCSS-Army has an evolutionary acquisition strategy as defined in DoD Directive 5000.1 and DoD Instruction 5000.2, and will define, develop and produce/deploy an initial, militarily useful (and supportable) operational capability based upon proven technology, time-phased requirements, projected threat assessments, and demonstrated manufacturing capabilities in as short a time as possible. The system will be developed in multiple increments as functional capabilities are defined and as integration and synchronization opportunities with related systems present opportunities for subsequent increments. Increment I will be a viable stand alone capability that will not require subsequent increments to be operational.

GCSS-Army Increment I will be implemented in two segments. Increment I, Segment 1 will consist of an integrated SAP system focusing on direct support supply functionality at a single unit with the hooks to maintenance and other future modules as part of an Operational Assessment. Increment I, Segment 2 integrates the maintenance, ammunition, and property book functionality for a completely integrated system.

GCSS-Army will provide a modern, state-of-the-art, web-based ERP solution that will use DoD approved web services standards to facilitate the objectives of "Data Sharing in a Net-Centric Department of Defense" (DoD 8320.2).

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0303141A - Global Combat Support System							08A		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Enterprise Resource Planning (ERP) Implementation	T&M	Computer Sciences Corporation, Falls Church VA	15272	14054	1-4Q	24496	1-4Q	18808		Cont.	Cont.	Cont.
Enterprise Resource Planning (ERP) Implementation	N/A	Govt Dev/Environment Support				11271		18954		Cont.	Cont.	Cont.
Subtotal:			15272	14054		35767		37762		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PM Support	C/FP	Titan Corp, Colonial Heights, VA	435	951	1-4Q	974	1-4Q	1032	1-4Q	Cont.	Cont.	Cont.
PM Support	T&M	LMI/ILLUMINA, Tysons Corner, VA			1Q	1647		1746	1-4Q	Cont.	Cont.	Cont.
Subtotal:			435	951		2621		2778		Cont.	Cont.	Cont.
Remarks: PLM+ FY04-05 funding reflect under Project 083 (GCSS-Army)												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	N/A	ATEC, JITC, CTSF & ISEC				550		583		Cont.	Cont.	Cont.
Subtotal:						550		583		Cont.	Cont.	Cont.
Remarks: PLM+ FY04-05 funding reflect under Project 083 (GCSS-Army)												
IV. Management Services	Contract	Performing Activity &	Total	FY 2007	FY 2007	FY 2008	FY 2008	FY 2009	FY 2009	Cost To	Total	Target

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0303141A - Global Combat Support System							08A		
	Method & Type	Location	PYs Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Complete	Cost	Value of Contract
PMO Operations	NA	NA	359	1327	1-4Q	1232	1-4Q	1273	1-4Q	Cont.	Cont.	Cont.
Subtotal:			359	1327		1232		1273		Cont.	Cont.	Cont.
Remarks: PLM+ FY04-05 funding reflect under Project 083 (GCSS-Army)												
Project Total Cost:			16066	16332		40170		42396		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0303141A - Global Combat Support System

PROJECT
08A

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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) Milestone B (Increment 1)																												
Increment I/Segment 1																												
Final Preparation/Increment I/Segment 1																												
Operational Assessment Segment 1																												
Realization Segment 2																												
Final Preparation/Operational Assessment Segment 2																												
(2) Milestone C																												
Operational Test (IOT)																												
Full Deployment Review																												
Fielding																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303141A - Global Combat Support System					PROJECT 08A	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Milestone B (Increment 1)		2Q						
Increment I/Segment 1	1Q - 2Q							
Final Preparation/Increment I/Segment 1	2Q - 4Q							
Operational Assessment Segment 1		1Q - 2Q						
Realization Segment 2		1Q - 4Q	1Q					
Final Preparation/Operational Assessment Segment 2			1Q - 4Q					
Milestone C				2Q				
Operational Test (IOT)				2Q - 4Q	1Q			
Full Deployment Review					2Q			
Fielding					2Q - 4Q	1Q - 4Q	1Q - 4Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE							
7 - Operational system development		0303142A - SATCOM Ground Environment (SPACE)							
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	31790	107092	106327	131771	69560	104167	121437	Continuing	Continuing
253 DSCS-DCS (PHASE II)	11742	7799	7885	7197	6614	8542	8737	Continuing	Continuing
384 SMART-T	5397								25866
456 MILSATCOM SYSTEM ENGINEERING	7322	26592	16214	8478	8800	8030	8061	Continuing	Continuing
562 MBAND INT SAT TERM MIST	7329	72701	82228	116096	33791	23079	24518	Continuing	Continuing
563 HC3 BLOCK 2 TSAT DEVELOPMENT					20355	64516	80121		164992

A. Mission Description and Budget Item Justification: Military Satellite Communication (MILSATCOM) systems are joint program/project efforts to satisfy ground mobile requirements for each Service, the Joint Chiefs of Staff (JCS), the National Command Authority, the combatant commanders, the National Security Agency, the Office of the Secretary of Defense, and other governmental, non-DoD users. The worldwide MILSATCOM systems are: Ultra High Frequency (UHF) Follow-On Satellite System; Air Force Satellite (FLTSAT/AFSAT) system; the Mobile User Objective System (MUOS); the Super High Frequency (SHF) Defense Satellite Communications System (DSCS); the Wideband Gapfiller System (WGS), the Extremely High Frequency (EHF) and Advanced Extremely High Frequency (AEHF) Mission Planning Element (AMPE); the Joint SATCOM Planning and Tools; and the Transformation Communication System (TCS), all of these systems are required to support legacy, interim and emerging communication space architectures and Objective Force requirements. The Army is responsible for developing and procuring satellite terminals, satellite control subsystems, communication subsystems, and all related equipment. This responsibility also includes maintaining the life cycle logistics support required to achieve end-to-end connectivity and interoperability, satisfying JCS Command, Control, Communications and Intelligence (C3I) in support of the President, JCS, combatant commanders, Military Departments, Department of State, and other government Departments and Agencies.

This program is designated as a DoD Space Program.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
7 - Operational system development	0303142A - SATCOM Ground Environment (SPACE)		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	32420	107849	106999
Current BES/President's Budget (FY 2009)	31790	107092	106327
Total Adjustments	-630	-757	-672
Congressional Program Reductions		-757	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	224		
SBIR/STTR Transfer	-854		
Adjustments to Budget Years			-672

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE)						PROJECT 253	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
253 DSCS-DCS (PHASE II)	11742	7799	7885	7197	6614	8542	8737	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project provides funds to develop strategic and tactical Ground Subsystem equipment in support of Joint Chiefs of Staff (JCS) validated Command, Control, Communications and Intelligence (C3I) requirements for the worldwide Defense Enterprise Wideband SATCOM Systems. It is composed of the Super High Frequency (SHF) Defense Satellite Communications System (DSCS) and Wideband Global SATCOM (WGS) SATCOM programs. Continuing upgrades for the DSCS and WGS are vital to support the emerging power projection and rapid deployment role of the Armed Forces. DSCS and WGS provide warfighters multiple channels of tactical connectivity as well as interfaces with strategic networks and national decision-makers.

Accomplishments/Planned Program:	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Continue the development of the DSCS Integrated Management System (DIMS) Interface Software program	4307	4228	4035
Continue the development of the Common Network Planning Software (CNPS) program	3760	262	
Netcentric Systems Engineering	1319	1100	1565
Continue SATCOM Engineering Lab (SEL), PM Admin, and Systems Engineering Technical Assistance (SETA) efforts	2356	2015	2285
Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)		194	
Total	11742	7799	7885

B. Other Program Funding Summary	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
DSCS Other Procurement Army	72092	124525	88286	164646	130061	127065	129574	Continuing	Continuing

Comment:

C. Acquisition Strategy The DSCS Integrated Management System (DIMS) and Common Network Planning Software (CNPS) are software programs. DIMS provides the capability to electronically disseminate network plans to the monitoring and controlling DSCS Operations Control System (DOCS) subsystems, and retrieve and display subsystem monitoring data. It also provides a comprehensive view of network operations at Wideband Operations Centers and DISA management sites. CNPS will plan strategic and Ground Mobile Forces (GMF) satellite communication networks for DSCS, Wideband Global SATCOM, and commercial satellites. DIMS and CNPS will be installed at Wideband Operations Centers and DISA Management Sites at worldwide locations. PM DCATS will employ Netcentric Systems Engineering to develop the technology for new ground segment equipments which will include paper studies, risk mitigation, system integration and advanced demonstrations for Netcentric Baseband and Policy Based Control to accomodate a multi-cast environment, technology insertion, data sharing, remote operations, architecture efforts and use of commercial technology to conform to Department of

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0303142A - SATCOM Ground Environment (SPACE)

PROJECT

253

Defense (DoD) requirements.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0303142A - SATCOM Ground Environment (SPACE)							253		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
DIMS Software	C / CPFF	JHU/APL, Laurel, MD	29540	3840	1-2Q	3803	1-2Q	3545	1-2Q	Cont.	Cont.	Cont.
CNPS	C / FFP	Northrop Grumman, Winter Park, FL	28221	2906	2Q					Cont.	Cont.	Cont.
MET	S/CPFF	Hypres, Elmsford, NY	1069								1069	
Subtotal:			58830	6746		3803		3545		Cont.	Cont.	Cont.

Remarks: JHU/APL - John Hopkins University/Applied Physics Laboratory

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	Fort Monmouth, NJ	6071	1074	1-2Q	409	1-2Q	640	1-2Q	Cont.	Cont.	Cont.
SETA Support	C / CPFF	Fort Monmouth, NJ	2844	499	1-2Q	318	1-2Q	110	1-2Q	Cont.	Cont.	Cont.
Engineering Support	C / CPFF	Fort Monmouth, NJ	1760	1319	1-2Q	1100	1-2Q	1565	1-2Q	Cont.	Cont.	Cont.
Core Support	Various	Fort Monmouth, NJ	3358	675	1-4Q	675	1-4Q	700	1-4Q	Cont.	Cont.	Cont.
Subtotal:			14033	3567		2502		3015		Cont.	Cont.	Cont.

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
JSEC	MIPR	Fort Monmouth, NJ	7237	718	2Q	700	2Q	700	2Q	Cont.	Cont.	Cont.
Subtotal:			7237	718		700		700		Cont.	Cont.	Cont.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0303142A - SATCOM Ground Environment (SPACE)							253		
	Type				Date		Date		Date			Contract
PM Admin	Various	Fort Monmouth, NJ	4784	711	1-4Q	600	1-4Q	625	1-4Q	Cont.	Cont.	Cont.
SBIR/STTR					1-4Q	194					194	
Subtotal:			4784	711		794		625		Cont.	Cont.	Cont.
Project Total Cost:			84884	11742		7799		7885		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0303142A - SATCOM Ground Environment (SPACE)

PROJECT
253

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
CNPS Testing V2.0	V2.0																											
(1) CNPS Materiel Release V2.0							▲																					
(2) DIMS Materiel Release V5.1	▲																											
DIMS Testing V5.2							V5.2																					
(3) DIMS Materiel Release V5.2								▲																				
DIMS Testing V6.0											V6.0																	
(4) DIMS Materiel Release V 6.0												▲																
Netcentric System Engineering, Conduct System Engineering Studies/Analysis																												
Advanced Demonstrations for Baseband and Policy Based Control																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE)					PROJECT 253	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
CNPS Testing V1.0								
CNPS Training Release V1.0								
CNPS Testing V2.0	1Q - 4Q	1Q - 2Q						
CNPS Materiel Release V2.0		3Q						
DIMS System Testing V5.1								
DIMS Materiel Release V5.1	1Q							
DIMS Testing V5.2		2Q - 3Q						
DIMS Materiel Release V5.2		4Q						
DIMS Testing V6.0			3Q - 4Q					
DIMS Materiel Release V 6.0			4Q					
Netcentric System Engineering	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Conduct System Engineering Studies/Analysis	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Advanced Demonstrations for Baseband and Policy Based Control				2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE)						PROJECT 456	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
456 MILSATCOM SYSTEM ENGINEERING	7322	26592	16214	8478	8800	8030	8061	Continuing	Continuing

A. Mission Description and Budget Item Justification: MILSATCOM System Engineering provides centralized funding for advanced systems engineering, product support and analysis, and experimentation of new and emerging communication / network architectures and technologies. It also supports the end to end system engineering and technology assessment efforts associated with the integration of network systems (WIN-T) with the SATCOM Roadmap in support of Transformational Communications for Army Land WarNet and the Joint Warfighter. Supporting documentation and requirements are SATCOM CRD, GIG CRD, TSAT CDD/ICDs/TRDs, WIN-T, AEHF, MUOS and WGS ORDs/CDDs. In addition FY09 funds the continued development of Soldier Network Extension (SNE) which reduces both projected SATCOM On The Move (SOTM) antenna and Inertial Navigation Unit (INU) costs.

Accomplishments/Planned Program:	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Conduct various developmental efforts or analysis and trades to protect Army interests and enhanced system/network capability and joint interoperability in support of Transformational Communications and Joint Interoperability	2178	2897	2966
System Engineering in support of technology assessment and transision for WIN-T network / communication systems	1075	1389	1361
Experimentation and prototyping of critical communication and network technologies	2004	2640	2559
AEHF, WGS, TC, MUOS System Engineering in support of network system / terminal acquisition and joint interoperability	2065	2375	2328
Soldier Network Extension (SNE) SATCOM Terminal development in support of WIN-T Increment 2 Communications Network		16564	7000
Small Business Innovative Research/Small Business Technology Transfer Programs		727	
Total	7322	26592	16214

B. Other Program Funding Summary	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
373142/562 MIST/HC3 (RDTE)	7329	72701	82228	116096	33791	23079	24518	Continuing	Continuing

Comment:

C. Acquisition Strategy This project funds advanced systems engineering, research, development, test and evaluation of new and emerging technologies to optimize terminal performance and communications control. Once the technologies are mature and deemed feasible, funding and management responsibility for implementation of the technology will transition to Army.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

7 - Operational system development

0303142A - SATCOM Ground Environment (SPACE)

456

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0303142A - SATCOM Ground Environment (SPACE)							456		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Terminal Upgrades	TBD	TBS	1524			17300	2Q	7000	2Q		25824	
Advanced Wideband/TCS	Various	Various	19351								19351	
Subtotal:			20875			17300		7000			45175	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Engineering (In-House)	MIPR	Various	13445	1181	2Q	1238	2Q	1300	2Q	Cont.	Cont.	
Engineering (Contract)	Various	Various	17099	2080	2Q	3669	2Q	3282	2Q	Cont.	Cont.	
System Architecture & Analysis	Various	MIT Lincoln Labs, Lexington, MA; MITRE	10033	1500	2Q					Cont.	Cont.	
Subtotal:			40577	4761		4907		4582		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Support	MIPR	MIT Lincoln Labs, Lexington, MA	4469	578	2Q	763		942		Cont.	Cont.	Cont.
Test Support	Various	Various	10099	1039	1Q	1334		1240		Cont.	Cont.	Cont.
Subtotal:			14568	1617		2097		2182		Cont.	Cont.	Cont.
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0303142A - SATCOM Ground Environment (SPACE)							456		
Advanced Architecture	MIPR	MIT Lincoln Labs Lexington, MA	7140	434	2Q	667		750		Cont.	Cont.	
Advanced Wideband System Architecture	MIPR	Various	3560	510	2Q	1621		1700		Cont.	Cont.	
Subtotal:			10700	944		2288		2450		Cont.	Cont.	
Project Total Cost:			86720	7322		26592		16214		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
	BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE)												PROJECT 456														
Transformational Communication Architecture (TCA) AEHF, AMPE, WGS, Ka band Sys Eng and Analysis Advanced Component Experimentation/Prototyping Joint Interoperability Test Technology Assessment Soldier Network Extension SATCOM Terminal development																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE)					PROJECT 456	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Transformational Communication Architecture (TCA)	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
AEHF, AMPE, WGS, Ka band Sys Eng and Analysis	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Advanced Component Experimentation/Prototyping	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Joint Interoperability Test	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Technology Assessment	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Soldier Network Extension SATCOM Terminal development		1Q - 4Q	1Q - 4Q					
AEHF System Engineering and Analysis	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Wideband Gapfiller and Ka Band System Engineering	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Advanced Component Experimentation / prototyping	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Technology Assessment /MUOS	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Joint Interoperability Tests	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Support AEHF AEST 8000 (System Test)			1Q - 4Q					
Transformational Communication Architecture (TCA)	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Conduct Transformational Communication (TC) System Engineering Studies/Analysis	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
TC Technical Requirement Document / Interface Control Document Development	1Q - 4Q	1Q - 4Q						
TC Design Review SDR / PDR / CDR	1Q - 4Q	1Q - 4Q	1Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE)						PROJECT 562	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
562 MBAND INT SAT TERM MIST	7329	72701	82228	116096	33791	23079	24518	Continuing	Continuing

A. Mission Description and Budget Item Justification: Multi-band Integrated Satellite Terminal (MIST) funds will develop the high capacity communications capability (HC3).

The HC3 will provide high data rate communications capabilities that will be pervasively integrated into the Army's Future Modular Force communication architecture, as well as other Service and Joint communication architectures. HC3 will break traditional terminal architecture paradigms by developing a modular, open systems architecture that supports hardware and software module reuse across HC3 platforms, as well as other Joint Service applications. HC3 will be a family of tactical Multi-band, modular, communications terminals that will provide inter-network and reach back communications services across the Army's Future Modular Force tactical networks.

HC3 will develop a high capacity, multi-band, protected Communications-At-The-Halt (CATH) satellite solution to replace end-of-life multi-band tactical terminals in the 2020 timeframe. These HC3 capabilities satisfy Army high capacity protected communication requirements. The HC3 program will also develop the greatly enhanced Transformational Satellite (TSAT) capability that will be an upgrade to the Warfighter Information Network-Tactical (WIN-T). WIN-T will leverage TSAT capabilities as a technology insertion program, as part of WIN-T Increment 4. HC3 will be developing the Transformational Communications Architecture (TCA) technology insertion in the JC4ISR radio for both WIN-T Comm-at-the Halt and Comm-at-the Move. This upgrade will provide higher capacity, as well as low, near zero, probability of detection, interception (LPD/LPI), anti-jam (AJ), anti-scintillation, and exploitation capabilities.

As a result of recent Department of Defense (DoD) initiatives to reduce technical, cost, and schedule risk in large development programs, the HC3 program has been restructured. The restructured program will be initiated at Milestone A, (Technology Development) in FY11 and will be implemented with 2 competing contractors each building prototypes. Various risk mitigation studies and analyses will be executed in FY08 and FY09 with tri-service participation in order to further lower risk prior to MS A.

FY09 funds will continue the risk reduction studies and analyses, as well as support the detailed studies and analyses of the requirements process.

Accomplishments/Planned Program:	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
High capacity communications capability studies/efforts that include Waveform porting issues and high speed/capacity Cryptographic development	4284	7913	12889
Antenna/RF and Modem Analysis and risk mitigation efforts	3045	9444	15036
HC3 requirements process/analysis		3550	7075
Small Business Innovative Research/Small Business Technology Transfer Program		2034	
Allowance for Omnibus Reprogramming/ BES Adjust		49760	47228
Total	7329	72701	82228

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0303142A - SATCOM Ground Environment (SPACE)

PROJECT

562

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

C. Acquisition Strategy A competitive Communications-At-The-Halt (CATH) high capacity communications capability Technology Development (TD) contract will be awarded in FY11 which will have 2 competing contractors, each developing prototypes. Proceeding the TD phase, studies and analyses will be performed to further reduce technical, cost and schedule risk. The subsequent CATH SDD phase may also have competing contractors, dependent on analyses of the benefits to be obtained.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0303142A - SATCOM Ground Environment (SPACE)							562		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
System Development	MIPR	MIT Lincoln Labs, Lexington MA	6588	112	1Q	4250	1Q	8326	1-2Q	Cont.	Cont.	
Pre-SDD Study Contracts	T&M	Raytheon, Marlborough, Mass and Boeing, Anaheim, Ca.	8075								8075	
Government Engineering Support	Various	PM WIN-T, Fort Monmouth, NJ	4499	1722	1-2Q	2610	1-2Q	2849	1-2Q	Cont.	Cont.	
Risk Mitigation Efforts/Other Contracts	Various	Various	11374	1633	1-2Q	5014	1-2Q	11550		Cont.	Cont.	
Engineering Services	Various	Various		343	1-2Q	650	1-2Q	1050	1-2Q		2043	
Subtotal:			30536	3810		12524		23775		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Engineering Services	N/A	Fort Monmouth, NJ	3601	1550	1-2Q	1953	1-2Q	2181	1-2Q	Cont.	Cont.	
Requirement Services/Studies	Various	Various		406	1-2Q	3101	2Q	5300	1Q	Cont.	Cont.	
Subtotal:			3601	1956		5054		7481		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Engineering (In-House)	N/A	PM WIN-T, Fort Monmouth, NJ	230	34	1-2Q	514	1-2Q	541	1-2Q	Cont.	Cont.	
Subtotal:			230	34		514		541		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE)	PROJECT 562
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Government Support	N/A	PM WIN-T, Fort Monmouth, NJ	2349	1318	1-2Q	2815	1-2Q	3203	1-2Q	Cont.	Cont.	
SBIR/STTR				211	1Q	2034					2245	
Provision for Omnibus Reprogramming/BES adjustment	N/A	N/A				49760	3Q	47228	1Q	Cont.	Cont.	
Subtotal:			2349	1529		54609		50431		Cont.	Cont.	
Project Total Cost:			36716	7329		72701		82228		Cont.	Cont.	

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0303142A - SATCOM Ground Environment (SPACE)

PROJECT
562

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
Pre-Milestone A Activities/Risk Mitigation																												
High Capacity Communications Capability Studies																												
(1) CATH RFP Release															▲ 1													
SSEB																												
(2) MS A- CATH																			▲ 2									
(3) TD Contract Award (CATH-Competitive Protos)																			▲ 3									
Technology Development Contract																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE)					PROJECT 562	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Pre-Milestone A Activities/Risk Mitigation	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 3Q				
High Capacity Communications Capability Studies	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 3Q				
CATH RFP Release				3Q				
SSEB				4Q	1Q			
MS A- CATH					1Q			
TD Contract Award (CATH-Competitive Protos)					1Q			
Technology Development Contract					1Q - 4Q	1Q - 4Q	1Q - 4Q	
MS B-CATH								
SDD Contract Award						3Q - 4Q	1Q - 4Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303150A - WWMCCS/Global Command and Control System						PROJECT C86	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
C86 ARMY GLOBAL C2 SYSTEM	16392	24620	12922	14				Continuing	Continuing

A. Mission Description and Budget Item Justification: Global Command and Control System-Army (GCCS-A): This project is the Army component system that directly supports the implementation of the Global Command and Control System Family of Systems. GCCS-A provides automated command and control tools for Army Strategic and Operational Theater Commanders to enhance warfighter capabilities throughout the spectrum of conflict during joint and combined operations in support of the National Command Authority (NCA). The GCCS-A developed software systems dramatically improves the Army's ability to analyze courses of action; develop and manage Army Forces; and ensure feasibility of war plans. GCCS-A provides a client-server layered architecture and functional best-of-breed software applications to develop a totally integrated component of the Global Command and Control System Family of Systems that integrates the GCCS-Joint picture with the Army Battle Command Systems.

NOTE: FY 2008 funding total does not include \$3,800 previously requested for current FY 2008 GWOT requirements.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Perform Software and System Engineering Services	1489	668	694
Accomplish Software Development of automated Command and Control tools	13385	20260	9402
Perform Data Engineering	714	1197	1197
Conduct Test and Evaluation	48	773	773
Perform Program Support and Management Efforts	756	1327	856
Small Business Innovative Research/Small Business Technology Transfer Programs		395	
Total	16392	24620	12922

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0303150A - WWMCCS/Global Command and Control System	PROJECT C86
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<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	12065	24836	14112
Current BES/President's Budget (FY 2009)	16392	24620	12922
Total Adjustments	4327	-216	-1190
Congressional Program Reductions		-216	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	4589		
SBIR/STTR Transfer	-262		
Adjustments to Budget Years			-1190

Change Summary Explanation:

Funding

FY 2007: 4327 funds development and test of Defense Readiness Reporting System - Army (DRRS-A)

FY 2009: -1190 decreased to fund higher Army priorities

<u>C. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
BA8250 Global Command & Control System-Army (GCCSA)	25594	28737	33513	22761	15618	16321	18500	Continuing	Continuing

Comment:

D. Acquisition Strategy The GCCS-A Acquisition Decision Memorandum (ADM) dated 28 May 2002 directed development of a Block Implementation Plan (BIP), which identifies the Block 4-Operational requirements that will be developed from the GCCS-A unblocked 16 November 2000 Operational Requirement Document(ORD). GCCS-A Strategic Block 4 and the Operational Block 4 will coincide with the GCCS-J Block 4 [which begins the transition to Global Information Grid(GIG) Enterprise Services (GES)] Common Operating Environment(COE) 4.X, and Army Battle Command System (ABCS) 6.4 (Army Software Block 1). GCCS-A utilizes Commerical-Off-the Shelf (COTS) and Government-Off-The-Shelf (GOTS) software products, in addition to developed software. Common Hardware (HW) platforms are used within the Army to implement GCCS-A/GCCS-J, and include products from the Army's Common Hardware/Software-2 (CHS-2) contract. Follow-on development of GCCS-A 4.1 and 4.2 releases maintains concurrency with GCCS-J and begins implementation of NET-CENTRIC Web Based services. The GCCS-A FOS will be replaced by Increment 1 of Net-Enabled Command Capability (NECC) scheduled for initial fielding in FY12.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0303150A - WWMCCS/Global Command and Control System							C86		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software Development	HYBRID	Lockheed Martin Corp, Springfield, VA	121031	10350	1-2Q	2450	2-3Q	2000	1-4Q	Cont.	Cont.	Cont.
Software Development	HYBRID/Competitive	Follow-on Contracts TBD				12062	2-3Q	2584	1-4Q		14646	
Defense Readiness Reporting System-Army	PWD	Gestalt, Camden, NJ		1748	1-2Q	4100	2-4Q	3100	1-4Q		8948	
Developmental Hardware/Licensing	PWD	Various		5	1-4Q	255	1-4Q	255	1-4Q		515	
COE Support	MIPR	Various	1766								1766	1766
GFE	MIPR	Various	1464								1464	1465
ABCS System Engineering & Integration Efforts	MIPR	PEO C3T, Fort Monmouth, NJ	1514								1514	1514
Matrix	MIPR	CECOM, Fort Monmouth, NJ & Fort Belvoir, VA	5062			296	1-2Q	311		Cont.	Cont.	Cont.
Product Studies	MIPR	SAIC, VA	2391								2391	2391
Technical Management	In House	PM BC, Fort Monmouth, NJ	32812	1282	1-4Q	1097	1-4Q	1152	1Q	Cont.	Cont.	Cont.
System Engineering	MIPR	Various	2544	1489	2-4Q	668	1-4Q	694	1-4Q	Cont.	Cont.	Cont.
Subtotal:			168584	14874		20928		10096		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
FCBS/CSC	MIPR/Del Ord	Various	2389								2389	2389
INRI	MIPR	Various	200								200	200
Support Contractors			4768	714	2Q	1197	2Q	1197	2Q	Cont.	Cont.	Cont.
Subtotal:			7357	714		1197		1197		Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0303150A - WWMCCS/Global Command and Control System	PROJECT C86
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III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Government	MIPR	Various	3933	48	2Q	573	2Q	573	2Q		5127	5106
EPG	MIPR	Various	786								786	786
ATEC	MIPR	Various	2052		2Q	200	1Q	200	1Q	Cont.	Cont.	Cont.
Subtotal:			6771	48		773		773		Cont.	Cont.	Cont.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Office Management	In House	PM GC C2, NJ	6245	756	1-4Q	1327	1-4Q	856	1-4Q	Cont.	Cont.	Cont.
SBIR/STTR					2Q	395	1Q				395	
Subtotal:			6245	756		1722		856		Cont.	Cont.	Cont.

Project Total Cost:	188957	16392		24620		12922		Cont.	Cont.	Cont.
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Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
	IT - IPT	IT-OIPT				[Red Grid]																						
Software Development	CP1 and DEL																											
Block 4 Software Development	Block 4																											
Block 4 Hardware Fielding	Block 4																											
(1) NECC Increment 1 MS B					▲ 1																							
(2) NECC Increment 1 MS C					▲ 2																							

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE					PROJECT	
7 - Operational system development		0303150A - WWMCCS/Global Command and Control System					C86	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
IT - IPT	1Q - 4Q							
Software Development	1Q - 4Q							
Block 4 Software Development	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q				
Block 4 Hardware Fielding	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q				
NECC Increment 1 MS B		2Q						
NECC Increment 1 MS C		3Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303158A - Joint Command and Control Program (JC2)						PROJECT 714	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
714 JOINT COMMAND AND CONTROL - ARMY	3929	10330	15203	23094	1637	720	7323	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Net-Enabled Command Capability (NECC) is the DoD's principal Command and Control (C2) capability that will be accessible in a net-centric environment and focused on providing the commander with the data and information needed to make timely, effective and informed decisions. NECC draws from the C2 community to evolve current and provide new C2 capabilities into a fully integrated, interoperable, collaborative Joint solution. Warfighters will be able to rapidly adapt to changing mission needs by defining and tailoring their information environment and drawing on capabilities that enable the efficient, timely and effective command of forces and control of engagements.

The Joint Requirements Oversight Council Memorandum 163-03 (JROCM 163-03) established a need for, and directed, evolving the current Global Command and Control System (GCCS) Family of Systems (FOS) into a single joint C2 architecture and capabilities-based implementation. This implementation (NECC) will be based on Global Information Grid (GIG) Enterprise Services (GES) and consists of joint mission capability packages.

NECC will deliver continuous C2 enhancements to the Warfighter. The program will be founded on a single, net-centric, services-based C2 architecture and provide the decision support infrastructure that will enable the Warfighter to access, display, and understand the information necessary to make efficient, timely, and effective decisions. NECC will be responsive to the Warfighter through tightly coupled capability needs, development, test, and user engagement processes. The program will leverage existing and evolving C2 capabilities and centers of excellence with its ABC commitment to Adopt-before-Buy, Buy-before-Create. Key to ABC is adaptation of commercial best practices, architectures and standards for C2. The NECC program will ensure that our C2 capability evolves toward increased net-centricity and Joint mission integration.

NECC is a Joint Acquisition Category (ACAT) 1D Major Defense Acquisition Program and Major Automated Information System. The lead component for the Joint Program is the Defense Information Systems Agency (DISA). Each Service, to include the Army, has established a Component Program Management Office (CPMO) to implement the NECC solution within its agency. This project, 714, funds Army project management costs and integration and test costs to accomplish Army implementation of NECC.

NOTE: FY 2008 funding total does not include \$6,200 previously requested for current FY 2008 GWOT requirements.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Perform Software Development Necessary to Integrate Capability Modules onto Army Platforms	50	1906	4620
Conduct Test and Evaluation to Meet Interoperability Requirements	250	3750	4650
Perform Program Support and Management Efforts	3629	4385	5933
Small Business Innovative Research/Small Business Technology Transfer Programs		289	
Total	3929	10330	15203

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0303158A - Joint Command and Control Program (JC2)	PROJECT 714
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<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	4013	10415	10386
Current BES/President's Budget (FY 2009)	3929	10330	15203
Total Adjustments	-84	-85	4817
Congressional program reductions		-85	
Congressional rescissions			
Congressional increases			
Reprogrammings	29		
SBIR/STTR Transfer	-113		
Adjustments to Budget Years			4817

Change Summary Explanation: Funding - FY 09: +4817 funds NECC development, integration and test

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

D. Acquisition Strategy Formal analysis was initiated to refine the Network-Enabled Command Capability (NECC) concept. The Assistant Secretary of Defense (ASD) approved NECC capability for entry into the Concept Refinement Phase. The Assistant Secretary of Defense (ASD) directed the Deputy Assistant Secretary of Defense (DASD), C3, Space, and IT Programs to complete a NECC Capability Analysis of Alternatives (AoA).

The alternatives were presented by OSD National Information Infrastructure (NII) and were accepted for approval. The capabilities recommended to move forward for Part II are Situational Awareness, Force Projection and Force Mobilization. The OSD (NII) Acquisition Decision Memorandum issued 7 March 2006 approved Milestone A, authorized entry into the Technology Development phase and renamed Joint Command and Control (JC2) as the Net-Enabled Command Capability (NECC) program.

The system architecture and technical baseline are being further defined, including test strategy development and lifecycle management considerations. The Capability Development Document (CDD) for Increment 1 was approved July 2007. The NECC Milestone B is scheduled for 2Q08, authorizing Increment 1 development activity. Increment 1 will be complete in FY11. Increment 2 and 3 will follow in 2 year phases.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0303158A - Joint Command and Control Program (JC2)							714		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	Competitive/Time and Materials	Various		50	2Q	871	2Q	967	2Q		1888	
Integration Efforts	Competitive/Time and Materials	Various				1035	2-4Q	3653	1-4Q		4688	
Subtotal:				50		1906		4620			6576	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Government	Government Matrix	Various		250	2Q	3750	2-3Q	4650	2-3Q		8650	
Subtotal:				250		3750		4650			8650	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Government	Government	Various	1626	932	1-2Q	2508	1-2Q	3344	1-2Q	Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0303158A - Joint Command and Control Program (JC2)							714		
Contractor	Competitive/Time and Materials	Various		2697	1-4Q	1877	1-4Q	2589	1-4Q		7163	
SBIR/STTR						289					289	
Subtotal:			1626	3629		4674		5933		Cont.	Cont.	Cont.
Project Total Cost:			1626	3929		10330		15203		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0303158A - Joint Command and Control Program (JC2)

PROJECT
714

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
NECC Technology Development					<div style="position: absolute; top: 10%; left: 15%;">1</div> <div style="position: absolute; top: 35%; left: 15%;">2</div>																							
(1) NECC Increment 1 MS B																												
NECC Increment 1 Software Development																												
(2) NECC Increment 1 MS C																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0303158A - Joint Command and Control Program (JC2)					PROJECT 714	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
NECC Technology Development	1Q - 4Q							
NECC Increment 1 MS B		2Q						
NECC Increment 1 Software Development		2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q			
NECC Increment 1 MS C		3Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE							
7 - Operational system development		0305204A - Tactical Unmanned Aerial Vehicles							
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	171257	100854	50976	35224	24439	27976	19189	Continuing	Continuing
114 Tactical Unmanned Aerial Vehicle (TUAV) (MIP)	16062	7866	8209	7854	8123	9100		Continuing	Continuing
11A Advanced Payload Develop & Spt (MIP)	17254	40085	25740	18955	7654	7945	8005	Continuing	Continuing
11B TSP DEVELOPMENT (MIP)	11771								44147
123 JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (MIP)	2429	2221	2359	2483	2538	2506	2559	Continuing	Continuing
D09 EXTENDED RANGE UAV (MIP)	123741	44759	12672	3932	4124	6425	6625	Continuing	Continuing
D10 SUAV (MIP)		5923	1996	2000	2000	2000	2000	Continuing	Continuing

A. Mission Description and Budget Item Justification: Project 114 TUAV Shadow provides the Army Brigade Commander with dedicated Reconnaissance, Surveillance and Target Acquisition (RSTA), Intelligence, Battle Damage Assessment (BDA) and Force Protection. The Shadow provides the Brigade Commander with critical battlefield intelligence and targeting information in the rapid cycle time required for success at the tactical level. The Shadow system air vehicle meets the required range of 50 km and remains on station for up to five hours. The baseline fielded payload is electro-optic infrared (EO/IR). The TUAV Shadow system consists of four air vehicles, (each configured with an EO/IR sensor payload), launcher and ground control and support equipment including: power generation, communications equipment, automated recovery equipment, remote video terminals, vehicle mounted shelters, and High Mobility Multipurpose Wheeled Vehicles with trailer(s). Each system is equipped with one Maintenance Section Multifunctional (MSM) Vehicle and is supported at the division level by a Mobile Maintenance Facility (MMF). The TUAV Shadow has logged over 207,000 flight hours.

Project 11A Advance Payload Development supports the Army's transformation by developing payloads for brigade combat team, division, and corps UASs in accordance with Headquarters Department of the Army and Training and Doctrine Command UAS priorities. The Synthetic Aperture Radar/Ground Moving Target Indicator (SAR/GMTI) payload will provide a wide-area search capability with a built-in imaging mode that provides essential all-weather surveillance and increased situational awareness. The SAR/GMTI payload is a complementary system of the Army's Future Combat System (FCS) Class IV UAV and is a principal payload for the Extended Range Multi-Purpose (ERMP) UAS. The EO/IR w/Laser Designator (LD) is currently in development for the ERMP system and has potential application to other platforms. The EO/IR/LD will provide a day/night capability to collect and display continuous imagery with the ability to designate targets of interest for attack by laser guided precision weapons. Additional initiatives will continue to focus on the transition of technologies directly supporting emerging requirements and the Army's Current and Future Force.

Project 11B Tactical SIGINT Payload (TSP) is an Unmanned Aerial Vehicle (UAV) mounted SIGINT sensor that detects radio frequency (RF) emitters. TSP, a key FCS component, is capable of providing the Brigade Combat Team (BCT) Land Commander with an overwatch and a penetrating SIGINT system capable of detecting, identifying, locating, and providing geolocation information on RF emitters throughout the Area of Operations (AO). The BCT commander will deploy TSP to provide sensor coverage where FCS ground vehicles cannot perform the SIGINT mission due to radio line of sight blockage. TSP is developing sensors for BCT applications to detect low-power radio emitters. The SIGINT payload is scalable and designed to provide maximum flexibility for the BCT mission profile. TSP will provide near real time (NRT) actionable intelligence that can

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY

PE NUMBER AND TITLE

7 - Operational system development

0305204A - Tactical Unmanned Aerial Vehicles

immediately be used in the commanders decision cycle. The TSP electronic emitter information will be correlated with data from other systems, e.g. Prophet and Aerial Common Sensor (ACS) to provide precise targeting information for immediate engagement. The TSP sensors are critical to providing full coverage Intelligence, Surveillance and Reconnaissance (ISR) information for Future Force capabilities for FCS and contributing to the Joint ISR net.

Project 123 JTC/SIL is a joint facility that develops, integrates and supports the enhancement of its Multiple Unified Simulation Environment (MUSE) capability for Army systems and operational concepts. The JTC/SIL conducts prototype hardware and software development (i.e. TUAV Tactical Unmanned Control System (TUCS), TUAV Institutional Mission Simulation (IMS) Trainer, TUAV C4I module), modeling and simulation support. The MUSE develops real-time, operator in-the-loop simulations that are capable of tactical Hardware-In-the-Loop (HWIL) interoperability for multiple intelligence systems, that may be integrated with larger simulations in support of Service training and exercises. MUSE provides a realistic operational environment, supporting a wide range of C4I applications. This project funds the management of the JTC/SIL and MUSE enhancements.

Project D09 Extended Range Multi-Purpose (ERMP) UAS provides much improved real-time responsive capability to conduct long-dwell, wide area reconnaissance, surveillance, target acquisition, communications relay, and attack missions (4 HELLFIRE). ERMP addresses an ever-increasing demand for greater range, altitude, endurance and payload flexibility and allows for mission change while in flight. ERMP will be fielded as a system to a company level organization with one company being assigned to each of the 10 Army Divisions. This will provide a capability that is responsive to the lowest level of command facilitating dynamic re-tasking. The ERMP system consists of 12 aircraft with Electro-Optical/Infrared, Synthetic Aperture Radar, and communications relay payloads, Ground equipment includes 5 Ground Control Stations, 5 Ground Data Terminals, 2 Portable Ground Control Stations, 2 Portable Ground Data Terminals, and other associated ground support equipment. The acquisition strategy capitalized upon competitive forces, bringing cutting-edge improvements at the best cost and value that support the major thrusts of the DoD UAS Roadmap, and the imperatives of Army modernization and Army Aviation Transformation. The ERMP system includes a heavy fuel engine, endurance of 30 hours, TC DL, network connectivity that reduces information cycle time and enhances overall battlespace awareness through liberal dissemination, teaming with manned platforms, and steps toward integration of UAS into national and international airspace. ERMP has a 3,200 pound gross take off weight (with growth to 3,600 pounds), Fowler flaps which improve take-off and landing performance, Automatic Take-off and Landing (ATLS) and the flexibility to operate with or without SATCOM data links. The ERMP One System Ground Control Station has the ability to operate multiple ERMP aircraft simultaneously and is interoperable with the Shadow UAS. With more weapons, payloads, and endurance than any other current system in its class, ERMP gives the Army the required capability defined by years of wartime experience and codified by the Joint Requirement Oversight Council (JROC).

Project D10 The Small Unmanned Aircraft System (SUAS) program provides the ground maneuver battalions and below with unprecedented situational awareness and enhanced force protection. SUAS is a man portable unmanned aircraft system capable of handling a wide variety of ISR tasks at Battalion and below. The SUAS aircraft has a wingspan of 4.5 feet and weighs 4.2 pounds. It is hand-launched, and provides aerial observation, day or night, at line-of-sight ranges up to 10 kilometers. The aircraft has an endurance rate of 90 minutes and can deliver color or infrared imagery in real time to the ground control and remote viewing stations. SUAS obtained Milestone C approval 6 Oct 05 and successfully completed IOT&E Jun 06. The program obtained Full Rate Production authority 5 Oct 06.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
7 - Operational system development	0305204A - Tactical Unmanned Aerial Vehicles		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	153227	97947	62836
Current BES/President's Budget (FY 2009)	171257	100854	50976
Total Adjustments	18030	2907	-11860
Congressional Program Reductions		-1093	
Congressional Rescissions			
Congressional Increases		4000	
Reprogrammings	18030		
SBIR/STTR Transfer			
Adjustments to Budget Years			-11860

Change Summary Explanation: Funding - FY 2007: \$13 million reprogrammed into this PE to support Common Sensor; \$4 million reprogrammed into this PE to support Extended Range UAV. FY 2009: Funds realigned to higher priority Army programs.

Schedule Detail (R4a Exhibit)		February 2008
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BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles
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Schedule Detail: Not applicable for this item.

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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles					PROJECT 114			
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost	
114 Tactical Unmanned Aerial Vehicle (TUAV) (MIP)	16062	7866	8209	7854	8123	9100		Continuing	Continuing	

A. Mission Description and Budget Item Justification: The Tactical Unmanned Aerial Vehicle (TUAV) Shadow 200 provides the Army Brigade Commander with dedicated Reconnaissance, Surveillance and Target Acquisition (RSTA), Intelligence, Battle Damage Assessment (BDA) and Force Protection. The Shadow provides the Brigade Commander with critical battlefield intelligence and targeting information in the rapid cycle time required for success at the tactical level. The TUAV Shadow system air vehicle meets the required operating range of 50 kilometers and remains on station for up to five hours. The baseline fielded payload is electro-optic infrared (EO/IR). Procurement of attrition air vehicles originated in FY 01 and was re-established in FY 06. The TUAV Shadow system consists of four air vehicles, (each configured with an EO/IR sensor payload), launcher and ground control and support equipment including: power generation, communications equipment, automated recovery equipment, remote video terminals, vehicle mounted shelters, and High Mobility Multipurpose Wheeled Vehicles with trailer(s). Each system is equipped with one Maintenance Section Multifunctional (MSM) Vehicle and is supported at the division level by a Mobile Maintenance Facility (MMF).

The TUAV has logged over 250,000 flight hours since Jun 01, most of which were flown in support of Operation Iraqi Freedom and Operation Enduring Freedom. Block upgrades are required for continued improvement and interoperability. Common Systems Integration is required to ensure interoperability with other weapon systems, manned and unmanned. Small Sense and Avoid System (SSAASy) is required to meet the requirement for a traffic alert and collision avoidance system and to allow for operations in the National Airspace (NAS). Rolling Take Off is required to improve reliability and provide a redundant take off capability for the system.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Program Management Support	848	395	414
Block Upgrades, 1101 Engineering Development and Test	2500	1400	1400
Laser Designator	3245		
Blue Force Tracking Integration	306		
Heavy Fuel Engine	3250		
Small Sense and Avoid System (SSAASy)			4150
Communications Relay	2000		
Test Support	1705	1851	2014
Common System Integration	1208	750	231
Rolling Take Off	1000	2470	
Increment WX Capability/Wing Improvement		1000	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles	PROJECT 114
Total	16062	7866

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
TUAV Procurement (BA0330)	241533	72666	3	258307	58901			Continuing	Continuing
Initial Spares - TUAV (BS9738)		2980	2618	2752	2643			Continuing	Continuing

Comment:

C. Acquisition Strategy A System Capability Demonstration (SCD) was conducted with four contractors. The results from the SCD in conjunction with proposal evaluations resulted in the competitive down select of a Best Value TUAV system. A successful Milestone II ASARC was conducted 21 Dec 99, and a TUAV LRIP contract was awarded to AAI Corporation 27 Dec 99. In order to accelerate fielding of the TUAV system, a second LRIP for four systems was awarded 30 Mar 01 following a successful OPTEMPO test. In order to maintain accelerated fielding and continue ramp up to full rate production, a third LRIP was awarded in Mar 02. A successful LRIP program led to a MS III decision 25 Sep 02. The full rate production contract was awarded 27 Dec 02. Continued development of the selected TUAV system will be accomplished through a series of modifications and retrofits such as Tactical Common Data Link (TCDL), Communications Relay, Laser Designator, and reliability upgrades.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0305204A - Tactical Unmanned Aerial Vehicles							114		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Target Location Error (TLE) / TCDL/JTRS / Laser Designator	SS/CPFF	AAI Corporation, MD	34124	3245	2-3Q						37369	36593
OIF Improvements (Blue Force Tracker, 1101 Engine Upgrade, System Upgrades/Block Upgrades)	SS/CPFF	AAI Corporation, MD	7498	2806	2Q	1400	2Q	1400	2Q		13104	12449
Communications Relay	SS/CPFF	AAI Corporation, MD / Other Government Agency		2000	2Q						2000	1500
Common System Integration	SS/CPFF	AAI Corporation, MD / Other Government Agency	2562	1208	2Q	750	2Q	231	2Q		4751	
Heavy Fuel Engine	SS/CPFF/MIP R	AAI Corporation, MD / Other Government Agency		3250	2-3Q						3250	
Small Sense and Avoid System (SSAASy)	SS/CPFF/MIP R	AAI Corporation, MD/Other Government Agency						4150	2Q		4150	
Subtotal:			44184	12509		2150		5781			64624	50542
II. Support Costs												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPFF	Various Contractors	9501	365	1Q	170	1-2Q	174	1-2Q	Cont.	Cont.	Cont.
Government Engineering Support	MIPR	AMRDEC & IMMC, Redstone Arsenal, AL	6549	283	1Q	118	1-2Q	121	1-2Q	Cont.	Cont.	Cont.
Government Engineering Support - Extended Range	MIPR	AMRDEC, Redstone Arsenal, AL	1476								1476	1476
Subtotal:			17526	648		288		295		Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles	PROJECT 114
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III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Risk Reduction Testing/ST&E / Rolling Take Off	MIPR	Various	15345	1000	2Q	2470	2Q		2Q	Cont.	Cont.	Cont.
Development Testing/ OPTEMPO Testing / Risk Reduction Testing / ST&E / Inclement WX Capability	MIPR	Various	4847	1588	2Q	2851	2Q	2014			11300	4354
Subtotal:			20192	2588		5321		2014		Cont.	Cont.	Cont.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management Personnel	MIPR	PM UAS, Redstone, AL	8439	317	1-4Q	107	1-4Q	119	1-4Q	Cont.	Cont.	Cont.
Subtotal:			8439	317		107		119		Cont.	Cont.	Cont.

Project Total Cost:			90341	16062		7866		8209		Cont.	Cont.	Cont.
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Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
	BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles																PROJECT 114										
OIF	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]							
C4I Maintenance/Improvements	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]							
Development Testing	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]							
Total Ownership Cost Reduction Initiatives	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]							
TLE / TC DL / JTRS / Laser Designator	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]							
P3I	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]							
Heavy Fuel Engine	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]							
Small Sense and Avoid System (SSAASy)	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]							

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles					PROJECT 114	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
OIF	1Q - 4Q	1Q - 4Q						
C4I Maintenance/Improvements	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q		
Development Testing	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q		
Total Ownership Cost Reduction Initiatives	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q		
TLE / TCDL / JTRS / Laser Designator	1Q - 4Q	1Q - 4Q	1Q					
P3I	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q		
OIF Improvements								
Heavy Fuel Engine	2Q - 4Q	1Q - 4Q						
Small Sense and Avoid System (SSAASy)			1Q - 4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles					PROJECT 11A	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
11A Advanced Payload Develop & Spt (MIP)	17254	40085	25740	18955	7654	7945	8005	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports the Army's transformation by developing payloads for brigade combat team, division, and corps Unmanned Air Vehicles (UAV) and unmanned systems in accordance with Headquarters Department of the Army (HQDA) and Training and Doctrine Command (TRADOC) UAV priorities. The Synthetic Aperture Radar/Ground Moving Target Indicator (SAR/GMTI) payload will provide a wide-area search capability with a built-in imaging mode that provides essential all-weather surveillance and increased situational awareness. The SAR/GMTI payload is a complementary system of the Army's Future Combat System (FCS) Class IV UAV and is a principal payload for the Extended Range/Multi-Purpose (ER/MP) UAV. The Electro Optical Infra Red w/Laser Designator (EO/IR/LD) Common Sensor Payload (CSP) is being developed at the direction of the Vice Chief of Staff of the Army for the ER/MP system as well as the Armed Reconnaissance Helicopter (ARH) ARH-70A and has potential application to other platforms. The EO/IR/LD CSP will provide a day/night capability to collect and display continuous imagery with the ability to designate targets of interest for attack by laser guided precision weapons. Additional initiatives will continue to focus on the transition of technologies directly supporting emerging requirements and the Army's Current and Future Force.

The Tactical Signals Intelligence (SIGINT) Payload (TSP) is a modular, platform independent, SIGINT payload incorporating an open architecture to provide enhanced situational awareness, target identification, and signals prosecution throughout the tactical Area of Operations (AO). It is intended to be installed on an Army Inventory Unmanned Aerial System (UAS). The TSP payload is a complementary program to the Army's Future Combat System (FCS) for the Class IV Fire Scout UAS.

FY2009 funding continues the system integration and refurbishment of UAV payloads for follow on testing and the development of the EO/IR/LD Common Sensor Payload. FY2009 also funds the integration of the Tactical Signals Intelligence (SIGINT) Payload (TSP) onto an Army Inventory Unmanned Aerial System (UAS) and Developmental Test.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
SAR/GMTI Development and Integration - includes Development Test.	3016	643	640
EO/IR/LD development includes engineering/program management support	1238	600	600
Tactical Sigint Payload			4100
Advanced Payloads NRE for ER/MP			4200
Common Sensor Payload Effort, includes NRE, prototypes, integration and testing efforts.	13000	38842	16200
Total	17254	40085	25740

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
Advanced TUAV Payloads (B00302)	27265	42135	142924	164096	150709	124184	117688	Continuing	Continuing

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0305204A - Tactical Unmanned Aerial Vehicles

PROJECT

11A

Comment: Common Sensor Payload RDTE funds were added to this PE, Common Sensor Payload Procurement funds were added to SSN B00302.

C. Acquisition Strategy The System Development and Demonstration (SDD) contract for the SAR/GMTI Payload was competitively awarded 1QFY04 for the design/modification and fabrication of SDD articles. The SAR/GMTI SDD articles will be refurbished and provided to ER/MP for integration and testing and participation in the ER/MP Initial Operational Test & Evaluation (IOT&E).

The SDD contract for the EO/IR/LD DAS-2 was competitively awarded in 3rd quarter FY05 for 10 test articles. After combined development and operational testing, the SDD articles will be provided to the ER/MP program for system integration and test. After the ER/MP Limited User Test, the SDD units will be refurbished and used to support the platform during Initial Operational Test & Evaluation (IOT&E).

An acquisition strategy based on a full and open competition for the Army Common Sensor Payload program was briefed and approved at the Army Systems Acquisition Review Council (ASARC) in December 2006. A competitive contract was awarded in Nov 07 for the design, build, test and delivery of 10 Common Sensor Payloads.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0305204A - Tactical Unmanned Aerial Vehicles							11A		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
SAR/GMTI System Development & Demonstration/Refurbishment and Integration	COMP/CPIF	General Atomics, San Diego, CA	23836	1750	2-3Q	643	2Q	640	2Q		26869	26869
EO/IR/LD System Development & Demonstration/Refurbishment and Integration	COMP/FFP/C PFF	Raytheon, McKinney, TX	11074			600	2Q	600	2Q		12274	12274
Advanced Payloads NRE for ER/MP	COMP/CPFF	TBD						4200	3Q		4200	
Tactical Sigint Payload		TBD									1564	
Tactical Sigint Payload Platform Integration	TBD	TBD						2200	2Q		2200	
Tactical Sigint Payload Platform Integration	TBD	TBD						1000	2Q		1000	
Common Sensor Payload NRE and Hardware	C/FFP/CPFF	Raytheon, McKinney, TX		11000		36758	2Q	12963	2Q	Cont.	Cont.	
Subtotal:			34910	12750		38001		21603		Cont.	Cont.	39143
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	Various	10944	2211	1-4Q						13155	
Subtotal:			10944	2211							13155	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0305204A - Tactical Unmanned Aerial Vehicles							11A		
SAR/GMTI Developmental Test Support	MIPR	DTC, Aberdeen Proving Grounds, MD	797								797	
SAR/GMTI Operational Testing	MIPR	IEWTD, Fort Huachuca, AZ	1330								1330	
EO/IR/LD Developmental Testing	MIPR	DTC, Aberdeen Proving Grounds, MD	835								835	
EO/IR/LD Operational Testing	MIPR	IEWTD, Fort Huachuca, AZ	993								993	
Tactical Sigint Payload	MIPR	ATEC, Alexandria, VA						300	2-4Q		300	
Common Sensor Payload Testing	MIPR	TBD				488	3Q	1395	1-3Q	Cont.	Cont.	
Subtotal:			3955			488		1695		Cont.	Cont.	

Remarks: Government, contractor, and test support for UAV testing contained in the ER/MP Platform.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Mgmt Personnel	In House	PM RUS, Ft. Monmouth, NJ	2047	2293					1-4Q		4340	
Common Sensor Mgmt	MIPR	TBD				1596	1-4Q	1842	1-4Q	Cont.	Cont.	
Program Mgmt Personnel	MIPR	PM AC Sensors, Ft Monmouth, NJ						600	1-4Q		600	
Subtotal:			2047	2293		1596		2442		Cont.	Cont.	

Project Total Cost:	51856	17254		40085		25740		Cont.	Cont.	39143
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Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
	SAR/GMTI SDD & UAV Systems Integration & Test	[Redacted]																										
EO/IR/LD SDD & UAV Systems Integration & Test	[Redacted]																											
ER/MP System LUT (PM MAE program event)																												
(1) Common Sensor Payload Award																												
Common Sensor Payload Incr 1 Engr/Hdwe Efforts																												
Emerging Technology transition initiatives																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles					PROJECT 11A	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
SAR/GMTI SDD & UAV Systems Integration & Test	1Q - 4Q	1Q - 4Q	1Q - 4Q					
EO/IR/LD SDD & UAV Systems Integration & Test	1Q - 4Q	1Q - 4Q	1Q - 4Q					
ER/MP System LUT (PM MAE program event)			1Q - 2Q					
Common Sensor Payload Award		1Q						
Common Sensor Payload Incr 1 Engr/Hdwe Efforts		1Q - 4Q	1Q - 4Q	1Q - 4Q				
Emerging Technology transition initiatives				1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles					PROJECT 123			
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost	
123 JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (MIP)	2429	2221	2359	2483	2538	2506	2559	Continuing	Continuing	

A. Mission Description and Budget Item Justification: The Joint Technology Center/System Integration Laboratory (JTC/SIL) is a joint facility that develops, integrates and supports the enhancement of its Multiple Unified Simulation Environment (MUSE) capability for Army systems and operational concepts. The JTC/SIL conducts prototype hardware and software development, the Shadow UAS Institutional Mission Simulator (IMS) trainer for the Shadow, Hunter, and ERMP programs, and modeling and simulation support. The MUSE is a real-time, operator in-the-loop simulations that may be integrated with larger simulations in support of Army and Joint training and exercises. The MUSE is also employed as a Mission Rehearsal Tool for ongoing combat operations. This project funds the management of the JTC/SIL and MUSE enhancements.

This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Implement Tactical Common Datalink Model		50	50
Develop and upgrade Terrain and Target databases	80	80	80
Implement Advanced Sensor / Payload Simulations	75	75	75
Implement / Integration Weapons Simulation for Weaponized UAV	50	50	50
Incorporate STANAG 4586 Datalike Interface Standard	61	50	60
Evaluate and integrate New Visualization Technologies into MUSE	75	75	75
Technical support of MUSE integration with IEWTPT	40	40	40
Enhance VTUAV Models	50	50	50
Provide MUSE Configuration Management and Help Desk Services	250	250	250
MUSE Equipment	348	291	338
JTC/SIL Management	412	385	400
Initial development of Multi-Spectral and Hyper-Spectral simulations		25	50
Enhance IR and SAR model sets	100	50	50
Update interfaces to DoD models	80	50	50
Integrate UAV Survivability Models and Attributes	80		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
7 - Operational system development	0305204A - Tactical Unmanned Aerial Vehicles	123		
Enhance Fixed Wing UAV Models	75	75	75	
Update MUSE HLA and DITSCAP	100	100	100	
Enhance of Fixed Target Models	75	72	75	
Common UAV Trainer Enhancements	80	80	80	
Implement Tailored Auto Track and Auto Search Models	75	75	75	
Incorporate Effects of Digital Payload Imagery	35	50	50	
Continue C4I Enhancements	72	73	86	
Continue OneSAF Vignette development	75	50	50	
Continue Usability Enhancements	91	75	100	
Enhance Small UAV Models	50	50	50	
Total	2429	2221	2359	

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
PE 0305204N Navy	1616								1616
PE 0305205F Air Force	1491								1491

Comment:

C. Acquisition Strategy Continued MUSE development will be accomplished through a combination of Government in-house functional directorate support and contractor support using a variety of existing contract vehicles.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0305204A - Tactical Unmanned Aerial Vehicles							123		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Initiate MTI/FTI Sensor Sim Develop/Upgrade SAR	SS/CPFF	AMC/AMCOM/AMRD EC/SED/Redstone Arsenal, AL	143								143	143
MUSE Remote Support Capability	SS/CPFF	SAIC/ HSV, AL	415								415	415
Develop MUSE Fixed Target Damage Site Visualization	SS/CPFF	SAIC/ HSV, AL	235			72	1Q	75	1Q		382	235
Upgrade HLA Certification and DITSCAP	SS/CPFF	AMC/AMCOM/AMRD EC/SED/Redstone Arsenal, AL	792	100	1Q	100	1Q	100	1Q		1092	892
MUSE Equipment	C/FFP	Various	2249	348	1Q	291	1Q	338	1Q		3226	2597
MUSE Hardware Consolidation into Single PC-Based Platform	SS/CPFF	SAIC/ HSV, AL	237								237	237
Develop / Integrate and Implement TCDL into MUSE in Support of TUAV ORD	SS/CPFF	SAIC/ HSV, AL	250			50	1Q	50	1Q		350	250
Develop & Upgrade Terrain & Target Databases	SS/CPFF	SAIC/ HSV, AL	1119	80	2Q	80	1Q	80	1Q		1359	1199
Incorporate New Technology Sensors & Platforms into the MUSE	SS/CPFF	SAIC/ HSV, AL	275								275	275
Integrate Weapon Employment Capabilities into MUSE	C/FFP	Various	124								124	124
Evaluate and Integrate New Visualization Technologies into MUSE	C/FFP	Various	180	75	2Q	75	1Q	75	1Q		405	105
Link Fixed Target Database with DIA MIDB	SS/CPFF	Various	295	75	1Q						370	370
Initial VTUAV/UCARS Vehicle models	SS/CPFF	Various	215	50	2Q	50	1Q	50	1Q		365	265
Initial ATARS & TARPS Simulation model	SS/CPFF	SAIC/HSV, AL.	235								235	235

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT	
7 - Operational system development			0305204A - Tactical Unmanned Aerial Vehicles							123	
Initial effects-based fixed target behavior model	SS/CPFF	SAIC/HSV, AL.	190							190	190
Initial development of Multi-spectral & Hyper-spectral simulation	SS/CPFF	SAIC/ HSV, AL	206							206	206
Prototype FIA interfaces & capabilities			120							120	120
Imagery generation upgrade conversion	SS/CPFF	SAIC/ HSV, AL	160							160	160
Enhance IR & SAR model sets	SS/CPFF	SAIC/ HSV, AL	190	100	1Q	50	1Q	50	1Q	390	90
Implement Advanced Sensor / Payload	SS/CPFF	SAIC/ HSV, AL	50	75	2Q	75	1Q	75	1Q	275	125
Implement / Integration Weapons Simulation for Weaponized UAV	SS/CPFF	SAIC/ HSV, AL	75	50	2Q	50	1Q	50	1Q	225	125
Incorporate STANAG 4586 Datalink Interface Standard	SS/CPFF	SAIC/ HSV, AL	82	61	2Q	50	1Q	60	1Q	253	143
Enhance Small UAV / IR / SAR & Fixed Target Models	SS/CPFF	SAIC/ HSV, AL	50	50	2Q	50	1Q	50	1Q	200	450
Integrate UAV Survivability Models and Attributes	SS/CPFF	SAIC/ HSV, AL		80	2Q					80	80
Evaluate and Integrate new Visualization Technology / System	SS/CPFF	SAIC/ HSV, AL	75	75	2Q	75	1Q	75	1Q	300	150
Common UAV Trainer Enhancements	SS/CPFF	SAIC/ HSV, AL	80	80	2Q	80	1Q	80	1Q	320	160
Incorporate Effects of Digital Payload Imagery	SS/CPFF	SAIC/ HSV, AL	80	35	2Q	50	1Q	50	1Q	215	115
OneSAF Vignette development	SS/CPFF	SAIC/ HSV, AL	75	75	2Q	50	1Q	50	1Q	250	150
Usability Enhancements	SS/CPFF	SAIC/ HSV, AL	100	91	2Q	75	1Q	100	1-2Q	366	200
Initial Development of Multi-Spectral and Hyperspectral Simulations	SS/CPFF	SAIC/ HSV, AL				25	1Q	50	1Q	75	
Implement Tailored Auto Track and Auto Search	SS/CPFF	SAIC/ HSV, AL		75	2Q	75	1Q	75	1Q	225	
Subtotal:			8297	1575		1423		1533		12828	9806

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles	PROJECT 123
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II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Provide Direct JSTARS CGS Interface	SS/CPFF	GDIS/Arlington, VA	75								75	75
Technical Support of MUSE Integration with IEWTPT	C/CPFF	GDIS/Arlington, VA	215	40	2Q	40	1Q	40	1Q		335	255
Initiate MUSE TUAV Flight Performance Model Verification & Validation Process	C/CPFF	Dynetics/Huntsville, AL	465								465	465
Provide MUSE Configuration Mgt and Help Desk Services	C/CPFF	GDIS, Arlington, VA	1412	250	1Q	250	1Q	250	1Q		2162	1662
JTC/SIL Management	C/CPFF	TBD	280								280	280
MUSE Equipment	C/CPFF	AMC/AMCOM/AMRD EC/SED/Redstone Arsenal, AL	761								761	761
Incorporate New Technology Sensors & Platforms into the MUSE	C/CPFF	SAIC/Huntsville, AL	275								275	275
Update interfaces to DoD models	C/CPFF	GDIS/Arlington, VA	295	80	2Q	50	1Q	50	1Q		475	375
Subtotal:			3778	370		340		340			4828	4148

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
C4I Enhancements	SS/CPFF	GDIS/Arlington, VA	90	72	2Q	73	1Q	86	1Q		321	180
Subtotal:			90	72		73		86			321	180

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles							PROJECT 123		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
JTC/SIL Management Personnel	In House	JTC/SIL/Redstone Arsenal, AL	1412	412	1-4Q	385	1-4Q	400	1-4Q		2609	1806
Subtotal:			1412	412		385		400			2609	1806
Project Total Cost:			13577	2429		2221		2359			20586	15940

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles						PROJECT D09	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
D09 EXTENDED RANGE UAV (MIP)	123741	44759	12672	3932	4124	6425	6625	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Extended Range Multi-Purpose (ERMP) Unmanned Aircraft System (UAS) provides a much improved real-time responsive capability to conduct long-dwell, wide area reconnaissance, surveillance, target acquisition, communications relay, and attack missions (4 HELLFIRE). ERMP addresses an ever-increasing demand for greater range, altitude, endurance and payload flexibility and allows for mission change while in flight. ERMP will be fielded as a system to a company level organization with one company being assigned to each of the 10 Army Divisions providing a capability that is responsive to the lowest level of command facilitating dynamic re-tasking. The ERMP system consists of 12 aircraft with Electro-Optical/Infrared, Synthetic Aperture Radar, and communications relay payloads, Ground equipment includes 5 Ground Control Stations, 5 Ground Data Terminals, 2 Portable Ground Control Stations, 2 Portable Ground Data Terminals, and other associated ground support equipment. The acquisition strategy capitalized upon competitive forces, bringing cutting-edge improvements at the best cost and value that support the major thrusts of the DoD UAS Roadmap, and the imperatives of Army modernization and Army Aviation Transformation. The ERMP system includes a heavy fuel engine, endurance of 30 mission hours, Tactical Common Data Link (TCDL) technology, network connectivity that reduces information cycle time and enhances overall battlespace awareness through liberal dissemination, teaming with manned platforms, and steps toward integration of UAS into national and international airspace. ERMP has a 3,200 pound gross take off weight (with growth to 3,600 pounds), Fowler flaps which improve take-off and landing performance, Automatic Take-off and Landing (ATLS) and the flexibility to operate with or without Satellite Communication (SATCOM) data links. The ERMP One System Ground Control Station has the ability to operate multiple ERMP aircraft simultaneously and is interoperable with the Shadow UAS. With more weapons, payloads, and endurance than any other current system in its class, ERMP gives the Army the required capability defined by years of wartime experience and codified by the Joint Requirement Oversight Council (JROC).

RDT&E funds continue to resource the System Development and Demonstration (SDD) phase for ERMP, as well as continuing improvements after SDD. Engineering developmental tests and prototype production and integration frame the major FY 09 activities. These activities prepare the system and lower risk for the Limited User Test, the Logistics Demonstration event and the Operational Temp (OPTEMPO) and Initial Operational Test & Evaluation (IOT&E) events. Testing of prototype articles includes components of Electronic Environmental Effects (E3), environmental, and Nuclear, Biological, Chemical (NBC) as well as software certification, many of which run concurrently to conserve schedule.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Program Management	8991	3846	960
Government Furnished Equipment	410		
Development Engineering & Prototype Manufacturing	106724	30496	9686
System Test & Evaluation	2031	6523	2026
Common System Integration	1050	1583	
Launcher Software Development	1000	1498	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles	PROJECT D09	
Aviation Mission Planning Systems	1615	813	
Next Generation ice protection	1920		
Total	123741	44759	12672

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
TUAV - Extended Range / Multi-Purpose (B00305)	9367	122663	174607	323886	300904	123781	128902	Continuing	Continuing
Extended Range / Multi-Purpose - Weapons Capability Modifications (B10307)	1324	15104	15124	15105	15143			Continuing	Continuing
Warrior Alpha (Training Set) (B00305)	8725								8725

Comment:

C. Acquisition Strategy The ERMP Operational Requirement Document (ORD) was approved by the JROC 6 Apr 05, Milestone B occurred 20 Apr 05, and the System Development and Demonstration contract was awarded 8 Aug 05 as a result of a competitive solicitation which included a vendor system capabilities demonstration. To meet the required capability, evolutionary acquisition has been employed to implement the incremental approach outlined in the ORD. The ERMP UAS will be matured during the System Development and Demonstration (SDD) phase, which includes the development and integration of key components such as the Tactical Common Data Link (TCDL), Link-16, and integration of Government Furnished Equipment, payloads, appropriate Common Aviation Ground Support Equipment and the One System GCS. PM JAMS will develop the P+ model of the HELLFIRE missile and participate in the integration and test activities for the entire ERMP system. PM JAMS will budget for the procurement of missiles for the fielded systems. Field Tests at the Electronic Proving Grounds in Ft. Huachuca, AZ, and integration tests at the Central Technical Support Facility in Ft. Hood, TX, are examples of the tests planned to reduce risk in the SDD phase. A favorable Milestone C decision will permit award of the Low Rate Initial Production (LRIP) contract and Production and Deployment phase. The LRIP will:

- a. Establish an effective and efficient production base for the system required to provide a solid foundation on which to build FRP systems.
- b. Permit an orderly increase in production rate to mitigate risk.
- c. Procure production representative equipment to support test & evaluation.
- d. Support Doctrine, Training, Leadership Development, Organization, Materiel, Personnel and Facilities (DTLOMPF) and Tactics, Techniques and Procedures (TTP) development.
- e. Provide an opportunity to incorporate lessons learned from the comprehensive test and evaluation program into the production baseline.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0305204A - Tactical Unmanned Aerial Vehicles							D09		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Development Engineering & Prototype Manufacturing	C/CPIF/AF	General Atomics / ASI - San Diego, CA	75570	106724	1-3Q	30496	1-2Q	9686	1-2Q		222476	60826
Government Furnished Equipment	MIPR/REQ	Various Government Agencies	4215	410	1-3Q						4625	8494
Common System Integration	MIPR	AAI, MD and Various Government Agencies	2613	1050	2Q	1583	1-3Q				5246	
Launcher Software Development	MIPR	PM JAMS, Redstone Arsenal, AL		1000	2Q	1498					2498	
Aviation Mission Planning Systems	MIPR	Other Government Agency		1615	2Q	813	1-2Q				2428	
Next Generation Ice Protection	MIPR	AMRDEC, Redstone Arsenal, AL		1920	2Q						1920	
Subtotal:			82398	112719		34390		9686			239193	69320
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/FFP	Various Contractors	4294	4397	1-2Q	1858	1-2Q	420	1-2Q		10969	3459
Government Engineering Support	MIPR	AMRDEC and IMMC, Redstone Arsenal, AL	2570	3143	1-2Q	1238	1-2Q	240	1-2Q		7191	2730
Subtotal:			6864	7540		3096		660			18160	6189
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
System Test and Evaluation	MIPR	Various Government	3819	2031	2-3Q	6523	2-3Q	2026	2Q		14399	11115

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development				PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles						PROJECT D09		
		Agencies										
Subtotal:			3819	2031		6523		2026			14399	11115

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management Personnel	MIPR	PM UAS, Redstone Arsenal, AL	888	1451	1-4Q	750	1-4Q	300	1-2Q		3389	1716
Subtotal:			888	1451		750		300			3389	1716

Project Total Cost:			93969	123741		44759		12672			275141	88340
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Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0305204A - Tactical Unmanned Aerial Vehicles

PROJECT
D09

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13											
	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								
Limited User Testing (1) Milestone C Initial Operational Test and Evaluation (IOT&E)																																				

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles					PROJECT D09	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Limited User Testing			1Q					
Milestone C		4Q						
Initial Operational Test and Evaluation (IOT&E)				1Q				

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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles						PROJECT D10	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
D10 SUAV (MIP)		5923	1996	2000	2000	2000	2000	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Small Unmanned Aircraft System (SUAS) program provides the ground maneuver battalions and below with unprecedented situational awareness and enhanced force protection. SUAS is a man portable unmanned aircraft system capable of handling a wide variety of Intelligence, Surveillance & Reconnaissance (ISR) tasks at Battalion and below. The SUAS aircraft has a wingspan of 4.5 feet and weighs 4.2 pounds. It is hand-launched, and provides aerial observation, day or night, at line-of-sight ranges up to 10 kilometers. The aircraft has an endurance rate of 90 minutes and can deliver color or infrared imagery in real time to the ground control and remote viewing stations. SUAS obtained Milestone C approval 6 Oct 05 and successfully completed IOT&E Jun 06. The program obtained Full Rate Production authority 5 Oct 06.

Funding will provide product improvements studies/plans that include: noise reduction, integral radio location beacon, endurance and target location error. Effort will result in identification and implementation of technical solutions and product improvements to enhance the warfighting capability of the SUAS system. Additional efforts will focus on the identification, integration, and test of block II/III payloads.

FY09 program efforts will focus on Digital Data Link (DDL) development. Specific emphasis will be on productionization of the communication architecture developed in the ACTD phase, procurement of prototype systems for operational test in theater, soldier training, training materials, and environmental test.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Program Management Support			300
SUAS Product Improvement Studies and Plans		1975	1696
Digital Data Link		3948	
Total		5923	1996

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
SUAS Procurement (B00303)	15531	33254	30023	35652	20718	2349			137527

Comment:

C. Acquisition Strategy Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

7 - Operational system development

0305204A - Tactical Unmanned Aerial Vehicles

D10

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0305204A - Tactical Unmanned Aerial Vehicles							D10		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Improvement Studies and Plans	C/CPFF	AeroVironment, Simi Valley, California				1985	2Q	1696	2Q		3681	
DDL Development and Prototypes	C/CPFF	AeroVironment, Simi Valley, California				3538	2Q				3538	
Subtotal:						5523		1696			7219	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
DDL Testing In Theater	MIPR	Various				400	3Q				400	
Subtotal:						400					400	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management Personnel	MIPR	PM UAS, Redstone Arsenal, AL						300	1-4Q		300	
Subtotal:								300			300	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0305204A - Tactical Unmanned Aerial Vehicles

PROJECT

D10

Project Total Cost:

5923

1996

7919

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE							
7 - Operational system development		0305208A - Distributed Common Ground/Surface Systems							
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	135298	90088	57704	17639	10255	15690	15690	Continuing	Continuing
956 Distributed Common Ground System (DCGS) (MIP)	24213	19788	11344	2033	2202	191	191	Continuing	Continuing
D06 DCGS-A FUSION INTEGRATION (MIP)	24468	24411	6626	4483	1107	7500	7500	Continuing	Continuing
D07 DCGS-A COMMON MODULES (MIP)	75783	34446	28159	6384	4304	6999	6999	Continuing	Continuing
D08 DCGS-A SENSOR INTEGRATION (MIP)	10167	10780	10907	4074	2003	1000	1000	Continuing	Continuing
D15 MUSE & TES TADSS (MIP)	667	663	668	665	639				4577

A. Mission Description and Budget Item Justification: Distributed Common Ground System - Army (DCGS-A) will serve as the primary ground system of systems for airborne and ground sensor platforms. DCGS-A enables the commander to achieve situational understanding by leveraging multiple sources of data, information and intelligence to synchronize the elements of Joint and Combined Arms combat power to See First, Understand First, Act First and Finish Decisively. The core functions of DCGS-A are: receipt and processing of space, airborne, ground and maritime Intelligence, Surveillance and Reconnaissance (ISR) sensor data; control of select Army and joint ISR sensor systems; intelligence synchronization; ISR planning, reconnaissance and surveillance (R&S) integration; fusion of sensor information, and direction and distribution/dissemination of sensor information. DCGS-A draws information from a wide variety of automated and manual sources; on-board sensors, space platforms and unattended air and ground vehicles to enable the land component commander to achieve situational understanding, execute battle command, synchronize fires and effects and rapidly shift battle focus to protect the force and employ his forces more effectively. DCGS-A allows commanders at all levels to visualize and understand the threat and environment, predict threat intentions, execute targeting through targeting support, conduct ISR integration and support Information Operations.

Project 956 provides the DCGS-A enterprise system level design, net-centric architecture and infrastructure, to include integration of the U.S. Air Force developed DCGS Integrated Backbone (DIB). Project D06 provides single and Multi-Intelligence automated fusion capabilities. Project D07 funds Technology Insertion of DCGS-A capabilities into Current Force systems, and System Development and Demonstration (SDD), to include a common set of ISR analysis tools. D08 provides sensor integration to include sensor control, tasking and interoperability. Project D15 funds Training Aids, Devices, Simulators and Simulations (TADSS) for the Tactical Exploitation System (TES).

DCGS-A includes hardware for Fixed and Mobile configurations and common software that is scaleable and tailored by echelon and is interoperable with sensors, other Battlefield Operating Systems (BOS), and the DoD Distributed Common Ground/Surface System (DCG/SS) Family of Systems (FoS). Within the Brigade Combat Teams (BCTs), DCGS-A provides the Mobile ISR capability as well as an embedded software application on the Future Combat System (FCS) FoS and other select platforms. At the Corps, Division and Echelons Above Corps (EAC), DCGS-A is composed of hardware and software in Mobile and Fixed site configurations. As a system of systems, DCGS-A will consolidate and replace the capabilities found in the following Current Force systems: Joint Intelligence Operations Capability-Iraq (JIOC-I), All Source Analysis System (ASAS), Counter Intelligence/Human Intelligence (CI/HUMINT) Single Source Workstation, Tactical Exploitation System (TES), Guardrail Common Sensor (GRCS) Intelligence Processing Facility (IPF), Prophet Control, Common Ground Station (CGS), Digital Topographic Support System (DTSS) and Integrated Meteorological System (IMETS), sensor control and processing of select Unmanned Aerial Vehicles (UAVs) and Enhanced Trackwolf processing capabilities. DCGS-A is a key component of

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY

PE NUMBER AND TITLE

7 - Operational system development

0305208A - Distributed Common Ground/Surface Systems

Transformation and a top Army priority.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
7 - Operational system development	0305208A - Distributed Common Ground/Surface Systems		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	134313	81580	73974
Current BES/President's Budget (FY 2009)	135298	90088	57704
Total Adjustments	985	8508	-16270
Congressional Program Reductions		-592	
Congressional Rescissions			
Congressional Increases		9100	
Reprogrammings	985		
SBIR/STTR Transfer			
Adjustments to Budget Years			-16270

Change Summary Explanation: Funding: FY09 - Funds realigned (\$16,270) to DCGS-A Procurement to accelerate production/fielding of Brigade Combat Team (BCT) units.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0305208A - Distributed Common Ground/Surface Systems						PROJECT 956	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
956 Distributed Common Ground System (DCGS) (MIP)	24213	19788	11344	2033	2202	191	191	Continuing	Continuing

A. Mission Description and Budget Item Justification: Distributed Common Ground System - Army (DCGS-A) will serve as the primary ground system of systems for Army airborne and ground sensor platforms defined as Future Force systems. DCGS-A enables the commander to achieve situational understanding by leveraging multiple sources of data, information, and intelligence to synchronize the elements of Joint and Combined Arms combat power (maneuver, maneuver support and maneuver sustainment support). The core functions of DCGS-A are: receipt and processing of space, airborne, ground and maritime Intelligence, Surveillance and Reconnaissance (ISR) sensor data; control of select Army and joint ISR sensor systems; intelligence synchronization; ISR planning, reconnaissance and surveillance (R&S) integration; fusion of sensor information, and direction and distribution/dissemination of sensor information. It draws information from a wide variety of automated and manual sources; on-board sensors, space platforms, unattended air and ground vehicles, existing and new ISR capabilities, and an assortment of databases to enable the land component commander to execute battle command, synchronize fires and effects, rapidly shift battle focus, achieve situational understanding, protect the force, and employ forces more effectively. DCGS-A allows commanders at all levels to visualize, analyze and understand the threat and environment, predict threat intentions, execute targeting through targeting support, conduct ISR integration and support Information Operations.

This project establishes the DCGS-A Federated Network Centric Enterprise, facilitating system integration and network-enabled capability of existing and future intelligence, surveillance and reconnaissance (ISR) ground stations, eventually consolidating these capabilities into a single system of systems. An enterprise level approach based on a Service Oriented Architecture (SOA) will provide Commanders' and Staffs' access to various ISR ground station information from any ground station, and data exchange between Army ISR ground stations for improved intelligence sharing and understanding. DCGS-A will achieve joint, allied and coalition interoperability through implementation of the 10.2 DCGS Integration Backbone (DIB) to access other Services data and information that is critical to the Land Component Commander.

FY09 funds design, development and test of the DCGS-A enterprise level architecture supporting Fixed, Mobile and Embedded configurations.

NOTE: FY 2008 funding total does not include \$12,300 previously requested for current FY 2008 GWOT requirements.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Ongoing interoperability testing and evaluation to include Central Test Support Facility (CTSF) testing, Future Combat System (FCS) experimentation and integration and Joint testing and evaluation.	3497	3050	3410
Continue design and development of DCGS-A enterprise level net-centric architecture in support of Current and Future Force systems.	7036	6622	6572
Continue to evaluate, integrate and test new software applications and components for incorporation into the DCGS-A baseline.	1180	1016	1362
Continue Asymmetric Threat Response and Analysis Project (ATRAP).	2500	2400	
Continue Effects Based Approach to Operations.	1000	800	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0305208A - Distributed Common Ground/Surface Systems	PROJECT 956
Begin DCGS-A ASAS Integration.		2400
Begin Advanced Architecture Designs Supporting U.S. Army Net Centric Warfare.		1600
Begin Heuristic Internet Protocol Engine.		1900
Intelligence Data Exchange for Execution and Planning (IDEEP).	4000	
National Defense Imagery Processing Program.	1800	
Joint Visualization System.	2150	
Blast Risk Analysis and Mitigation Application.	1050	
Total	24213	19788

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
PE 0604321 CI/HUMINT Software Products (B41) (TIARA)	3266	1644	1721	3017	3223	3500	3700	Continuing	Continuing
BK5275 CI HUMINT Info Management System	21553	26406	37880	10686	13221	10848	10500	Continuing	Continuing
BZ7316 DCGS-A (MIP)	145098	146632	179146	201430	167810	160314	164586	Continuing	Continuing

Comment:

C. Acquisition Strategy DCGS-A will be executed via an evolutionary acquisition approach, providing incremental capability through Technology Insertion of Current Force systems and System Development and Demonstration (SDD) of Capability Demonstration Document (CDD) requirements. Each increment will incorporate and validate select DCGS-A capabilities into the overall DCGS-A system baseline, emphasizing migration of current force capabilities through integrated testing and continuous evaluation opportunities.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0305208A - Distributed Common Ground/Surface Systems							956		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
SETA Support to Visualization/Data Sharing, Modeling & Simulation	T&M	Booz-Allen, Eatontown, NJ	11028	1780	2Q	1450	2Q	1475	2Q	Cont.	Cont.	Cont.
DCGS-A Product Selection and Integration	MIPR	CERDEC/SEC, Ft. Monmouth, NJ	12730	2960	1-2Q	1996	1-2Q	1750	1-2Q	Cont.	Cont.	Cont.
SIL Software Integration	MIPR	CERDEC/RDCOM Ft. Monmouth, NJ	4945	1520	1-4Q	1782	1-4Q	1252	1-4Q	Cont.	Cont.	Cont.
Metadata Catalog	T&M	MITRE, Eatontown, NJ	2363	1288	2Q	2460	2Q	2121	2Q	Cont.	Cont.	Cont.
Asymmetric Threat Response and Analysis Project	MIPR	Battle Labs		2500	2Q	2400	2Q				4900	
Effects Based Approach to Operations	MIPR	Battle Labs		1000	2Q	800	2Q				1800	
DCGS-A ASAS Integration	MIPR	Battle Labs				2400	2Q				2400	
Advanced Architecture Designs for NCW	MIPR	Battle Labs				1600	2Q				1600	
Heuristic Internet Protocol Engine	MIPR	Battle Labs				1900	2Q				1900	
Intelligence Data Exchange for Execution and Planning (IDEEP)	MIPR	Battle Labs	3400	4000	2Q						7400	
National Defense Imagery Processing Program	MIPR	Battle Labs	4100	1800	2Q						5900	
Joint Visualization System	MIPR	Battle Labs		2150	2Q						2150	
Blast Risk Analysis and Mitigation Application	MIPR	Battle Labs		1050	2Q						1050	
Subtotal:			38566	20048		16788		6598		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0305208A - Distributed Common Ground/Surface Systems							956		
Objective Doctrine/TTP Development	MIPR	Ft. Huachuca, AZ	6723	100	2Q	100	2Q	100	2Q	Cont.	Cont.	Cont.
Matrix Support	MIPR	CECOM, Fort Monmouth NJ	4874	600	1Q	600	1Q	600	1Q	Cont.	Cont.	Cont.
Subtotal:			11597	700		700		700		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Joint Interoperability Test and Evaluation	MIPR	CTSF, Ft. Hood	2538	325	2Q	250	2Q	250	2Q		3363	
Operational Test support for DCGS-A	MIPR	ATEC	336	1997	2Q	1450	2Q	3096	2Q		6879	
Subtotal:			2874	2322		1700		3346			10242	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Project Management	In-House	PM, DCGS-A	5432	1143	1Q	600	1Q	700	1Q	Cont.	Cont.	Cont.
Subtotal:			5432	1143		600		700		Cont.	Cont.	Cont.
Project Total Cost:			58469	24213		19788		11344		Cont.	Cont.	Cont.



Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
	DCGS-A Participation in FCS Ex 1.1																											
Version 3 Intra-Army Interoperability Certification (IAIC)																												
Version 3 Operational Assessment (OA)																												
Version 3 Fielding to OIF/OEF																												
Version 3.1 IAIC																												
Version 3.1 LUT																												
Version 3.1 Worldwide Fielding (ASAS-L Displacement)																												
Version 4 (DCGS-A Software Baseline 1.0) IAIC																												
Version 4 (DCGS-A Software Baseline 1.0) Operational Evaluation (OE)																												
Version 4 (DCGS-A Software Baseline 2.0) IAIC																												
Version 4 (DCGS-A Software Baseline 2.0) LUT																												
(1) Version 4 (DCGS-A Software Baseline 2.0) Milestone C																												
(2) Version 4 (DCGS-A Software Baseline 2.0) Initial Operational Capability (IOC)																												

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE												PROJECT																		
7 - Operational system development		0305208A - Distributed Common Ground/Surface Systems												956																		
Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13							
	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				
DCGS-A Software Baseline (DSB 4.0) Initial Operational Test & Eval (IOT&E)																									<div style="text-align: center;">  DSB 4.0 IOT&E </div>				<div style="text-align: center;">  DCGS-A FRP </div>			
(3) DCGS-A Full Rate Production																																

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE					PROJECT	
7 - Operational system development		0305208A - Distributed Common Ground/Surface Systems					956	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
DCGS-A Participation in FCS Ex 1.1	1Q - 2Q							
Version 3 Intra-Army Interoperability Certification (IAIC)	2Q							
Version 3 Operational Assessment (OA)	3Q							
Version 3 Fielding to OIF/OEF		2Q - 3Q						
Version 3.1 IAIC		3Q						
Version 3.1 LUT		4Q						
Version 3.1 Worldwide Fielding (ASAS-L Displacement)			1Q - 4Q	1Q - 4Q	1Q - 2Q			
Version 4 (DCGS-A Software Baseline 1.0) IAIC			2Q					
Version 4 (DCGS-A Software Baseline 1.0) Operational Evaluation (OE)			2Q					
Version 4 (DCGS-A Software Baseline 2.0) IAIC				2Q				
Version 4 (DCGS-A Software Baseline 2.0) LUT				2Q				
Version 4 (DCGS-A Software Baseline 2.0) Milestone C				4Q				
Version 4 (DCGS-A Software Baseline 2.0) Initial Operational Capability (IOC)				4Q				
DCGS-A Software Baseline (DSB 4.0) Initial Operational Test & Eval (IOT&E)						3Q		
DCGS-A Full Rate Production						4Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0305208A - Distributed Common Ground/Surface Systems					PROJECT D06			
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost	
D06 DCGS-A FUSION INTEGRATION (MIP)	24468	24411	6626	4483	1107	7500	7500	Continuing	Continuing	

A. Mission Description and Budget Item Justification: Distributed Common Ground System - Army (DCGS-A) will serve as the primary ground system of systems for airborne and ground sensor platforms defined as Future Force systems. DCGS-A enables the commander to achieve situational understanding by leveraging multiple sources of data, information, and intelligence to synchronize the elements of Joint and Combined Arms combat power (maneuver, maneuver support and maneuver sustainment support). The core functions of DCGS-A are: collection and processing of space, airborne, ground and maritime Intelligence, Surveillance and Reconnaissance (ISR) sensor data; control of select Army and joint ISR sensor systems; intelligence synchronization; ISR planning, reconnaissance and surveillance (R&S) integration; fusion of sensor information, and direction and distribution/dissemination of sensor information. It draws information from a wide variety of automated and manual sources; on-board sensors, space platforms, unattended air and ground vehicles, existing and new ISR capabilities, and an assortment of databases to enable the land component commander to execute battle command, synchronize fires and effects, rapidly shift battle focus, achieve situational understanding, protect the force, and employ his forces more effectively. DCGS-A allows commanders at all levels to visualize and understand the threat and environment, predict threat intentions, execute targeting through targeting support, conduct ISR integration and support Information Operations.

This project establishes DCGS-A sensor fusion and all source production capabilities, leveraging previously completed algorithm, on-going Future Combat System (FCS) and Science and Technology (S&T) developmental efforts to meet the requirements for battle management and situational awareness, intelligence preparation of the battlespace (battle damage assessments, course of action/predictive analysis, wargaming), target development (deliberate, time critical, high value/high payoff), collection/ISR management (requirement and mission), electronic warfare/countermeasures, force protection, indications and warnings, operational security, and battlefield visualization and presentation. The Sensor Fusion capability will address both traditional intelligence disciplines (signals intelligence, imagery intelligence, human intelligence, measurements and signatures intelligence) from organic, Theater, and National assets (systems and databases), and non-traditional sources (open source intelligence, fire support) to achieve a complete and universal understanding of the situation in support of the commander/warfighter, battle command databases, and the Common Operational Picture (COP). The sensor fusion capability will support all types of units across a broad spectrum of both traditional and non-traditional operations, and improve interoperability with Joint, Allied, and Coalition forces.

FY09 funds the development and integration of traditional and non-traditional multi-intelligence sensor fusion products and technologies into the DCGS-A Fixed, Mobile and Embedded configurations to produce a fully automated fusion capability.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Continue normalization and integration of sensor fusion process and Multi-INT sources, geospatial and weather data.	5855	5131	2145
Continue to enhance controlled interface technology for improved product distribution at multiple security levels.	2482	2059	2119
Continued analysis and prototyping for porting sensor fusion mission applications into the FCS environment.	1899	1285	1065
Continue to migrate sensor fusion processes and Current Force systems capabilities into DCGS-A architecture/Service Oriented	14232	15936	1297

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0305208A - Distributed Common Ground/Surface Systems	PROJECT D06
Architecture (SOA) environment.		
Total	24468	24411

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
PE 654321 ASAS Evolutionary ACQ (B19) (TIARA)	6739	3322	3411						13472
K28801 ASAS Modules	34293	52485	58718	9992	12987	6053			174528

Comment:

C. Acquisition Strategy DCGS-A will be executed via an evolutionary acquisition approach, providing incremental capability through Technology Insertion of Current Force systems and System Development and Demonstration (SDD) of Capability Demonstration Document (CDD) requirements. Each increment will incorporate and validate select DCGS-A capabilities into the overall DCGS-A system baseline, emphasizing migration of current force capabilities through integrated testing and continuous evaluation opportunities.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0305208A - Distributed Common Ground/Surface Systems							D06		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Enhancement of interfaces between sensor fusion processes and various INT domains	MIPR	PM IE, Ft. Belvoir, VA	11412	917	1Q	950	2Q	975	2Q	Cont.	Cont.	Cont.
Integrate FCS fusion capabilities into DCGS-A baseline	MIPR	PM FCS BCT, Warren, MI	3656	500	2-3Q	497	2Q	500	2Q	Cont.	Cont.	Cont.
Transition of sensor fusion processes and Current Force systems capabilities to DCGS-A	MIPR	CERDEC/RDCOM	5749	3250	1-4Q	2471	1-2Q	560	1-2Q	Cont.	Cont.	Cont.
Integration of sensor fusion processes into DCGS-A Mobile configuration	Sole Source CPIF/CPAF	Northrop Grumman, Linthicum, MD	1216	15875	2Q	12390	2Q	194		Cont.	Cont.	Cont.
Integration of Overwatch capability	Sole Source CPIF/CPAF	Overwatch, Austin, TX	1100	1026	1-2Q	5050	1-2Q	1410		Cont.	Cont.	Cont.
Subtotal:			23133	21568		21358		3639		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	CECOM/RDCOM, Ft. Monmouth, NJ	1120	620	1Q	650	1Q	680	1Q	Cont.	Cont.	Cont.
SETA Support	Competitive T&M	Sytex, Vienna, VA	2930	980	1Q	1020	1Q	1040	1Q	Cont.	Cont.	Cont.
Subtotal:			4050	1600		1670		1720		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0305208A - Distributed Common Ground/Surface Systems							D06		
Test & Evaluation	MIPR	ATEC/EPG	150	950	1Q	901	1Q	790		Cont.	Cont.	Cont.
Subtotal:			150	950		901		790		Cont.	Cont.	Cont.
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Project Management	In House	PM DCGS-A	600	350	1-2Q	482		477		Cont.	Cont.	Cont.
Subtotal:			600	350		482		477		Cont.	Cont.	Cont.
Project Total Cost:			27933	24468		24411		6626		Cont.	Cont.	Cont.

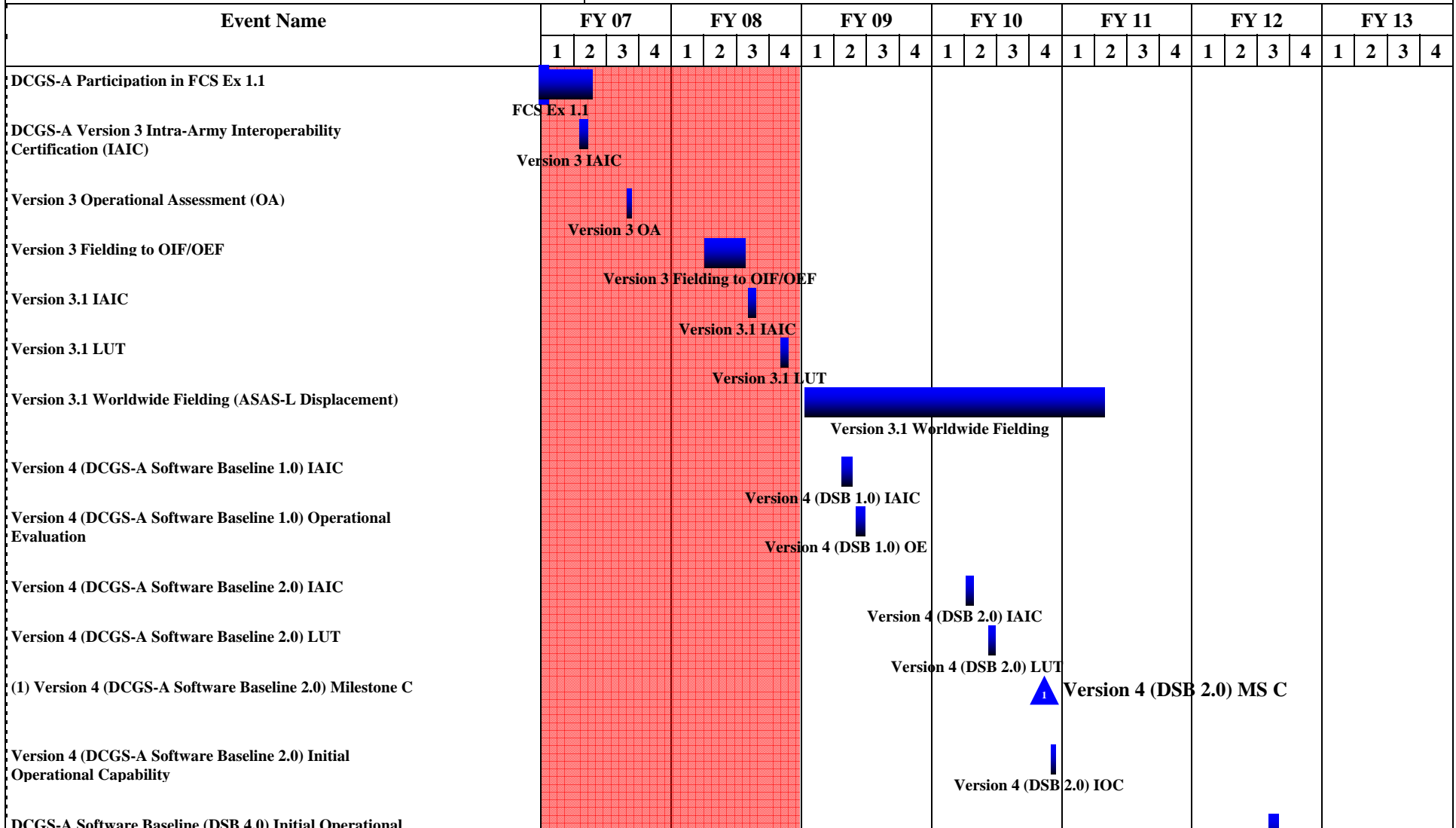
Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0305208A - Distributed Common Ground/Surface Systems

PROJECT
D06



Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0305208A - Distributed Common Ground/Surface Systems

PROJECT
D06

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
(2) DCGS-A Full Rate Production																									▲ DCGS-A FRP			

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0305208A - Distributed Common Ground/Surface Systems					PROJECT D06	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
DCGS-A Participation in FCS Ex 1.1	1Q - 2Q							
DCGS-A Version 3 Intra-Army Interoperability Certification (IAIC)	2Q							
Version 3 Operational Assessment (OA)	3Q							
Version 3 Fielding to OIF/OEF		2Q - 3Q						
Version 3.1 IAIC		3Q						
Version 3.1 LUT		4Q						
Version 3.1 Worldwide Fielding (ASAS-L Displacement)			1Q - 4Q	1Q - 4Q	1Q - 2Q			
Version 4 (DCGS-A Software Baseline 1.0) IAIC			2Q					
Version 4 (DCGS-A Software Baseline 1.0) Operational Evaluation			2Q					
Version 4 (DCGS-A Software Baseline 2.0) IAIC				2Q				
Version 4 (DCGS-A Software Baseline 2.0) LUT				2Q				
Version 4 (DCGS-A Software Baseline 2.0) Milestone C				4Q				
Version 4 (DCGS-A Software Baseline 2.0) Initial Operational Capability				4Q				
DCGS-A Software Baseline (DSB 4.0) Initial Operational Test & Eval (IOT&E)						3Q		
DCGS-A Full Rate Production						4Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0305208A - Distributed Common Ground/Surface Systems					PROJECT D07	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
D07 DCGS-A COMMON MODULES (MIP)	75783	34446	28159	6384	4304	6999	6999	Continuing	Continuing

A. Mission Description and Budget Item Justification: Distributed Common Ground System - Army (DCGS-A) will serve as the primary ground system of systems for airborne and ground sensor platforms defined as Objective Force systems. DCGS-A enables the commander to achieve situational understanding by leveraging multiple sources of data, information, and intelligence to synchronize the elements of Joint and Combined Arms combat power (maneuver, maneuver support and maneuver sustainment support). The core functions of DCGS-A are: collection and processing of space, airborne, ground and maritime Intelligence, Surveillance and Reconnaissance (ISR) sensor data; control of select Army and joint ISR sensor systems; intelligence synchronization; ISR planning, reconnaissance and surveillance (R&S) integration; fusion of sensor information, and direction and distribution/dissemination of sensor information. It draws information from a wide variety of automated and manual sources; on-board sensors, space platforms, unattended air and ground vehicles, existing and new ISR capabilities, and an assortment of databases to enable the land component commander to execute battle command, synchronize fires and effects, rapidly shift battle focus, achieve situational understanding, protect the force, and employ his forces more effectively. DCGS-A allows commanders at all levels to visualize and understand the threat and environment, predict threat intentions, execute targeting through targeting support, conduct ISR integration and support Information Operations.

This project provides for the design, development, integration and test of the DCGS-A system of systems at all echelons, from embedded DCGS-A up to Fixed Site operations. The effort includes system engineering, software integration and development, test & evaluation, and use of Modeling and Simulation (M&S) to develop DCGS-A Mobile systems with common multi-function hardware and software combinations (i.e. user workstations) capable of performing all DCGS-A functions. Development will focus on common module hardware and software that is scalable to allow commanders increased flexibility in the intelligence force package deployed such that it can be tailored to the echelon, location, and mission that DCGS-A will be required to support. Included in the development will be the stand-up of a Federated Systems Integration Lab (SIL) to assess and implement existing and new candidate software applications and components into the DCGS-A baseline design. A common set of ISR Analysis Tools to support collaboration, exploitation, fusion and collection management will be developed that operate within the construct of distributed, reach operations within the DCGS-A enterprise in order to maximize data access and minimize forward footprint. This will ultimately result in a DCGS-A design that reduces physical and logistics footprint, eases training burden, and decreases sustainability requirements.

FY09 funds Technology Insertion of DCGS-A capabilities into Current Force systems, common module multi-function hardware, Battle Command interoperability and integration and test of new software applications. The System Integration Lab (SIL) will evaluate candidate software applications for integration of Joint common components and interoperability amongst the Services.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Completed SIL design, planning and integration of 10.2 DCGS Integrated Backbone (DIB) and the Joint Intelligence Operational Capability-Iraq (JIOC-I) Brain.	3683		
Continuation of Embedded DCGS-A design/analysis and Future Combat System (FCS) support.	2950	3060	3140

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0305208A - Distributed Common Ground/Surface Systems	PROJECT D07		
Continue to evaluate, integrate and test existing and new software applications. Integrate Best Value components from DoD wide systems into DCGS-A baseline.	37743	6524	3350	
Continue to develop and enhance two-way Battle Command to include Joint Command and Control (JC2) interoperability.	8677	3135	2475	
Continued Technology Insertion of Current Force capabilities into integrated DCGS-A baseline.	22730	21727	19194	
Total	75783	34446	28159	

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
BZ7316 DCGS-A Unit of Employment	145098	146632	179146	201430	167810	160314	164586	Continuing	Continuing
KA2550 Digital Topographic SPT SYS (DTSS)	47606	38591	26979	8500					121676

Comment:

C. Acquisition Strategy DCGS-A will be executed via an evolutionary acquisition approach, providing incremental capability through Technology Insertion of Current Force systems and System Development and Demonstration (SDD) of Capability Demonstration Document (CDD) requirements. Each increment will incorporate and validate select DCGS-A capabilities into the overall DCGS-A system baseline, emphasizing migration of current force capabilities through integrated testing and continuous evaluation opportunities.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0305208A - Distributed Common Ground/Surface Systems							D07		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Embedded DCGS-A scalability design/analysis and FCS support	Competitive CPIF/CPAF	Boeing Corp, CA	7550	2805	2Q	2850	2Q	2775	2Q	Cont.	Cont.	Cont.
System integration and test support for Spirals 1, 2 & 3	Sole Source CPIF/CPAF	Northrop Grumman, Linthicum, MD	5573									
Evaluate, integrate and test existing and new software applications and components into DCGS-A SOA	Sole Source CPIF/CPAF	Northrop Grumman, Linthicum, MD	25227	30720	2Q	5494	2Q	3150	2Q	Cont.	Cont.	Cont.
Technology Insertion of Current Force capabilities into DCGS-A baseline	Sole Source CPIF/CPAF	Northrop Grumman, Linthicum, MD	10050	24330	1-3Q	14855	1-3Q	12833	1-3Q	Cont.	Cont.	Cont.
SIL design, planning and implementation of 10.2 DIB, JIOC-I Brain, and V3/V4	MIPR	CERDEC, Ft. Monmouth	10950	5580	1Q	2162	1Q	576	1Q	Cont.	Cont.	Cont.
FIA/TES-M Migration to Fixed Site	Sole Source	ASPO/Northrop Grumman	16800								16800	
Subtotal:			76150	63435		25361		19334		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	RDCOM/CECOM, Ft. Monmouth, NJ	2074	1125	1Q	1240	1Q	1285	1Q	Cont.	Cont.	Cont.
SETA Support	Competitive T&M	Booz-Allen Hamilton	1638	1150	1-2Q						2788	
SETA Support	Competitive T&M	TBD		3870	1-2Q	4965		5150			13985	
Subtotal:			3712	6145		6205		6435		Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0305208A - Distributed Common Ground/Surface Systems	PROJECT D07
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III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test support	MIPR	ATEC	1577								1577	
Subtotal:			1577								1577	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Project Management	In House	PM DCGS-A	3652	6203	1Q	2880		2390		Cont.	Cont.	Cont.
Subtotal:			3652	6203		2880		2390		Cont.	Cont.	Cont.

Project Total Cost:			85091	75783		34446		28159		Cont.	Cont.	Cont.
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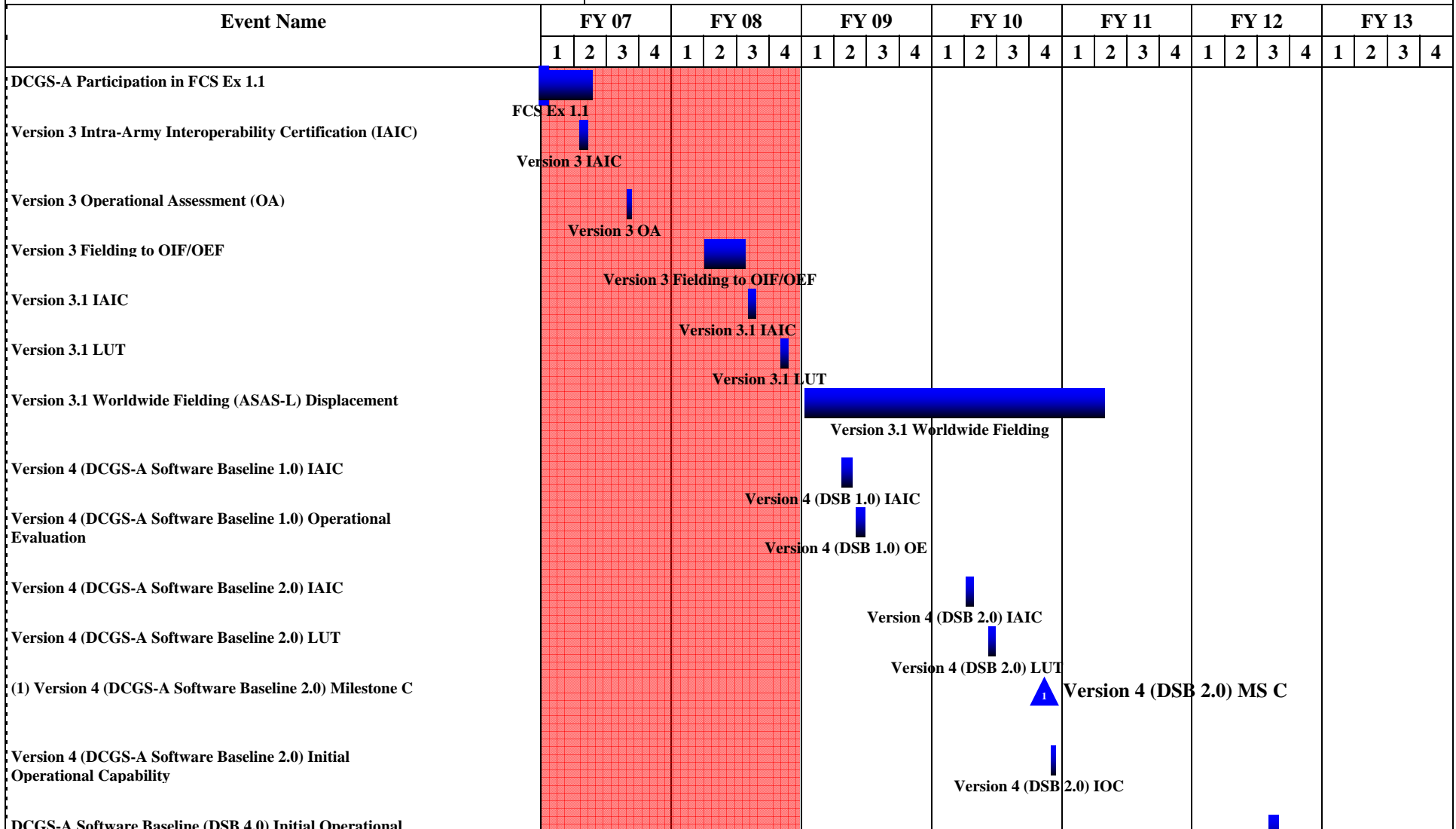
Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0305208A - Distributed Common Ground/Surface Systems

PROJECT
D07



Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0305208A - Distributed Common Ground/Surface Systems												PROJECT D07														
Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
(2) DCGS-A Full Rate Production																									▲ DCGS-A FRP			

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE					PROJECT	
7 - Operational system development		0305208A - Distributed Common Ground/Surface Systems					D07	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
DCGS-A Participation in FCS Ex 1.1	1Q - 2Q							
Version 3 Intra-Army Interoperability Certification (IAIC)	2Q							
Version 3 Operational Assessment (OA)	3Q							
Version 3 Fielding to OIF/OEF		2Q - 3Q						
Version 3.1 IAIC		3Q						
Version 3.1 LUT		4Q						
Version 3.1 Worldwide Fielding (ASAS-L) Displacement			1Q - 4Q	1Q - 4Q	1Q - 2Q			
Version 4 (DCGS-A Software Baseline 1.0) IAIC			2Q					
Version 4 (DCGS-A Software Baseline 1.0) Operational Evaluation			2Q					
Version 4 (DCGS-A Software Baseline 2.0) IAIC				2Q				
Version 4 (DCGS-A Software Baseline 2.0) LUT				2Q				
Version 4 (DCGS-A Software Baseline 2.0) Milestone C				4Q				
Version 4 (DCGS-A Software Baseline 2.0) Initial Operational Capability				4Q				
DCGS-A Software Baseline (DSB 4.0) Initial Operational Test & Eval (IOT&E)						3Q		
DCGS-A Full Rate Production						4Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0305208A - Distributed Common Ground/Surface Systems						PROJECT D08	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
D08 DCGS-A SENSOR INTEGRATION (MIP)	10167	10780	10907	4074	2003	1000	1000	Continuing	Continuing

A. Mission Description and Budget Item Justification: Distributed Common Ground System - Army (DCGS-A) will serve as the primary ground system of systems for airborne and ground sensor platforms defined as Future Force systems. DCGS-A enables the commander to achieve situational understanding by leveraging multiple sources of data, information, and intelligence to synchronize the elements of Joint and Combined Arms combat power (maneuver, maneuver support and maneuver sustainment support). The core functions of DCGS-A are: collection and processing of space, airborne, ground and maritime Intelligence, Surveillance and Reconnaissance (ISR) sensor data; control of select Army and joint ISR sensor systems; intelligence synchronization; ISR planning, reconnaissance and surveillance (R&S) integration; fusion of sensor information, and direction and distribution/dissemination of sensor information. It draws information from a wide variety of automated and manual sources; on-board sensors, space platforms, unattended air and ground vehicles, existing and new ISR capabilities, and an assortment of databases to enable the land component commander to execute battle command, synchronize fires and effects, rapidly shift battle focus, achieve situational understanding, protect the force, and employ his forces more effectively. DCGS-A allows commanders at all levels to visualize and understand the threat and environment, predict threat intentions, execute targeting through targeting support, conduct ISR integration and support Information Operations.

This project addresses Intelligence, Surveillance and Reconnaissance (ISR) sensor integration and interoperability with existing and new platforms and sensors to include a common data link solution.

FY09 funds transition, test, integration and training of new and Current Force sensors into the DCGS-A system design and architecture.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Continue to isolate and integrate Current Force Multi-INT sensor (Human Intelligence, Imagery Intelligence, Signal Intelligence, Measurement and Signature Intelligence) modules into the DCGS-A network.	3261	2859	2344
Continued planning and analysis of Future Force Multi-INT sensor modules for incorporation into the DCGS-A network.	1152	4230	4319
Continue to refactor Current Force ISR capabilities in the DCGS-A infrastructure.	2178	1606	1020
Continued development of training materials for V3 and V4 Mobile systems.	826	2085	3224
Completed IMAg-ATC and Net-Centric Imagery Applications for Fixed and Mobile Sites of Multi-Services DCGS-A	2750		
Total	10167	10780	10907

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
BZ7316 DCGS-A Unit of Employment	145098	146632	179146	201430	167810	160314	164586	Continuing	Continuing

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0305208A - Distributed Common Ground/Surface Systems

PROJECT

D08

Comment:

C. Acquisition Strategy DCGS-A will be executed via an evolutionary acquisition approach, providing incremental capability through Technology Insertion of Current Force systems and System Development and Demonstration (SDD) of Capability Demonstration Document (CDD) requirements. Each increment will incorporate and validate select DCGS-A capabilities into the overall DCGS-A system baseline, emphasizing migration of current force capabilities through integrated testing and continuous evaluation opportunities.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0305208A - Distributed Common Ground/Surface Systems							D08		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Integrate Current Force Multi-INT sensor modules into DCGS-A	Sole Source CPIF/CPAF	Northrop Grumman, Linthicum, MD	9447	3567	1Q	3014	2Q	2666	2Q	Cont.	Cont.	Cont.
Analysis of Future Force Multi-INT sensor modules for DCGS-A network	Sole Source CPIF/CPAF	Northrop Grumman, Linthicum, MD	925	1900	2Q	3941	2Q	4100	2Q	Cont.	Cont.	Cont.
Develop and Integrate components for sensor data distribution in DCGS-A	Sole Source CPIF	SRE, Susquehanna, PA	5498	2700	1Q					Cont.	Cont.	Cont.
Develop training materials	T&M	JHT, Orlando, FL	519	780	2Q	2575	2Q	2881	2Q	Cont.	Cont.	Cont.
Subtotal:			16389	8947		9530		9647		Cont.	Cont.	Cont.
II. Support Costs			Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	CECOM	375	200	1Q	200	1Q	200		Cont.	Cont.	Cont.
Subtotal:			375	200		200		200		Cont.	Cont.	Cont.
III. Test And Evaluation			Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Integration and test of Current Force sensor modules into DCGS-A Spirals	Competitive CPIF/CPAF	Northrop Grumman, Linthicum, MD	833								833	
Subtotal:			833								833	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0305208A - Distributed Common Ground/Surface Systems	PROJECT D08
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management	In House	PM DCGS-A	2509	1020	1Q	1050		1060		Cont.	Cont.	Cont.
Subtotal:			2509	1020		1050		1060		Cont.	Cont.	Cont.
Project Total Cost:			20106	10167		10780		10907		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development




PE NUMBER AND TITLE
0305208A - Distributed Common Ground/Surface Systems

PROJECT
D08

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
DCGS-A Participation in FCS Ex 1.1	█																											
Version 3 Intra-Army Interoperability Certification (IAIC)	█																											
Version 3 Operational Assessment (OA)																												
Version 3 Fielding to OIF/OEF																												
Version 3.1 IAIC																												
Version 3.1 LUT																												
Version 3.1 Worldwide Fielding (ASAS Displacement)													█															
Version 4 (DCGS-A Software Baseline 1.0) IAIC																												
Version 4 (DCGS-A Software Baseline 1.0) Operational Evaluation																												
Version 4 (DCGS-A Software Baseline 2.0) IAIC																												
Version 4 (DCGS-A Software Baseline 2.0) LUT																												
(1) Version 4 (DCGS-A Software Baseline 2.0) Milestone C																												
(2) Version 4 (DCGS-A Software Baseline 2.0) Initial Operational Capability																												

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0305208A - Distributed Common Ground/Surface Systems												PROJECT D08															
Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
DCGS-A Software Baseline (DSB 4.0) Initial Operational Test & Eval (IOT&E)																					 DSB 4.0 IOT&E				 DCGS-A FRP			
(3) DCGS-A Full Rate Production																					 DCGS-A FRP							

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0305208A - Distributed Common Ground/Surface Systems					PROJECT D08	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
DCGS-A Participation in FCS Ex 1.1	1Q - 2Q							
Version 3 Intra-Army Interoperability Certification (IAIC)	2Q							
Version 3 Operational Assessment (OA)	3Q							
Version 3 Fielding to OIF/OEF		2Q - 3Q						
Version 3.1 IAIC		3Q						
Version 3.1 LUT		4Q						
Version 3.1 Worldwide Fielding (ASAS Displacement)			1Q - 4Q	1Q - 4Q	1Q - 2Q			
Version 4 (DCGS-A Software Baseline 1.0) IAIC			2Q					
Version 4 (DCGS-A Software Baseline 1.0) Operational Evaluation			2Q					
Version 4 (DCGS-A Software Baseline 2.0) IAIC				2Q				
Version 4 (DCGS-A Software Baseline 2.0) LUT				2Q				
Version 4 (DCGS-A Software Baseline 2.0) Milestone C				4Q				
Version 4 (DCGS-A Software Baseline 2.0) Initial Operational Capability				4Q				
DCGS-A Software Baseline (DSB 4.0) Initial Operational Test & Eval (IOT&E)						3Q		
DCGS-A Full Rate Production						4Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0702239A - Avionics Component Improvement Program						PROJECT C92		
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
C92 AVIONICS COMPONENT ANALYSIS	1281	1017	1023						3321

A. Mission Description and Budget Item Justification: The Avionics Component Improvement Program (AvCIP) is a Joint Services initiative to combat parts obsolescence, improve reliability, safety and accelerate technology infusion into avionics programs.

FY 2007 funding total includes no funding received in GWOT supplemental.

FY 2008 funding total includes no funding received in the Bridge Supplemental.

FY 2008 funding totals do not include any previously requested funding for current FY 2008 GWOT requirements, and no FY 2008 GWOT funds have been previously requested in the RDTE Project of C92.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Determine critical avionics (communications, navigation, surveillance, sensors, combat identification, mission planning, and interoperability) deficiencies, prioritize and conduct initial technology improvements effort.	853	637	601
Identify software techniques and opportunities associated with open system architectures targeted to reduce initial and recurring avionics integration costs.	323	300	370
Continue Program Management Support	105	52	52
Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Reduction		28	
Total	1281	1017	1023

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0702239A - Avionics Component Improvement Program	PROJECT C92
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<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	1020	1024	1030
Current BES/President's Budget (FY 2009)	1281	1017	1023
Total Adjustments	261	-7	-7
Congressional Program Reductions		-7	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	290		
SBIR/STTR Transfer	-29		
Adjustments to Budget Years			-7

FY07: Reprogramming actions were to address emerging obsolescence concerns on Avionics components.

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

D. Acquisition Strategy The Acquisition Strategy is to identify emerging avionics performance and obsolescence problems. AvCIP is an initiative that enables streamlined management of present-day common avionics/electronics critical readiness degraders, technology insertion opportunities and cost reduction solutions. The program will annually compete candidate solutions according to criticality of operational contribution, technical risk, return on investment, commonality and breadth of application across multiple platforms.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0702239A - Avionics Component Improvement Program							C92		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Determine critical avionics deficiencies and initiate technology improvement efforts.	Various	AMCOM, Redstone Arsenal, AL; CECOM/Fort Monmouth, NJ; JVYS, Huntsville, AL	1263	853	1-3Q	637	1-3Q	601	1-3Q		3354	
Identify SW techniques and opportunities associated w/open system architectures in reduction of cost	Various	AMCOM, Redstone Arsenal, AL	461	323	1-3Q	300	1-3Q	370	1-3Q		1454	
New R3 Line												
Subtotal:			1724	1176		937		971			4808	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT	
7 - Operational system development			0702239A - Avionics Component Improvement Program							C92	
PM Spt (AVCIP)	Various	AMCOM, Redstone Arsenal, AL/PM AME	183	105	1Q	52	1Q	52	1Q	392	
SBIR/STTR						28				28	
Subtotal:			183	105		80		52		420	
Project Total Cost:			1907	1281		1017		1023		5228	

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0702239A - Avionics Component Improvement Program																PROJECT C92																			
Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13											
	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								
Critical Avionics Improvement Effort	Avionics Improvements																																			
Software Techniques Associated with Open System Architectures	Software Techniques																																			
Provide PM Admin Support	PM Admin Support																																			

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0702239A - Avionics Component Improvement Program					PROJECT C92	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Critical Avionics Improvement Effort	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Software Techniques Associated with Open System Architectures	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Provide PM Admin Support	1Q - 4Q	1Q - 4Q	1Q - 4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE							
7 - Operational system development		0708045A - End Item Industrial Preparedness Activities							
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	109335	87338	69084	69630	70186	71745	73360		616374
E25 MFG SCIENCE & TECH	65369	66471	69084	69630	70186	71745	73360		485845
EA2 MANTECH INITIATIVES (CA)	43966	20867							130529

A. Mission Description and Budget Item Justification: This program element (PE) funds the Army Manufacturing Technology (ManTech) program. The goal of the ManTech program is to enable producibility and affordability of advanced and enabling technologies by developing reliable manufacturing processes and increasing production yields, which result in cost savings and reduced risk of transitioning military-unique manufacturing processes to production. The ManTech program assists the Army in meeting the goals and timelines of the Future Combat Systems (FCS), the Future Force and, where feasible, the Current Force. The program also fosters the transfer of new/improved manufacturing technologies to the industrial base. This PE comprises two projects. Project E25 includes manufacturing efforts that have potential for high payoff across the spectrum of Army systems and/or significant impact on national manufacturing issues. Major investment areas include Aviation, Armor/Survivability, Sensors, Electronics/Power Systems, Precision Munitions/Armaments, and Flexible Displays. Project EA2 funds congressional special interest items. Work in this program is related to and fully coordinated with on-going Army Science and Technology efforts such as the third generation Forward-Looking Infrared Technology (FLIR) effort in PE 0603710A, projects K70 and K86; Low Cost High G, Micro-Electro-Mechanical-Systems (MEMS) Inertial Measurement Units (IMU) in PE 0602303A, project 214; FCS Armor Development effort in PE 0602105A, project H84; PE 0602618A, project H80; PE 0602601A, projects C05 and H91; and PE 0603005A, project 221; and the Flexible Display Initiative in PE 0602705A, project H94. This PE contains no duplication of effort within the Military Departments.

The cited work is consistent with the Department of Defense Research and Engineering Strategic Plan, the Army Science and Technology Master Plan, the Army Modernization Strategy, and the Army Posture Statement. The US Army Research, Development, and Engineering Command manages this PE and efforts are executed by the appropriate Army Research Laboratory and Research, Development, and Engineering Centers.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
7 - Operational system development	0708045A - End Item Industrial Preparedness Activities		

<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	112223	66869	69495
Current BES/President's Budget (FY 2009)	109335	87338	69084
Total Adjustments	-2888	20469	-411
Congressional Program Reductions		-531	
Congressional Rescissions			
Congressional Increases		21000	
Reprogrammings	147		
SBIR/STTR Transfer	-3035		
Adjustments to Budget Years			-411

Twelve FY08 congressional adds totaling \$21000 were added to this PE.

- (\$400) Specialized Compact Automated Mechanical Clearance Platform (SCAMP)
- (\$1000) Advanced Materials Processing for Ultra-Efficient Power Systems
- (\$1000) Legacy Aerospace Gear Drive Re-eng Initiative
- (\$1600) Aging Weapons Systems Structural Repair
- (\$1600) Electrodeposited Coatings Systems for Munitions
- (\$1600) Laser Engineered Net Shaping (LENS) Mftg Qualifica
- (\$1600) National Center for Defense Manufacturing and Machining
- (\$1600) SuperPulse Laser System Development for Turbine Engine Applications
- (\$2000) High Temperature Structural Ceramic Materials
- (\$2400) Next Generation Combat Helmet
- (\$3000) Smart Machine Platform Initiative
- (\$3200) Improved Manufacturing Process for SAPI

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0708045A - End Item Industrial Preparedness Activities						PROJECT E25	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
E25 MFG SCIENCE & TECH	65369	66471	69084	69630	70186	71745	73360		485845

A. Mission Description and Budget Item Justification: The goal of this Army Manufacturing Technology (ManTech) project is to reduce costs and risks of manufacturing technologies that enable the affordable production and sustainment of future weapon systems for the Future Combat Systems (FCS) and other Future Force systems, as well as the affordable transition of new technologies that can enhance capabilities of Current Force systems. Objectives address advanced manufacturing processes, equipment, and systems that enhance the quality and/or quantity of products while achieving reductions in cost and/or the transfer of improved manufacturing technologies to the industrial base. ManTech assists the Army in meeting FCS and Future Force performance, sustainability, and reliability goals and timelines and has potential to reduce risks and costs of new technologies for weapons systems. Efforts have potential for high payoff across the spectrum of Army weapon systems and significant positive impact on national manufacturing issues and the US industrial base. Current investment areas are: Aviation, Armor/Survivability, Sensors, Electronics/Power Systems, Precision Munitions/Armaments, and Flexible Displays. In aviation the Embedded Sensor Processes for Aviation Composite Structures effort advances the manufacturing technology process of placing embedded sensors that provide information to extend the life of the into the Apache vertical stabilizer. The goal is to capture data that may allow the PM to extend airframe life from 10,000 hours to 10,800, thus reducing the cost of the airframe when amortized into the cost per flight hour. In Armor/Survivability, the efforts in armor address manufacturing/production of vehicle protective systems. The objective of Low Cost Manufacturing of Materials for Improved Warfighter Protection improves the current manufacturing processes for headgear and body armor to enable a new generation of improved ballistic materials and multifunction fiber architectures to be introduced. In Sensors, the third generation forward looking infrared (FLIR) Dewar/ Cooler Aperature (IDCA) effort, which complements the third generation FLIR technology effort conducted in PE 0603710A, projects K70 and K86, is focused on improving manufacturing and assembly processes of the variable aperture and compact Dewar components. This allows the FLIR to do either wide area search scanning or long range identification with the same IDCA. In Electronics/Power Systems, Software Defined Radio (SDR) Components matures manufacturing processes to provide the Joint Tactical Radio System (JTRS) with SDR standardized modules that can be used across all variants to reduce production costs. The Phase Shifters Phased Arrays effort focuses on refining, manufacturing process that drive down costs and increase performance for on-the-move line of sight and beyond line of sight communications and missile seeker applications. The Silicon Carbide (SiC) Switches effort matures fabrication processes for compact, power-dense SiC devices for Army systems; the High Energy Density (HED) Capacitor effort matures pulse power component manufacturing processes for advanced protection systems and weapons; and the Very High Power (VHP) Batteries effort matures manufacturing processes for compact energy/storage systems. In Precision Munitions/Armaments, the Low Cost, High G, Micro-Electro-Mechanical Systems (MEMS) Inertial Measurement Unit (IMU) effort, which complements an effort in PE/project 0602303A/214, focuses on achieving improved manufacturing processes to produce an affordable IMU system and deeply integrated guidance and navigation unit for missiles and armaments. MEMS Safe and Arm (S&A) matures MEMS wafer-based manufacturing processes that provide miniature, high-G "inertial mechanical logic" to control the position of explosive charges for weapon systems applications. The Throttling Propulsion Component Manufacturing and Assembly for Missiles enables cost effective manufacturing of throttling components (pintle and throat) that are used to provide enhanced energy management for the Non Line of Sight-Launch Systems (NLOS-LS) solid rocket propulsion; and the Optimization of PAX-41 Formulation and Loading effort develops and matures the loading qualification process of PAX-41 explosives to meet new DoD regulations. The Flexible Display Initiative (FDI) effort in this project, which is fully coordinated with and complements the FDI effort in PE/project 0602705A/H94, provides manufacturing technologies required to enable the production of lightweight and rugged flexible displays that reduce size and weight of computer displays for individual Soldiers and vehicle applications.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
7 - Operational system development	0708045A - End Item Industrial Preparedness Activities	E25	
Aviation Systems - Low Cost Lightweight Structures (LCLWS): In FY07, completed evaluation of tail cone performance, integration onto platform and flight qualification. Affordable Drive Train Housing (ADTH): In FY07, completed gearbox-housing manufacturing, performed system integration, conducted gearbox housing performance evaluation. Embedded Sensor Processes for Aviation Component Structures (ESPACS): In FY09, will produce prototype stabilizer, develop composite manufacturing processes for sensors with flexible substrate and adhesive binding techniques. LCRCFS: In FY09, will optimize the process used to manufacture Survivable Affordable, Repairable Airframe components.	688		4000
Base Structural Armor: In FY07, automated and streamlined subassembly processes and produced solid-state titanium plates; demonstrated ability to integrate dissimilar material structures and optimized assembly to maximize the strength of the combined materials. Developed a ceramic tile encapsulation process. In FY08, evaluate and qualify integrated subassembly processes for Future Combat Systems (FCS) armor structure and hybrid mine floor. In FY09, will demonstrate process improvements for the fabrication of full-up upper and lower hull for select protective armor structures in a production environment.	14778	14712	14092
Overlay Armor: In FY07, designed and developed manufacturing technology for hybrid 3-D weave composites; benchmarked and developed low cost manufacturing of high performance metal encapsulated armor; developed low cost manufacturing of ultra-high performance Aluminum metal matrix composite armor; developed manufacturing technique for 2nd Generation Underbelly mine kit. In FY08, continue addressing advanced armor solution affordability and initiate the development of manufacturing technologies for producing novel armor materials critical to 3rd Generation Ballistic and Underbelly armor; deliver a multi-materials kit and supporting processes to include prepreg, particulate metal-matrix composites, nano-bonds, and backing that enable affordable production of armor solutions. In FY09, will integrate stiffening materials and demonstrate producible, affordable armor manufacturing processes that include hybridized fibrous metal matrix composites and 3-D composites backing. Will develop low cost grinding methods for transparent armors.	6404	19271	14000
Low Cost Manufacturing of Materials for Improved Warfighter Protection: In FY07, enabled net shape pre-forms to reduce touch labor by 40 percent, reduced scrap waste of ballistic fibers and enabled simultaneous processing of ballistic, structural, and multifunction materials for improved helmet performance. In FY08, begin a prototype fabrication process for next generation helmet shell development and manufacturing. In FY09, will combine hydrostatic, multiple tow deposition, and multifunctional material technologies and start full-scale implementation of these technologies into a variety of manufacturing lines. Will begin manufacturing process optimization for protective materials used on combat, combat support and aviation platforms.	1773	1320	3796
Sensors - Command: In FY09, will develop production line and Indium-Tin-Oxide process for 8-in substrates. IPSFPA: In FY09, will develop high volume, high yield process and transition read out integration circuit for design/optimization.			4814
Third Gen Infrared Dewar/ Cooler Aperature: In FY07, initiated manufacturing process improvement of Variable Aperature components to optimize sensor performance for either wide area search scanning or long range identification; began precision assembly, motor pre-tension and production process of motor supply base for high reliability motors. In FY08, develop Variable Aperature coating deposition processes, fabricate precision tooling, and test smaller motors to verify improved manufacturability of the Variable Aperature Mechanism while maintaining performance and improving reliability and survivability in the dewar vacuum environment. In FY09, will integrate improved manufacturing components and processes for variable aperture and compact cold stage components to validate tooling documentation and perform manufacturing demonstration.	2365	2935	3500
Software Defined Radio (SDR) Components: In FY07, fabricated and matured manufacturing sub-process for common core transceiver. In FY08, demonstrate efficient manufacturability of the Silicon Germanium RF Integrated Circuit providing a 60 percent size, 75 percent weight, and 40 percent power reduction. In FY09, will begin system integration of improved manufacturing technologies and processes for RF chipset, power amplifiers and wideband tunable filter for low rate production.	8866	7500	6000

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
7 - Operational system development	0708045A - End Item Industrial Preparedness Activities	E25		
Phase Shifters for Phased Arrays (PSPA): In FY07, improved processes to reduce packaging and assembly cost, eliminated electrical malfunctions, for the phase shifter design of the Warfighter Information Network-Tactical (WIN-T). In FY08, optimize manufacturing processes for components of the NLOS-Mortar and Aviation Common Modular Missile systems.	3874	2315		
Silicon Carbide Switches: In FY07, improved processes to reduce switch and diode costs from \$1.20/Ampere (Amp) to \$0.45/Amp for switches and from \$5/Amp to \$0.60/Amp for diodes. In FY08, improved processes to reduce thickness of SiC material and improve doping uniformity. In FY09, will improved manufacturing techniques to produce 4" substrates and reduce the manufacturing cost of low voltage diodes and switches.	6076	6480		4270
High Energy Density (HED) Capacitor: In FY07, increased operating voltage on dielectric film with scale-up units leading to demonstrated capacitor for high energy FCS applications. In FY08, increase operating voltage on file and increase shot life from <200 to 1,000.	3645	800		
Very High Power (VHP) Batteries: In FY07, designed and implemented improved cell processing; conducted cell trials; assembled and evaluated performance of battery modules. In FY08, improve battery pack manufacturing time from 950 hours to 350 hours and reduce cost from \$115 to \$58 per pack. In FY09, will develop and demonstrate efficient manufacturing process that increases cell performance from 1 kilowatt to 3 kilowatts while reducing cell capacity loss from 40 percent to 20 percent.	4532	4200		3800
The Low Cost High G MEMS IMU: In FY07, completed transition of the Gyro 4" line to the 6" line and initiated design verification tests and production acceptance tests for delivery of 36 IMU units and demonstrated integrated design and automation enhancements of final prototype IMUs.	2954			
Micro Electro-Mechanical Systems (MEMS) S&A: In FY07, evaluated fabrication, loading, and automated assembly technologies safety and reliability, and conducted qualification of the MEMS-based munitions fabrication procedures.	2759			
Precision Munitions/Armaments - Throttling Propulsion Component Manufacturing and Assembly for Missiles: In FY07, developed manufacturing processes to reduced production lead time by six weeks, and reduced component weight; validated thin coating process. In FY08, begin the development of manufacturing technologies and processes for the efficient production of missile qualification components. Optimization of PAX 41: In FY07, established a Six Sigma loading process for the manufacture of grenade bodies and optimized processing parameters for both energetic and munitions components. In FY08, improve processes to reduce manufacturing production costs. LCZSMD: In FY09, will develop extensive flow model and improve Zinc Sulfide Chemical Vapor Deposition processes. LIMT: In FY09, will develop metal-to-ceramic brazing process and manufacturing methodology for Artillery Laser ignition system (LIS) components. Programming, Administration and Execution System (PAX)-3: In FY09, will evaluate prototype process and manufacturing of PAX- 3 explosive suitable for dual purpose munitions.	1729	230		4812
Lightweight Laser Designator: In FY09, will begin manufacturing optimization of lightweight laser components for use in small air and ground vehicles.				1000
Flexible Displays: In FY07, began qualifying the GEN II manufacturing line for fabricating reflective and emissive displays; integrated and fabricated flexible displays up to 7.5" diagonals from the 15" diagonal line. In FY08, integrate reflective laminates and manufacture pilot line processes into GEN II production line. In FY09, will demonstrate pilot production lines to manufacture GEN II reflective and emissive 7.5" displays.	4926	4950		5000
Small Business Innovative Research/Small Business Technology Transfer Programs		1758		
Total	65369	66471		69084

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0708045A - End Item Industrial Preparedness Activities

PROJECT

E25

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

C. Acquisition Strategy Not applicable for this item.