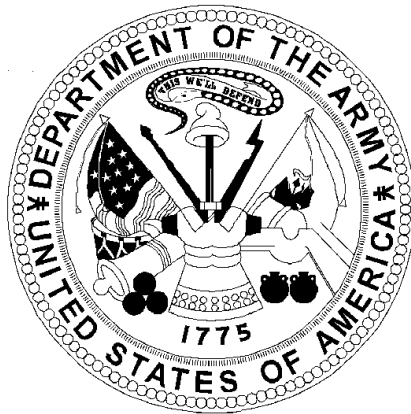


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Supporting Data for the FY 2002 Amended President's Budget Submitted  
to Congress – July 2001

**DESCRIPTIVE SUMMARIES OF THE**



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

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

**VOLUME II**

**UNCLASSIFIED**

**UNCLASSIFIED**

**DESCRIPTIVE SUMMARIES FOR PROGRAM ELEMENTS  
OF THE  
RESEARCH, DEVELOPMENT, TEST AND  
EVALUATION, ARMY  
FY 2002  
JULY 2001**

**VOLUME II  
Budget Activities 4 and 5**

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

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## **Unit Set Fielding**

### **Notification**

The Army is committed to displaying future budget requests in Unit Set Fielding format. We will move toward this type of display beginning with our FY03 budget request.

The display of Unit Set Fielding will define a capability vice a piece of equipment.

### **Unit Set Fielding Definition**

Unit Set Fielding (USF) is the process that modernizes and transforms the Army **by unit sets** primarily at brigade and division levels. The USF schedule synchronizes the fielding of new and upgraded systems, along with supporting enablers, to units in specified windows of generally 6 months per brigade. The intent of this process is to field systems and enablers in sets to provide increased unit operational capability that supports the Army Vision and priorities established by the Army. This approach shifts the focus away from development and fielding of individual systems and to integrated combat capabilities. In order to effectively accomplish USF, the scope of synchronization extends to encompass requirements for manning units, training those units, sustaining those units, and includes installation requirements in support of unit requirements. USF is fully integrated into the Army Transformation Campaign Plan and is clearly the most effective means to synchronize the development and fielding of interim brigades and the objective force of the future.

The Army will work with Congress as we develop Unit Set Fielding displays to assure all required information is included.

### **FY 2000 Footnote**

FY 2000 dollars for the R-1 and R-2 do not match due to a disconnect in the databases.

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**FY 2002/2003 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 Army 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) and R-3 (Army RDT&E Cost Analysis) Exhibits, which provide narrative information on all RDT&E program elements and projects for the FY 2000, 2001, 2002 and 2003 time period.

**2. Relationship of the FY 2002/2003 Budget Submission to the FY 2001 Budget Approved 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.

<b><u>OLD PE/PROJECT</u></b>	<b><u>NEW PROJECT TITLE</u></b>	<b><u>NEW PE/PROJECT</u></b>
0208010A/107	Joint Network Management System	0604783A/363
0305204A/114	Advanced Payload Development & Support	0305204A/11A
0601104A/H50 and H54	Power & Energy Collaborative Tech Alliances (CTAs)	0601104/J09
0603005A/440	Future Combat Systems (FCS)	0603005A/53G
0604270A/665	Environmental Restoration Technology	0603728A/03E
0604715A/396	Intelligence Simulation System	0604742A/361
0604715A/396	Warfighter Simulation	0604742A/362
0604739A/702	Integrated Broadcast Service (JMIP/DISTP)	0603850A/472
0604766A/909	Tactical Surveillance Systems (TIARA)	0603766A/907
0604818A/C34	Centralized Technical Support Facility	0604818A/C29
0605712A/987	Operational Testing Instrumentation Development	0605602A/62B
0605712A/987	Modeling and Simulation Instrumentation	0605602A/62C
0605898A/M65	SMDC – Reimb Manpower	0605898A/R02
Transfer from OSD	Alliance Executive Development and Integration	0604738A/J11

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**B. FY 2002/2003 Developmental Transitions.**

<b><u>FROM</u></b> <b><u>PE/PROJECT</u></b>	<b><u>PROJECT TITLE</u></b>	<b><u>TO</u></b> <b><u>PE/PROJECT</u></b>
0603774A/131	DTSP Development (TIARA)	0604270A/L21
0604710A/L69	Apache 2 <sup>nd</sup> Generation FLIR	0203774A/508

**C. Establishment of New FY 2002 /2003 Program Elements/Projects.** There are no major system new starts. Minor new initiatives for FY 2002, in addition to Congressionally directed initiatives for FY 2001, are shown below with asterisks. The remaining programs listed are outyear initiatives or restructures beyond FY 2001 or were previously funded from other Defense appropriations.

<b><u>TITLE</u></b>	<b><u>PE/PROJECT</u></b>
Apache Advanced Rotor and Drive System	0203744A/50A*
TOW Bunker Buster	0203802A/33A
Counter Terrorism Research	0601102A/T51*
Display Performance & Environmental Evaluation	0601102A/T55*
Science-based Regulatory Compliance Study	0601104A/H7A*
Advanced Materials Processing	0602105A/H7B*
Amorphous Metal Kinetic Energy Penetrator	0602105A/H7C*
Multiple Intelligence Remoted Sensor System	0602270A/91F*
Miniature Detection Devices & Analysis Methods	0602307A/04G*
Zeus Laser Ordnance Neutralization	0602307A/04H*
Voice Interactive Device	0602601A/HH8*
Hybrid Electric HMMWV	0602601A/T26*
Weapons & Munitions Tech Program Initiative	0602624A/H1A*
Environmental Cleanup at Porta Bella	0602720A/F31*
Environmental Quality Technology	0602720A/F35*
Army Heavy Metals Office	0602720A/F36*
Proton Exchange Membrane Fuel Cell	0602720A/F37*
DoD Fuel Cell Test and Evaluation Center	0602784A/T52*
Thermoelectric Power Generation for Military Apps	0602784A/T53*

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C. Continuation of Establishment of New FY 2002 /2003 Program Elements/Projects.

<u>TITLE</u>	<u>PE/PROJECT</u>
Emergency Hypothermia	0602787A/96A*
Real-time Heart Rate Variability Technology	0602787A/96B*
Biosensor Research	0603002A/97A*
Blood Safety	0603002A/97B*
Cancer Center of Excellence	0603002A/97C*
Center for Aging Eye	0603002A/97D*
Center for Prostate Disease Research	0603002A/97E*
Chronic Disease Management	0603002A/97F*
Chronic Fatigue	0603002A/97G*
Clinical Assessment Recording Environment	0603002A/97H*
DREAMS	0603002A/97I*
Echocardiogram	0603002A/97J*
Functional Magnetic Resonance Imaging	0603002A/97K*
Integrative Medicine Distance Learning Program	0603002A/97L*
Ligament Healing	0603002A/97M*
Lung Cancer Detection	0603002A/97N*
Lung Cancer Research	0603002A/97O*
Remote Acoustic Hemostassis	0603002A/97P*
Micro Positron Emission Tomography	0603002A/97Q*
Molecular and Cellular Bioengineering Research	0603002A/97R*
Molecular Genetics and Musculoskeletal Research	0603002A/97S*
Neurotoxin Exposure Treatment	0603002A/97T*
Ocular Fatigue Measurement	0603002A/97U*
Polynitroxilated Hemoglobin	0603002A/97V*
SEATreat Cancer Technology	0603002A/97W*
Synchrotron-based Scanning Research	0603002A/97X*
Virtual Retinal Display Technology	0603002A/97Y*
Tafenoquine Antimalarial Agent	0603002A/97Z*
Artificial Hip Volumetrically Controlled Mfg	0603002A/98A*
Fuel Cell Aux Power Units for Line Haul Trucks	0603005A/53B*
National Automotive Center & University Innovative Rsch	0603005A/53C*
National Automotive Center & Warfighting Battle Labs	0603005A/53D*

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C. Continuation of Establishment of New FY 2002 /2003 Program Elements/Projects.

<u>TITLE</u>	<u>PE/PROJECT</u>
IMPACT Truck Program	0603005A/53E*
NAC Standard Exchange of Product Model Data	0603005AS/53F*
Intelligence Analysis Advanced Tool Set	0603006A/59A*
Big Crow Program Office Support	0603006A/59B*
Army Training Support Center	0603007A/79A*
Multiple Intelligence Remote Sensor System	0603270A/K19*
Army Air and Missile Defense	0603308A/99A*
Starstreak/Stinger Live Fire Test	0603313A/713*
Target Defeating System	0603627A/E78
Trajectory Correctable Munition	0603639A/64A*
Corrosion Measurement and Control	0603728A/03F*
Commercialization of Tech to Lower Defense Costs	0603779A/04F*
WIN-Tactical-Dem/Val	0603782A/355
Integrated Broadcast Service (JMIP/DISTP)	0603850A/472
Medium Extended Air Defense System (MEADS)	0603869A/01B
Ground Common Missile	0604329A/01A
Target Defeating System	0604609A/198
Engineer Vehicle Upgrades	0604649A/G29*
Alliance Executive Development & Integration	0604738A/J11
Joint Network Management System	0604783A/363
Patriot Advanced Capability (PAC) – 3	0604865A/01C
Big Crow Support	0605601A/F38
Transportation Benefit Program	0605801A/M77*
Life Cycle Pilot Process	0605805A/859*
Fuze Technology Integration	0605805A/862*

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**D. FY 2002/2003 programs for which funding was shown in the FY 2001 President's Budget Submit  
(February 2000), but which are no longer funded.**

<b><u>PE/PROJECT</u></b>	<b><u>TITLE</u></b>	<b><u>BRIEF EXPLANATION</u></b>
0203801A/038	Avenger PIP	Reprogrammed for Higher Priorities
0303142A/559	Auto Com Mgt Sy (ACMS)	Program Completed
0303142A/561	Mil Indiv Comm (MIC)	Program Completed
0602308A/C99	Advanced Concepts and Tech II (ACT II)	Program Terminated
0602789A/880	Army AI Tech	Program Terminated
0604641A/E47	TUAV	Program Terminated
0604710A/L74	LRAS3	Program Transitions to Sustainment
0604778A/168	NAVSTAR GPS Equip	Program Completed
0604805A/098	Tac Radio Accessories	Program Completed
0604814A/644	Generic SADARM ED	Program Terminated
0604817A/482	Ground CID (BCIS)	Program Transitions to Production
0708045A/E32	COSSI	Program Terminated

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

0203735A/DC64	0603009A
0203808A	0603017A
0301359A	0603020A
0602104A	0603122A
0602122A	0603322A
0602601A/AC84	0603710A/DC65/ DC67
0602786A/AC60	0603851A
0603005A/DC66	0604328A



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Department of the Army  
FY 2002 RDT&E Program

Exhibit R-1

Summary

02-Jul-2001

Summary Recap of Budget Activities	Thousands of Dollars		
	FY 2000	FY 2001	FY 2002
Basic research	201,393	210,292	222,243
Applied Research	789,665	827,331	689,427
Advanced technology development	718,636	815,276	667,294
Demonstration/validation	507,215	931,778	863,445
Engineering and manufacturing development	1,523,081	1,857,550	2,339,146
Management support	854,470	742,750	756,475
Operational system development	719,527	894,915	1,155,890
Total RDT&E, Army	5,313,987	6,279,892	6,693,920

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 Department of the Army  
 FY 2002 RDT&E Program

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

02-Jul-2001

Line No	Program Element Number	Act	Item	Thousands of Dollars		
				FY 2000	FY 2001	FY 2002
Basic research						
1	0601101A	01	IN-HOUSE LABORATORY INDEPENDENT RESEARCH	13,800	14,326	14,815
2	0601102A	01	DEFENSE RESEARCH SCIENCES	122,998	136,650	138,281
3	0601104A	01	UNIVERSITY AND INDUSTRY RESEARCH CENTERS	64,595	59,316	69,147
Total: Basic research				201,393	210,292	222,243
Applied Research						
4	0602104A	02	TRACTOR ROSE	6,739	0	0
5	0602105A	02	MATERIALS TECHNOLOGY	15,016	27,304	13,794
6	0602120A	02	SENSORS AND ELECTRONIC SURVIVABILITY	22,885	23,008	25,797
7	0602122A	02	TRACTOR HIP	9,173	7,159	7,741
8	0602211A	02	AVIATION TECHNOLOGY	29,096	30,794	49,265
9	0602270A	02	EW TECHNOLOGY	16,545	22,007	17,449
10	0602303A	02	MISSILE TECHNOLOGY	53,216	70,035	40,112
11	0602307A	02	ADVANCED WEAPONS TECHNOLOGY	3,984	6,632	19,043
12	0602308A	02	ADVANCED CONCEPTS AND SIMULATION	32,518	36,144	20,579
13	0602601A	02	COMBAT VEHICLE AND AUTOMOTIVE TECHNOLOGY	57,452	88,274	82,441
14	0602618A	02	BALLISTICS TECHNOLOGY	41,011	53,258	61,502
15	0602622A	02	CHEMICAL, SMOKE AND EQUIPMENT DEFEATING TECHNOLOGY	4,524	3,497	3,561
16	0602623A	02	JOINT SERVICE SMALL ARMS PROGRAM	5,048	5,365	5,611
17	0602624A	02	WEAPONS AND MUNITIONS TECHNOLOGY	35,574	47,817	35,549
18	0602705A	02	ELECTRONICS AND ELECTRONIC DEVICES	35,133	40,891	27,819
19	0602709A	02	NIGHT VISION TECHNOLOGY	22,641	23,746	20,598
20	0602712A	02	COUNTERMINE SYSTEMS	14,992	17,721	16,689
21	0602716A	02	HUMAN FACTORS ENGINEERING TECHNOLOGY	19,350	18,119	16,466
22	0602720A	02	ENVIRONMENTAL QUALITY TECHNOLOGY	76,597	60,434	16,150
23	0602782A	02	COMMAND, CONTROL, COMMUNICATIONS TECHNOLOGY	19,101	23,101	24,342
24	0602783A	02	COMPUTER AND SOFTWARE TECHNOLOGY	5,121	3,950	6,154
25	0602784A	02	MILITARY ENGINEERING TECHNOLOGY	46,697	55,332	42,850

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 Department of the Army  
 FY 2002 RDT&E Program

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

02-Jul-2001

Line No	Program Element Number	Act	Item	Thousands of Dollars		
				FY 2000	FY 2001	FY 2002
26	0602785A	02	MANPOWER/PERSONNEL/TRAINING TECHNOLOGY	11,723	11,759	16,315
27	0602786A	02	LOGISTICS TECHNOLOGY	25,649	27,901	27,061
28	0602787A	02	MEDICAL TECHNOLOGY	169,283	111,696	82,494
29	0602789A	02	ARMY ARTIFICIAL INTELLIGENCE TECHNOLOGY	1,228	1,326	0
30	0602805A	02	DUAL USE SCIENCE AND TECHNOLOGY	9,369	10,061	10,045
Total: Applied Research				789,665	827,331	689,427
Advanced technology development						
31	0603001A	03	WARFIGHTER ADVANCED TECHNOLOGY	36,847	21,768	60,332
32	0603002A	03	MEDICAL ADVANCED TECHNOLOGY	74,105	221,085	17,541
33	0603003A	03	AVIATION ADVANCED TECHNOLOGY	30,626	28,545	44,843
34	0603004A	03	WEAPONS AND MUNITIONS ADVANCED TECHNOLOGY	54,324	55,227	29,684
35	0603005A	03	COMBAT VEHICLE AND AUTOMOTIVE ADVANCED TECHNOLOGY	196,362	166,571	193,858
36	0603006A	03	COMMAND, CONTROL, COMMUNICATIONS ADVANCED TECHNOLOGY	27,340	28,243	31,865
37	0603007A	03	MANPOWER, PERSONNEL AND TRAINING ADVANCED TECHNOLOGY	4,869	7,008	3,120
38	0603009A	03	TRACTOR HIKE	12,125	12,105	10,415
39	0603017A	03	TRACTOR RED	2,834	975	0
40	0603020A	03	TRACTOR ROSE	10,743	10,792	9,293
41	0603105A	03	MILITARY HIV RESEARCH	5,750	5,834	5,937
42	0603122A	03	TRACTOR HIP	2,340	971	0
43	0603238A	03	GLOBAL SURVEILLANCE/AIR DEFENSE/PRECISION STRIKE T	24,819	21,112	32,267
44	0603270A	03	EW TECHNOLOGY	15,620	30,575	13,868
45	0603313A	03	MISSILE AND ROCKET ADVANCED TECHNOLOGY	43,828	51,629	59,518
46	0603322A	03	TRACTOR CAGE	2,580	3,055	3,312
47	0603606A	03	LANDMINE WARFARE AND BARRIER ADVANCED TECHNOLOGY	45,748	20,702	23,062
48	0603607A	03	JOINT SERVICE SMALL ARMS PROGRAM	8,507	4,428	5,828
49	0603654A	03	LINE-OF-SIGHT TECHNOLOGY DEMONSTRATION	37,188	50,262	57,384
50	0603710A	03	NIGHT VISION ADVANCED TECHNOLOGY	38,470	42,746	37,081
51	0603728A	03	ENVIRONMENTAL QUALITY TECHNOLOGY DEMONSTRATIONS	1,286	11,013	4,826
52	0603734A	03	MILITARY ENGINEERING ADVANCED TECHNOLOGY	15,282	5,160	4,747

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Department of the Army  
FY 2002 RDT&E Program

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

02-Jul-2001

Line No	Program Element Number	Act	Item	Thousands of Dollars		
				FY 2000	FY 2001	FY 2002
53	0603772A	03	ADVANCED TACTICAL COMPUTER SCIENCE AND SENSOR TECH	27,043	15,470	18,513
Total: Advanced technology development				718,636	815,276	667,294
Demonstration/validation						
54	0603308A	04	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION (DEM/VAL)	68,653	96,380	19,491
55	0603619A	04	LANDMINE WARFARE AND BARRIER - ADV DEV	11,802	22,594	21,651
56	0603639A	04	TANK AND MEDIUM CALIBER AMMUNITION	48,062	49,635	32,986
57	0603653A	04	ADVANCED TANK ARMAMENT SYSTEM (ATAS)	16,589	265,681	101,461
58	0603713A	04	ARMY DATA DISTRIBUTION SYSTEM	3,748	17	0
59	0603747A	04	SOLDIER SUPPORT AND SURVIVABILITY	11,087	13,449	17,482
60	0603766A	04	TACTICAL SUPPORT DEVELOPMENT - ADV DEV (TIARA)	0	0	16,749
61	0603774A	04	NIGHT VISION SYSTEMS ADVANCED DEVELOPMENT	6,455	14,831	12,756
62	0603779A	04	ENVIRONMENTAL QUALITY TECHNOLOGY DEM/VAL	4,795	13,275	7,536
63	0603782A	04	WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	0	0	15,075
64	0603790A	04	NATO RESEARCH AND DEVELOPMENT	1,820	1,902	8,633
65	0603801A	04	AVIATION - ADV DEV	8,509	9,757	9,105
66	0603802A	04	WEAPONS AND MUNITIONS - ADV DEV	14,958	35,847	31,670
67	0603804A	04	LOGISTICS AND ENGINEER EQUIPMENT - ADV DEV	7,876	6,260	7,456
68	0603805A	04	COMBAT SERVICE SUPPORT CONTROL SYSTEM EVALUATION A	11,281	13,627	8,696
69	0603807A	04	MEDICAL SYSTEMS - ADV DEV	16,276	15,367	15,506
70	0603850A	04	INTEGRATED BROADCAST SERVICE (JMIP/DISTP)	0	0	1,985
71	0603851A	04	TRACTOR CAGE (DEM/VAL)	1,057	970	3,718
72	0603854A	04	ARTILLERY SYSTEMS - DEM/VAL	263,844	352,051	447,949
73	0603856A	04	SCAMP BLOCK II	10,403	20,135	9,895
74	0603869A	04	MEADS CONCEPTS - DEM/VAL	0	0	73,645
Total: Demonstration/validation				507,215	931,778	863,445
Engineering and manufacturing development						
75	0604201A	05	AIRCRAFT AVIONICS	10,272	41,893	57,474

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Department of the Army  
FY 2002 RDT&E Program

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

02-Jul-2001

Line No	Program Element Number	Act	Item	Thousands of Dollars		
				FY 2000	FY 2001	FY 2002
76	0604220A	05	ARMED, DEPLOYABLE OH-58D	0	528	2,345
77	0604223A	05	COMANCHE	458,459	608,410	787,866
78	0604270A	05	EW DEVELOPMENT	79,196	69,413	57,010
79	0604280A	05	JOINT TACTICAL RADIO SYSTEM	36,310	61,648	80,449
80	0604321A	05	ALL SOURCE ANALYSIS SYSTEM	55,530	43,680	42,166
81	0604328A	05	TRACTOR CAGE	2,809	2,890	3,888
82	0604329A	05	COMMON MISSILE	0	4,923	16,731
83	0604601A	05	INFANTRY SUPPORT WEAPONS	0	2	0
84	0604604A	05	MEDIUM TACTICAL VEHICLES	1,947	1,942	1,962
85	0604609A	05	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-ENG DEV	915	3,428	7,920
86	0604611A	05	JAVELIN	1,961	485	492
87	0604619A	05	LANDMINE WARFARE	13,142	15,756	18,938
88	0604622A	05	FAMILY OF HEAVY TACTICAL VEHICLES	1,365	0	0
89	0604633A	05	AIR TRAFFIC CONTROL	4,890	2,008	2,197
90	0604641A	05	TACTICAL UNMANNED GROUND VEHICLE (TUGV)	4,877	297	0
91	0604642A	05	LIGHT TACTICAL WHEELED VEHICLES	6,783	9,802	2,523
92	0604645A	05	ARMORED SYSTEMS MODERNIZATION (ASM)-ENG. DEV.	2,861	2,180	0
93	0604649A	05	ENGINEER MOBILITY EQUIPMENT DEVELOPMENT	46,650	14,862	9,279
94	0604710A	05	NIGHT VISION SYSTEMS - ENG DEV	31,989	33,764	24,201
95	0604713A	05	COMBAT FEEDING, CLOTHING, AND EQUIPMENT	64,457	88,502	91,002
96	0604715A	05	NON-SYSTEM TRAINING DEVICES - ENG DEV	80,152	75,522	26,319
97	0604716A	05	TERRAIN INFORMATION - ENG DEV	5,423	6,027	8,840
98	0604726A	05	INTEGRATED METEOROLOGICAL SUPPORT SYSTEM	2,351	1,754	1,911
99	0604738A	05	JSIMS CORE PROGRAM	0	0	30,985
100	0604739A	05	INTEGRATED BROADCAST SERVICE	4,618	6,005	0
101	0604741A	05	AIR DEFENSE COMMAND, CONTROL AND INTELLIGENCE - EN	12,008	16,310	18,233
102	0604742A	05	CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	0	0	66,164
103	0604746A	05	AUTOMATIC TEST EQUIPMENT DEVELOPMENT	15,924	12,837	11,582
104	0604760A	05	DISTRIBUTIVE INTERACTIVE SIMULATIONS (DIS) - ENGIN	8,173	20,501	26,058
105	0604766A	05	TACTICAL EXPLOITATION SYSTEM/DCGS (TIARA)	73,442	57,884	68,205

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Department of the Army  
FY 2002 RDT&E Program

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

02-Jul-2001

Line No	Program Element Number	Act	Item	Thousands of Dollars		
				FY 2000	FY 2001	FY 2002
106	0604768A	05	BRILLIANT ANTI-ARMOR SUBMUNITION (BAT)	139,130	97,203	123,899
107	0604770A	05	JOINT SURVEILLANCE/TARGET ATTACK RADAR SYSTEM	26,030	28,632	8,093
108	0604778A	05	POSITIONING SYSTEMS DEVELOPMENT (SPACE)	1,663	2,398	0
109	0604780A	05	COMBINED ARMS TACTICAL TRAINER (CATT)	38,563	18,328	13,645
110	0604783A	05	JOINT NETWORK MANAGEMENT SYSTEM	0	0	26,130
111	0604801A	05	AVIATION - ENG DEV	14,111	11,993	2,263
112	0604802A	05	WEAPONS AND MUNITIONS - ENG DEV	57,458	32,703	7,046
113	0604804A	05	LOGISTICS AND ENGINEER EQUIPMENT - ENG DEV	22,506	24,333	30,673
114	0604805A	05	COMMAND, CONTROL, COMMUNICATIONS SYSTEMS - ENG DEV	28,503	61,249	122,644
115	0604807A	05	MEDICAL MATERIEL/MEDICAL BIOLOGICAL DEFENSE EQUIPM	9,598	6,261	8,228
116	0604808A	05	LANDMINE WARFARE/BARRIER - ENG DEV	24,458	93,717	89,153
117	0604814A	05	SENSE AND DESTROY ARMAMENT MISSILE - ENG DEV	24,001	31,513	67,258
118	0604817A	05	COMBAT IDENTIFICATION	17,705	5,313	3,014
119	0604818A	05	ARMY TACTICAL COMMAND & CONTROL HARDWARE & SOFTWARE	43,387	39,059	50,887
120	0604819A	05	LOSAT	0	26,555	21,596
121	0604820A	05	RADAR DEVELOPMENT	5,060	13,306	5,162
122	0604823A	05	FIREFINDER	39,641	46,928	26,956
123	0604854A	05	ARTILLERY SYSTEMS - EMD	4,763	19,920	62,481
124	0604865A	05	PATRIOT PAC-3 THEATER MISSILE DEFENSE ACQ - EMD	0	0	107,100
125	0605013A	05	INFORMATION TECHNOLOGY DEVELOPMENT	0	94,886	98,178
Total: Engineering and manufacturing development				1,523,081	1,857,550	2,339,146
Management support						
126	0604256A	06	THREAT SIMULATOR DEVELOPMENT	19,170	20,808	16,011
127	0604258A	06	TARGET SYSTEMS DEVELOPMENT	12,904	15,252	25,212
128	0604759A	06	MAJOR T&E INVESTMENT	37,953	43,616	49,897
129	0605103A	06	RAND ARROYO CENTER	16,990	19,689	19,972
130	0605301A	06	ARMY KWAJALEIN ATOLL	135,217	151,920	150,071
131	0605326A	06	CONCEPTS EXPERIMENTATION	21,285	18,738	33,067
132	0605502A	06	SMALL BUSINESS INNOVATIVE RESEARCH	115,654	0	0

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FY 2002 RDT&E Program

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

02-Jul-2001

Line No	Program Element Number	Act	Item	Thousands of Dollars		
				FY 2000	FY 2001	FY 2002
133	0605601A	06	ARMY TEST RANGES AND FACILITIES	144,153	121,532	114,411
134	0605602A	06	ARMY TECHNICAL TEST INSTRUMENTATION AND TARGETS	32,825	36,915	34,259
135	0605604A	06	SURVIVABILITY/LETHALITY ANALYSIS	37,021	36,905	27,794
136	0605605A	06	DOD HIGH ENERGY LASER TEST FACILITY	29,717	37,177	14,570
137	0605606A	06	AIRCRAFT CERTIFICATION	2,958	3,171	3,582
138	0605702A	06	METEOROLOGICAL SUPPORT TO RDT&E ACTIVITIES	6,727	6,864	6,890
139	0605706A	06	MATERIEL SYSTEMS ANALYSIS	10,198	8,657	8,884
140	0605709A	06	EXPLOITATION OF FOREIGN ITEMS	4,097	3,549	3,525
141	0605712A	06	SUPPORT OF OPERATIONAL TESTING	68,689	68,149	89,047
142	0605716A	06	ARMY EVALUATION CENTER	26,413	26,095	31,365
143	0605801A	06	PROGRAMWIDE ACTIVITIES	64,176	60,734	69,096
144	0605803A	06	TECHNICAL INFORMATION ACTIVITIES	18,755	30,219	33,749
145	0605805A	06	MUNITIONS STANDARDIZATION, EFFECTIVENESS AND SAFET	18,246	16,622	16,072
146	0605856A	06	ENVIRONMENTAL COMPLIANCE	3,986	2,477	0
147	0605857A	06	ARMY ACQUISITION POLLUTION PREVENTION PROGRAM	0	5,368	1,733
148	0605898A	06	MANAGEMENT HEADQUARTERS (RESEARCH AND DEVELOPMENT)	27,026	8,293	7,268
149	0909999A	06	FINANCING FOR CANCELLED ACCOUNT ADJUSTMENTS	310	0	0
Total: Management support				854,470	742,750	756,475
Operational system development						
150	0102419A	07	JOINT LAND ATTACK CRUISE MISSILES DEFENSE (JLENS)	23,242	26,743	30,408
151	0203610A	07	DOMESTIC PREPAREDNESS AGAINST WEAPONS OF MASS DEST	5,791	2,972	0
152	0203726A	07	ADV FIELD ARTILLERY TACTICAL DATA SYSTEM	34,147	36,471	36,969
153	0203735A	07	COMBAT VEHICLE IMPROVEMENT PROGRAMS	84,004	100,575	195,602
154	0203740A	07	MANEUVER CONTROL SYSTEM	40,695	48,454	40,231
155	0203744A	07	AIRCRAFT MODIFICATIONS/PRODUCT IMPROVEMENT PROGRAM	71,761	106,831	143,631
156	0203752A	07	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM	3,626	5,873	13,017
157	0203758A	07	DIGITIZATION	31,414	30,384	29,302
158	0203759A	07	FORCE XXI BATTLE COMMAND, BRIGADE AND BELOW (FBCB2	63,945	64,009	56,872
159	0203761A	07	FORCE XXI WRAP	0	0	23,593

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Exhibit R-1

Appropriation: 2040 A RDT&E, Army

02-Jul-2001

Line No	Program Element Number	Act	Item	Thousands of Dollars		
				FY 2000	FY 2001	FY 2002
160	0203801A	07	MISSILE/AIR DEFENSE PRODUCT IMPROVEMENT PROGRAM	10,804	12,248	8,539
161	0203802A	07	OTHER MISSILE PRODUCT IMPROVEMENT PROGRAMS	12,755	55,900	84,935
162	0203808A	07	TRACTOR CARD	3,634	3,801	6,551
163	0208010A	07	JOINT TACTICAL COMMUNICATIONS PROGRAM (TRI-TAC)	16,345	38,563	21,615
164	0208053A	07	JOINT TACTICAL GROUND SYSTEM	26,856	6,208	5,221
165	0301359A	07	SPECIAL ARMY PROGRAM	22,943	5,178	5,072
166	0303028A	07	SECURITY AND INTELLIGENCE ACTIVITIES	6,451	0	452
167	0303140A	07	INFORMATION SYSTEMS SECURITY PROGRAM	14,344	14,503	8,261
168	0303141A	07	GLOBAL COMBAT SUPPORT SYSTEM	0	73,664	94,177
169	0303142A	07	SATCOM GROUND ENVIRONMENT (SPACE)	33,778	42,926	47,647
170	0303150A	07	WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM	10,525	14,101	13,501
171	0305114A	07	TRAFFIC CONTROL, APPROACH AND LANDING SYSTEM-FY 19	0	775	785
172	0305204A	07	TACTICAL UNMANNED AERIAL VEHICLES	45,087	34,110	38,210
173	0305206A	07	AIRBORNE RECONNAISSANCE ADV DEVELOPMENT	4,725	4,852	6,862
174	0305208A	07	DISTRIBUTED COMMON GROUND SYSTEMS (JMIP)	7,726	7,821	85,242
175	0603778A	07	MLRS PRODUCT IMPROVEMENT PROGRAM	62,252	68,886	111,389
176	0708045A	07	END ITEM INDUSTRIAL PREPAREDNESS ACTIVITIES	82,483	89,067	45,697
177	1001018A	07	NATO JOINT STARS	194	0	2,109
Total: Operational system development				719,527	894,915	1,155,890
Total: RDT&E, Army				5,313,987	6,279,892	6,693,920



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55	0603619A	Landmine Warfare and Barrier Adv Dev	22
56	0603627A	Smoke, Obscurity and Target Defeating Sys AD	35
56	0603639A	Tank and Medium Caliber Ammunition	41
57	0603653A	Advanced Tank Armament System	51
59	0603747A	Soldier Support and Survivability	67
60	0603766A	Tactical Support Development - Adv Dev (TIARA)	87
61	0603774A	Night Vision System Advanced Development	92
62	0603779A	Environmental Quality Technology Dem/Val	101
63	0603782A	WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	112
64	0603790A	NATO RESEARCH AND DEVELOPMENT	118
65	0603801A	Aviation Advanced Development	130
66	0603802A	WEAPONS & MUNITIONS - ADV DEV	153
67	0603804A	Logistics and Engineer Equipment Adv Dev	172
68	0603805A	Combat Svc Spt Control Sys Evaluation & Analysis	192
69	0603807A	Medical Systems Advanced Development	198
70	0603850A	Integrated Broadcast Service (JMIP/DISTP)	217
72	0603854A	ARTILLERY SYSTEMS - DEMVAL	222
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75	0604201A	Aircraft Avionics	250
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85	0604609A	Smoke, Obscurant and Target Defeating Sys ED	346
86	0604611A	JAVELIN	355
87	0604619A	Landmine Warfare	358
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94	0604710A	Night Vision Systems Engineering Development	392
95	0604713A	Combat Feeding, Clothing, and Equipment	409
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105	0604766A	Tactical Exploitation System/DCGS-A (TIARA)	544
106	0604768A	BAT	553
107	0604770A	Joint Surveillance and Target Attack Radar Sys	560
109	0604780A	Combined Arms Tactical Trainer (CATT)	567
110	0604783A	JOINT NETWORK MANAGEMENT SYSTEM	583
111	0604801A	Aviation Engineering Development	589
112	0604802A	Weapons and Munitions Engineering Development	595
113	0604804A	Logistics and Engineer Equipment Engineering Dev	616
114	0604805A	Command, Control and Communications Sys Eng Dev	666
115	0604807A	Med Material/Med Bio Def Equip ED	712
116	0604808A	Landmine Warfare/Barrier Engineering Development	724
117	0604814A	Artillery Munitions - EMD	751
118	0604817A	Combat Identification	761
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1	DOD(C)(CFO), Pentagon, Room 1B728, Washington, DC 20301-1100
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1	USD(A&T), Mailroom, Pentagon, Room 3D139, Washington, DC 20310
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\* HQDA (SFIS-API), Hoffman 1, Room 1012, Alexandria, VA 22331-0302  
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- \* HQDA (DAMH-ZB), Pulaski Bldg, Room 4229, 20 Massachusetts Avenue, Washington, DC 20314
- \* US Army Cost And Economic Analysis Center, ATTN: SFFM-CA-PI, 5611 Columbia Pike, Falls Church, VA 22041-5050
- \* BMDO/RM, Pentagon, Room 1E1037, Washington, DC 20310
- \* HQDA, (JDRS-PBD), Pentagon, Room 1E610, Washington, DC 20310
- \* HQ, PACOM, R&D Requirements (J531), BOX 15, USPACOM Staff, Camp H.M. Smith, HI, 96861
- \* Commander, US Army Intelligence and Security Command, ATTN: IARM-PB, Fort Belvoir, VA 22060-5370
- \* Commander, US Army Nuclear and Chemical Agency, ATTN: MONA-OPS, Bldg 2073, Backlick Road, Springfield, VA 22150
- \* Commander, US Army Medical R&D Command, ATTN: SGRD-RMC, Fort Detrick, Frederick, MD 21701-5012
- \* Commander, US Army Medical R&D Command, ATTN: SGRD-PR, Fort Detrick, Frederick, MD 21701-5012
- \* Commander, US Army Training and Doctrine Command, ATTN: ATCD-E, Fort Monroe, VA 23651-5000

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- \* CDR, Army Intelligence Ctr and FT. Huachuca, ATTN: ATZS-CDI-I, ATZS-CDT, Ft. Huachuca, AZ 85613-7000
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- \* Force Design Directorate, ATTN: ATCD-F, 415 Sherman Ave., Ft. Leavenworth, KS 66027-5000
- \* CDR, USACHCS, ATTN: ATSC-CD, Ft. Monmouth, NJ 07703-5612
- \* CDR, U.S. Army Medical Center & School, ATTN: HSMC-FCM, Ft. Sam Houston, TX 78234
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- \* Commander, US Army Materiel Command, ATTN: AMCRD-AB, 5001 Eisenhower Avenue, Alexandria, VA 22333-0001
- \* Commander, US Army Materiel Command, ATTN: AMCAE-P, 5001 Eisenhower Avenue, Alexandria, VA 22333
- \* Commander, US Army Materiel Command, ATTN: AMCAQ-B-TILO, 5001 Eisenhower Avenue, Alexandria, VA 22333
- \* Commander, US Army Communications-Electronics Command, ATTN: AMSEL-CG, Ft. Monmouth, NJ 07703-5000
- \* Commander, US Army Communication-Electronics Command, ATTN: AMSEL-ACSB-BT, Ft. Monmouth, NJ 07703-5008

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- \* Program Manager, Instrumentation, Targets and Threat Simulators, ATTN: AMCPM-ITTS, 12350 Research Parkway, Orlando, FL 32826
- \* Program Manager, Tank Main Armament Systems, ATTN: AMCPM-TMD PMD, Picatinny Arsenal NJ 07806-5000
- \* Program Executive Officer, Missile Defense, ATTN: SFAE-MD-DP-P, Building 5250, Redstone Arsenal, Alabama 35898-5750
- \* Program Executive Officer, Field Artillery Systems, ATTN: SFAE-FAS, Building 171, Picatinny Arsenal, Picatinny, NJ 07806-5000
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- \* Commander, HQ US Army Missile & Space Intelligence Center, ATTN: AIAMS-YCC, Redstone Arsenal, AL 35898-5000
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- \* Inspector General, ATTN: A&IM/FMD, 400 Army-Navy Drive Arlington, VA 22202-2884
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- \* HQ US Marine Corps, Deputy Chief of Staff for RD&S, Code (MC-RDP-30), Washington, DC 20380
- \* Commandant, US Army War College, ATTN: Library, Carlisle Barracks, PA 17013-5050
- \* Defense Advanced Research Projects Agency, ATTN: Comptroller, 3701 North Fairfax Drive, Arlington, VA 22203-1714
- \* Institute for Defense Analyses, 1801 North Beauregard Street, Alexandria, VA 22311
- \* Headquarters, National Aeronautical and Space Administration, Code ID, ATTN: Deputy DOD Affairs, Washington, DC 20546
- \* Pentagon Library, ATTN: Army Studies, Room 1A518, Washington, DC 20310
- \* Director, Defense Finance and Accounting Service-Indianapolis Center, ATTN: DFAS-I-PA, Indianapolis, IN 46249
- \* Defense Technical Information Center (DTIC), ATTN: Ms. Mawby, Ft. Belvoir Headquarters Complex (FBHC), Suite 0944

**\*Distributed electronically – accessed via Office, Assistant Secretary of the Army (Financial Management and Comptroller)  
Worldwide Web Site (<http://www.ASAFM.army.mil>)**

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**APPENDIX A**

**RDT&E CONGRESSIONAL DESCRIPTIVE SUMMARIES  
MAILING LIST**

**PRINT**

**ADDRESS**

- \* 8725 John J. Kingman Road, , Ft. Belvoir, VA 22060-6220  
Defense Technical Information Center (DTIC), ATTN: OCC, Ft. Belvoir Headquarters Complex (FBHC), Suite 0928,  
8725 John J. Kingman Road, Ft. Belvoir, VA 22060-6220
- \* National Technical Information Service (NTIS), ATTN: Military Publications, 5285 Port Royal Road, Springfield, VA 22161
- 88 Total Print

**\*Distributed electronically – accessed via Office, Assistant Secretary of the Army (Financial Management and Comptroller)  
Worldwide Web Site (<http://www.ASAFM.army.mil>)**

**UNCLASSIFIED**

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603308A - Army Missile Defense Systems Integration**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	68213	96380	19491	0	0	0	0	0	0	0
978 SPACE CONTROL	0	2972	1005	0	0	0	0	0	0	0
989 NAUTILUS/THEL	24794	14862	0	0	0	0	0	0	0	0
990 SPACE AND MISSILE DEFENSE INTEGRATION	28199	58556	4568	0	0	0	0	0	0	0
997 SPACE AND MISSILE DEFENSE BATTLELAB	15220	19990	12231	0	0	0	0	0	0	0
99A ARMY AIR AND MISSILE DEFENSE	0	0	1687	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element funds missile defense systems integration efforts for both the Army Space and Missile Defense Command (SMDC) and the Program Executive Office for Air and Missile Defense (PEO-AMD).

SMDC: HQDA General Order No. 5, 1 March 1998, designated the US Army Space and Missile Defense Command (USASMDC) the specified proponent for space and National Missile Defense (NMD), and the operational integrator for Theater Missile Defense (TMD). In response to this designation, the Missile Defense Battle Integration Center (MDBIC) and other existing USASMDC elements were reorganized and merged to form the Space and Missile Defense Battle Lab (SMDBL). The SMDBL is chartered to develop warfighting concepts, focus military science and technology research, and conduct warfighting experiments. The reorganization also created the Force Development and Integration Center (FDIC), a major support element of USASMDC. This program element funds the FDIC, created to execute the specified proponent role of the USASMDC. The FDIC develops space and NMD solutions to Doctrine, Training, Leader Development, Organization, Materiel, and Soldiers (DTLOMS) and executes their implementation. This program element funds the production of requirements for hardware and software solutions, the interfaces with technology development, and the development of operational and system architectures for space, NMD and TMD. In addition, this program element funds analysis and experimentation integrating the pillars of TMD (active defense, passive defense, attack operations, and battle management/command, control, communications, computers, and intelligence functions) and inputting Army TMD requirements into Joint forums. This program also supports Aviation and Artillery attack operation systems, and passive missile defense materiel solutions.

PEO-AMD: The mission of the United States Army Program Executive Office for Air and Missile Defense (PEO AMD) is to develop, acquire, and field Theater Air and Missile Defense (TAMD) systems. These systems provide the capabilities needed to defend friendly forces and assets against attack by enemy aircraft, cruise missiles, and theater ballistic missiles (TBMs).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
**0603308A - Army Missile Defense Systems Integration**

The Army is developing and procuring individual TAMD weapon systems that must be integrated to form a Family of Systems (FoS). It is the PEO's responsibility to ensure the Army TAMD FoS is developed as an integrated capability. The PEO must integrate Army and Joint requirements in order to satisfy both needs. The PEO must support interoperability systems engineering, simulation, analysis, and evaluation in order to integrate the Family of Systems. Funding will allow the PEO to sufficiently address both Army and Joint interoperability requirements, ensuring an effective Army TAMD FoS.

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	61528	12573	15760	0
Appropriated Value	63553	97273	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-1519	0	0	
c. Omnibus or Other Above Threshold Reductions	-232	0	0	
d. Below Threshold Reprogramming/Supplemental	7200	0	0	
e. Rescissions	-789	-893	0	
Adjustments to Budget Years Since FY2001 PB	0	0	3731	
Current Budget Submit (FY 2002/2003 PB )	68213	96380	19491	0

Change Summary Explanation:

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**4 - DEM/VAL**

PE NUMBER AND TITLE

**0603308A - Army Missile Defense Systems Integration**

FY01 increases due to various Congressional adds to the President's Budget (\$84.7M).

FY02 increases due to re-alignments to meet critical Army priorities.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603308A - Army Missile Defense Systems  
Integration**

PROJECT  
**978**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
978 SPACE CONTROL	0	2972	1005	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Space control supports the Legacy to Objective transition path of the Army Transformation Campaign Plan (TCP) by providing funding that will help meet current Army Requirements Review Committee guidance, DEPSECDEF directives and Army Space Negation and Surveillance ORD requirements. Space Control has gained much importance with the increase in foreign government, consortium, and commercial space-based assets. Potential adversaries will have the capability to capitalize on these assets to identify friendly activities and operations, increase their lethality and intelligence gathering efforts, and thus reduce our survivability, agility, versatility and information superiority. Space Control is a Theater and Corps system designed to provide the following: 1) Advanced Space Surveillance, which will characterize adversary space-based assets, identify their capabilities, and provide information relating to their intentions and how they can influence our operations; 2) Aerospace Control, which will deny and disrupt adversary imaging capabilities at varying ranges and altitudes; and 3) Decision Support System to plan, coordinate, execute and assess space control operations and provide battlespace management for unique space control mission requirements. With the requirements established by the Transformation Campaign Plan, space control is critical to the Objective Force for survivability in that it denies adversary imaging for precision targeting, thus reducing lethality, and limiting intelligence gathering. Space Control also supports the Objective Force characteristics of agility and versatility by denying adversary space-based information as our forces respond to varying shifts in intensity and mission requirements. Failure to fund this effort will prevent theater commanders from achieving information superiority and total situational awareness of the total battlespace picture.

**FY 2001 Planned Program**

- 2972 Continue development of the Kinetic Energy Anti-Satellite kill vehicles.
- Total 2972

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

4 - DEM/VAL

PE NUMBER AND TITLE

0603308A - Army Missile Defense Systems  
Integration

PROJECT

978

## FY 2002 Planned Program

- 1005 Define Space Control Architectural requirements in support of the Objective Force and the Transformation Campaign Plan. Participate in the space control Analysis of Alternatives (AoA) process.

Total 1005

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

**C. Acquisition Strategy:** Not applicable for this item.

**D. Schedule Profile:** Not applicable for this item.



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603308A - Army Missile Defense Systems Integration**

**PROJECT**  
**978**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Various			0	2972		1005		0	0	0	0	0
Subtotal:			0	2972		1005		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603308A - Army Missile Defense Systems Integration**

**PROJECT**  
**978**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
Project Total Cost:			0	2972		1005		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>4 - DEM/VAL</b>			<b>PE NUMBER AND TITLE</b> <b>0603308A - Army Missile Defense Systems</b> <b>Integration</b>						<b>PROJECT</b> <b>990</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
990 SPACE AND MISSILE DEFENSE INTEGRATION	28199	58556	4568	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** HQDA General Order No. 5, 1 March 1998, designated the US Army Space and Missile Defense Command (USASMDC), the specified proponent for space and National Missile Defense (NMD), and the operational integrator for Theater Missile Defense (TMD). In response to this designation, the existing USASMDC elements were reorganized and merged to form the Force Development and Integration Center (FDIC). This project funds the FDIC, a major support element of USASMDC, created to execute the specified proponent role of USASMDC through development of space and NMD solutions to Doctrine, Training, Leader Development, Organization, Materiel, and Soldiers (DTLOMS) and their implementation. This project funds the production of hardware and software solutions, interfaces with technology development, and development of operational and system architectures for space, NMD and TMD requirements. Additionally, this project funds analysis and experimentation integrating the pillars of TMD (active defense, passive defense, attack operations, and battle management/command, control, communications, computers, and intelligence functions) and inputting Army TMD requirements into Joint forums. These products are required to accomplish the integrated TMD mission and exceed the scope of other programs. This program also supports Aviation and Artillery attack operation systems and passive missile defense materiel solutions. This supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 3116 Space and Missile Defense - Planned, developed, and executed concepts and DTLOMS solutions for space and NMD. Represented users of space and NMD in development of operational and training requirements, testing, and evaluation, including SBIRS, M3P/JTAGS, and space control capabilities. Led Army's efforts in Joint Theater Missile Defense (JTMD) architecture development. Expanded space and TMD Master Plans into the 2010 time frame. Sponsored exploration of future space and missile defense warfighting efforts. As the FA 40 personnel proponent, ensured Army Space Operations Officers were thoroughly trained and effectively assigned to meet the needs of Joint and Army commanders.
- 6223 Microelectromechanical System - Defined opportunities for MEMS packaging. Initiated tasks in the development of packaging demonstrations.
- 1915 Aero-acoustics Instrumentation Technology - Test facility development; high frequency sensor development; and composite structure dynamic pressure instrumentation.
- 2872 Missile System Integration - Demonstrated a field portable device for detection; completed design of miniaturized sensor; completed rapid spectral analysis method.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

4 - DEM/VAL

PE NUMBER AND TITLE

0603308A - Army Missile Defense Systems  
Integration

PROJECT

990

## FY 2000 Accomplishments (Continued)

- 14073 Missile Defense Flight Experiment Support - Supported flight test experiment in the FY 01 flight from the Kodiak Launch complex.

Total 28199

## FY 2001 Planned Program

- 3367 Space and Missile Defense - Continue FDIC's efforts to plan, develop, and execute concepts and DTLOMS solutions for space and NMD. Represent users of space and NMD in development of operational and training requirements, testing and evaluation, including SBIRS, M3P/JTAGS, and space control capabilities. Lead Army's efforts in developing and executing Joint Theater Missile Defense (JTMD) architecture. Expand Space and TMD Master Plans beyond the 2010 time frame. Sponsor exploration of future space and missile defense warfighting efforts. As the personnel proponent for space operation officers, ensure Army Space Operations Officers (FA 40) are thoroughly trained and effectively assigned to meet the needs of commanders.
- 5768 Develop full dimensional visualization software.
- 2884 Develop Aero-acoustic instrumentation technology.
- 2884 Continue Family of Systems Simulator development.
- 1923 Develop Army Acoustics Center of Excellence.
- 6729 Develop low cost interceptor technology.
- 3845 Continue advanced radar power technology development.
- 3845 Continue acoustic technology research.
- 1442 Develop supercluster distributed memory technology.
- 1442 Develop scramjet acoustic combustion enhancements.
- 17016 Support Northern Edge range infrastructure, instrumentation, and equipment.
- 3845 Conduct payload development, integration, and research.
- 1923 Conduct Eagle Eyes research for nuclear detection.
- 1643 Small Business Innovative Research/Small Business Technology Transfer

Total 58556

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603308A - Army Missile Defense Systems  
Integration**

PROJECT  
**990**

**FY 2002 Planned Program**

- 4568 Continue FDIC's efforts to plan, develop, and execute concepts and DTLOMS solutions for space and NMD. Represent users of space and NMD in development of operational and training requirements, testing, and evaluation, including SBIRS, M3P/JTAGS, and space control capabilities. Lead Army's efforts in developing and executing Joint Missile Defense (JTMD) architecture. Develop space and MD modernization strategy beyond the 2010 time frame. Sponsor exploration of future space and missile defense warfighting efforts. As the personnel proponent for space operation officers, ensure Army Space Operations Officers (FA 40) are thoroughly trained and effectively assigned to meet the needs of commanders.

Total 4568

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

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

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Continue development/synchronization of space and NMD DTLOMS solutions & TMD integration.	1-4Q	1-4Q	1-4Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603308A - Army Missile Defense Systems Integration**

**PROJECT**  
**990**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . GOVT SUPPORT & SUPPORT CONTRACTS	VARIOUS	VARIOUS	36532	56913		4568		0	0	0	0	0
b . SBIR/STTR			0	1643		0		0	0	0	0	0
Subtotal:			36532	58556		4568		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603308A - Army Missile Defense Systems Integration**

**PROJECT**  
**990**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

<b>Project Total Cost:</b>			36532	58556		4568		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>4 - DEM/VAL</b>				PE NUMBER AND TITLE <b>0603308A - Army Missile Defense Systems Integration</b>					PROJECT <b>997</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
997 SPACE AND MISSILE DEFENSE BATTLELAB	15220	19990	12231	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Project D997 funds the development of warfighting concepts and the conduct of warfighting experiments within the Space and Missile Defense Battlelab (SMDBL). The mission of the SMDBL is to deliver space and missile defense innovations to the Warfighter through advanced concepts and technology integration, prototyping, experimenting, modeling, simulation, and operational analysis. This type of integration, experimentation, and analysis for space and missile defense is not done anywhere else in the Army.

**FY 2000 Accomplishments**

- 7457 Planned, developed, and executed SMDBL experiments in coordination with TRADOC requirements and procedures. Involved directly in the following: Joint Contingency Force Advanced Warfighter Experiment (AWE) - Tactical Weather; Space-Based Forced Warning; Eagle Vision II; and Enroute Mission Planning and Rehearsal System (EMPRS); Total Defender Experiment; No Horizons Experiment; Black & White Integration Phase I; SMDC Experimentation Campaign Plan; 32nd AAMDC Future Operational Capability (FOC); Reengineering Initiative Experiment IV.
- 5038 Planned, developed, and executed SMDBL participation in Army/Joint Exercise and Training events, including Strike Force, Fire Simulation Support Tools, Digital Battle Simulation Tool Follow-On, and Optic Windmill 00. Provided for Tactical Simulation Integration Unit (TSIU) IV & V and TSIU High Level Architecture compliance.
- 1570 Managed model and simulation (M&S) infrastructure in support of experimentation, exercise, and training, and analysis programs. Managed M&S domains, continued M&S investment strategy, incorporated space and missile defense functionality in Battle Command Training Program (BCTP) events, and included space and missile defense in the Joint Warfighting Simulation (JWARS), Warfighter's Simulation (WARSIM) functional description of the battlefield (FDB).
- 1155 Conducted operational analysis support to space and missile defense experiment programs. Conducted analysis support to other SMDC and Army programs, including establishment of capability to conduct analysis of the impacts of space-based sensors in an approved Army simulation. Conducted analysis of the military utility of space-based radar and spectral imagery. Formed federation between Extended Air Defense Simulation (EADSIM) and Fire Support Simulation (FIRESIM), resulting in simultaneous analysis of active defense and attack operations.

Total 15220



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603308A - Army Missile Defense Systems  
Integration**

PROJECT  
**997**

**FY 2001 Planned Program**

- 8131 Conduct Missile Defense Integration, Experiments, and Exercises - 32nd AAMDC FOC; Northern Edge; Roving Sands; TSIU; Tiger; Total Defender experiment. Hardware/Software Integration Center upgrade/enhancements to support Army Transformation Campaign Plan (Interim & Objective Force).
- 7868 Conduct Space Experimentation and Exercises - With space experimentation such as ENTR, Mobile Processing, Exploitation & Dissemination (MOPED), silent runner, black and white integration, spectral images, concept initiation development support and future combat and control experiments to support Army Transformation Campaign Plan.
- 3504 Develop Models, Simulations, and Assessment Tools and conduct operational analysis such as Operational/Imagery/Force Federation/Joint Theater & Missile Defense and Enhancements to Joint Simulations (JSIMs), WARSIM Common Operational Modeling, Planning Simulations System (COMPASS) Improvement. Maintain modeling and simulation infrastructure for experiments, exercises, and analysis programs.
- 487 Small Business Innovative Research/Small Business Technology Transfer

Total 19990

**FY 2002 Planned Program**

- 6116 Conduct Missile Defense Integration, Experiments, and Exercises - 32nd AAMDC FOC to evaluate Command Control Communications Computers, Intelligence Surveillance & Reconnaissance (C4ISR) technology; Total Defender; No Horizons Phase III; Northern Edge; Corp AWE, Roving Sands to support legacy/objective/interim force.
- 3913 Conduct Space Experimentation, & Exercises - Transformation Force Exp; Future Combat Command & Control (FCC2), Enroute Mission Planning and Rehearsal System (EMPRS) broadcast request imagery technologies experiments (BRITE); and embedded national tactical receivers (ENTR) in support of the Army Transformation Campaign Plan (Legacy, Interim & Objective Forces).
- 2202 Develop Model, Simulations, and Assessment tools - Enhancements to current models, Joint Simulations (JSIMS), and Warfighter Simulations (WARSIM). Maintain modeling and simulation infrastructure for experiments, exercises, and operational analysis programs.

Total 12231

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

4 - DEM/VAL

PE NUMBER AND TITLE

0603308A - Army Missile Defense Systems  
Integration

PROJECT

997

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

**C. Acquisition Strategy:** Program is continuous. Contracts/Tasks Orders are in place for obligation. Various performers will conduct planned accomplishments.

**D. Schedule Profile:** Not applicable for this item.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603308A - Army Missile Defense Systems Integration**

**PROJECT**  
**997**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Experiments, Exercises, Enhancements, Maintenance, analysis	CPAF/CPFF	Various, AL & CO	40240	14703		7431		0	0	0	0	0
b . Govt Support and Support Contracts	MIPR	Various, AL & CO	13481	4800		4800		0	0	0	0	0
c . SBIR/STTR			0	487		0		0	0	0	0	0
Subtotal:			53721	19990		12231		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603308A - Army Missile Defense Systems Integration**

**PROJECT**  
**997**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			53721	19990		12231		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603308A - Army Missile Defense Systems  
Integration**

PROJECT  
**99A**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
99A ARMY AIR AND MISSILE DEFENSE	0	0	1687	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Joint Distributed Engineering Plant (JDEP) is a Navy proposed concept expanding their land-based Distributed Plant which assesses integration and interoperability problems (air and missile defense) of the fleet. This program will be used to evaluate interoperability of joint forces, test and evaluate interoperability of new acquisition systems, and engineer hardware and software to correct deficiencies and develop new capabilities. The initial focus of this program is directed toward Integrated Air Defense. The program consists of individual combat systems distributed throughout the US connected with ATM/T1 telecommunication network(s) and distributed interactive simulation (DIS) protocols. The JDEP management structure consists of service execution cells. This funding provides for the Army involvement in the overall JDEP program. This effort supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

No funding received in FY00

**FY 2001 Planned Program**

No funding received in FY01

**FY 2002 Planned Program**

- 987 JDEP Test Event Participation.
  - 400 Communications Support: T1 Lease, ATM KG routers purchase and maintenance, Tactical Digital Information Link (TADIL) emulation and voice communications.
  - 300 Operational Center Support: Provides support during JDEP testing and pre-event simulations.
- Total 1687

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
0603308A - Army Missile Defense Systems  
Integration

PROJECT  
99A

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

**C. Acquisition Strategy:** Not applicable for this item.

**D. Schedule Profile:** Not applicable for this item.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603308A - Army Missile Defense Systems Integration**

**PROJECT**  
**99A**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not applicable

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Gov't Support, contractor support and communications support	MIPR, 1095	Various	0	0		700		0	0	0	0	0
Subtotal:			0	0		700		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603308A - Army Missile Defense Systems Integration**

**PROJECT**  
**99A**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Gov	1095, MIPR	Varioius Army Agencies	0	0		987		0	0	0	0	0
Subtotal:			0	0		987		0		0	0	0

Remarks: JDEP testing will be conducted between various Army agencies through the use of T1 links. Various Army agencies will be involved in different phases of testing.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not applicable

Project Total Cost:			0	0		1687		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

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

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	11884	22594	21651	0	0	0	0	0	0	0
005 LANDMINE ADV DEV	2975	12644	11426	0	0	0	0	0	0	0
606 CNTRMN/BARRIER ADV DEV	8909	9950	10225	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element provides for component development of new mine and counter mine systems by prototyping modern munitions technology, sensors, logic networks, fuzes, power sources, warhead components and modules into complete systems. It provides for system integration of the Intelligent Combat Outpost (Raptor) which will significantly enhance minefield effectiveness through coordinated attack/tactics and elimination of overwatch forces. It also provides for the initiation and/or continuation of component development of the Airborne Stand-off Minefield Detection System (ASTAMIDS), Handheld Stand-off Mine Detection System (HSTAMIDS), and Ground Stand-off Mine Detection System (GSTAMIDS). These Systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

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

<u>B. Program Change Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY 2001 PB)	10934	22803	30773	0
Appropriated Value	11099	22803	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR/STTR	-293	0	0	
c. Omnibus or other above threshold reduction	-46	0	0	
d. Below threshold reprogramming	1243	0	0	
e. Rescissions	-119	-209	0	
Adjustments to Budget Years Since FY 2001 PB	0	0	-9122	
Withholds	0	0	0	
Current Budget Submit (FY 2002/2003 PB )	11884	22594	21651	0

Funding: In FY02 a decrease of \$9122K reflects an Army decision to support a higher priority requirement. FY03: The increase of \$12411K supports Raptor Block II and the Airborne Stand-off Minefield Detection System (ASTAMIDS).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**005**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
005 LANDMINE ADV DEV	2975	12644	11426	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Intelligent Combat Outpost (Raptor) will improve the capability of smart mines/munitions used by the United States Army. It will enhance the effectiveness of current and future mines/munitions by providing real time targeting data, increase situational awareness, and coordinate attack capabilities while eliminating the need for overwatch forces. This System supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 262 Simulation Development.
- 1358 System Specification developed
- 450 Sensor Studies conducted
- 430 Statement of Work developed
- 475 Decision Review package developed

Total 2975

**FY 2001 Planned Program**

- 530 Conduct Solicitation Development and Source Selection Evaluation Board
- 2050 Conduct study of Wide Area Munitions (WAM) to Gateway interface requirements and develop Interface Control Document
- 8438 Initiate Component Advanced Development
- 1250 Continue modeling and simulation development
- 376 Small Business Innovation Research/Small Business Technology Transfer Program.

Total 12644

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**005**

**FY 2002 Planned Program**

- 9256 Continue design/development of Raptor system components: gateway, overwatch sensor, control station, communications.
- 910 Initiate fabrication and assembly of 5 sets of Raptor hardware for System Component Development test.
- 880 Conduct contractor design test and simulation.
- 380 Initiate trainer design.

Total 11426

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PE 0604808, Project D016, Mine Systems Engineering	14834	0	4521	0	0	0	0	0	0	0
SSN: M12100, Intelligent Combat Outpost	0	0	0	0	0	0	0	0	0	0
SSN: M12202, Raptor Training Device	0	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Component Advanced Development contracts will be awarded to one or more contractors to develop the RAPTOR system.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Raptor Decision Review Documentation		2Q		0	0	0	0	0
Complete Eng. Dev. testing			2Q	0	0	0	0	0
Complete Engineering user tests			2Q	0	0	0	0	0
Raptor MS B				0	0	0	0	0
Complete IOT&E				0	0	0	0	0
Raptor MS C				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**005**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Raptor Component Advanced Development	C-CPIF	TBD	0	8438	3Q	8020	2Q	0	0	0	0	Continue
Subtotal:			0	8438		8020		0		0	0	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Eng. support (Raptor)	MIPR	ARDEC, Picatinny Arsenal NJ	2099	1834	1Q	1700	1Q	0	0	0	0	Continue
b . Simulation/modeling	MIPR	CRREL, New Hampshire	200	600	1Q	340	1Q	0	0	0	0	0
c . Other OGAs/contracts	Various	Various	989	816	1Q	560	1Q	0	0	0	0	Continue
Subtotal:			3288	3250		2600		0		0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**005**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test support (RAPTOR)	MIPR	ATEC, Virginia	0	50	1Q	350	1Q	0	0	0	0	Continue
<b>Subtotal:</b>			0	50		350		0		0	0	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	In-house	PM-MCD, Picatinny Arsenal, New Jersey	372	906	1Q	456	1Q	0	0	0	0	Continue
<b>Subtotal:</b>			372	906		456		0		0	0	Continue

<b>Project Total Cost:</b>			3660	12644		11426		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**606**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
606 CNTRMN/BARRIER ADV DEV	8909	9950	10225	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project provides for component development of new countermine systems by prototyping sensors for evaluation of neutralizing, clearing, breaching and detection concepts which will enhance the U.S. capability in countermine warfare. The program includes the Airborne Standoff Minefield Detection System (ASTAMIDS), Handheld Stand-off Mine Detection System (HSTAMIDS), and Ground Stand-off Mine Detection System (GSTAMIDS). These Systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 3610 Finalized development and fabrication of six HSTAMIDS prototypes
  - 1120 Completed HSTAMIDS contractor system test and evaluation
  - 1551 Conducted HSTAMIDS government test and evaluation
  - 378 Prepared documentation for HSTAMIDS MS B
  - 1000 Performed Trade-off Analysis for Quadruple Resonance (QR) Sensor Configurations (GSTAMIDS)
  - 1250 Began design for GSTAMIDS Quadruple Resonance Sensor Configurations.
- Total 8909

**FY 2001 Planned Program**

- 8004 Development of GSTAMIDS Quadruple Resonance Confirmation Sensors
  - 1650 Source selection and award GSTAMIDS Block 1 Systems Integration Contract
  - 296 Small Business Innovation Research/Small Business Technology Transfer Program.
- Total 9950

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**606**

**FY 2002 Planned Program**

- 5025 Contractor Testing and Integration Risk Reduction of GSTAMIDS Quadruple Resonance Sensors
- 4500 Complete GSTAMIDS Block I System Integration.
- 700 Prepare for and conduct GSTAMIDS Block I MS B IPR.

Total 10225

<b><u>B. Other Program Funding Summary</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>
PE 0604808A, Project D415, Mine Neutralization/Detection	9104	32941	37095	0	0	0	0	0	0	0
MA7700, Items <\$5.0M Countermining Eq.	0	1975	156	0	0	0	0	0	0	0
R68101, GSTAMIDS	0	0	13272	0	0	0	0	0	0	0
R68102, GSTAMIDS Block 1	0	0	0	0	0	0	0	0	0	0
R68200, HSTAMIDS	0	0	0	0	0	0	0	0	0	0
G04001, CMCS	0	0	24560	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Airborne Stand-off Minefield Detection System (ASTAMIDS) will competitively select a System Component Development contractor. Will award a sole source System Development and Demonstration (SDD) contract upon completion of System Component Development phase and MDA approval. Sole source production contract with multiple options is anticipated for successful SDD contractor. Ground Stand-off Minefield Detection System (GSTAMIDS) program is a spiral development and acquisition program designed to field vehicle mounted mine detection and neutralization capabilities in successive block upgrades (Blocks 0,1, and 2). The Block I Contract will be competitive and will be awarded in System Component Development Phase. The Block I SDD contract may be competitively solicited with multiple production options. Handheld Stand-off Minefield Detection System (HSTAMIDS), will have two competing contractors at start of System Component Development phase. In FY99 one contractor was selected to continue the extended System Component Development phase through SDD. If successful, SDD contractor will be awarded the production contract with multiple options.



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**606**

<b>D. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
GSTAMIDS Block 0 MS C			4Q	0	0	0	0	0
GSTAMIDS Block I MS B			4Q	0	0	0	0	0
GSTAMIDS Block I MS C				0	0	0	0	0
HSTAMIDS MS B		1Q		0	0	0	0	0
HSTAMIDS MS C				0	0	0	0	0
ASTAMIDS MS B				0	0	0	0	0
ASTAMIDS MS C				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

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

**PROJECT  
606**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . HSTAMIDS	C-CPIF	Various	17207	0		0		0	0	0	0	0
b . HSTAMIDS	C-CPIF	Coleman Research, Washington, DC	2444	0		0		0	0	0	0	0
c . GSTAMIDS	C-CPFF	Various	2177	0		0		0	0	0	0	0
d . GSTAMIDS, Blk I QR; System concept Contract	C-CPFF	TBD	0	975	3Q	2375	3Q	0	0	0	0	0
e . GSTAMIDS	C-CPFF	Quantum Magnetics, San Diego, CA	2000	7267		4055		0	0	0	0	0
f . ASTAMIDS	C-CPIF	TBD	0	0		0		0	0	0	0	0
Subtotal:			23828	8242		6430		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**606**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . GSTAMIDS Blk 0 Eng. Support	MIPR	Various	1427	0		0		0	0	0	0	0
b . GSTAMIDS Blk I Eng. Support	MIPR	Various	0	837	3Q	2060	3Q	0	0	0	0	0
c . HSTAMIDS Eng. Support	MIPR	Various	4316	0		0		0	0	0	0	0
d . HSTAMIDS Eng. Support	MIPR	Various	376	0		0		0	0	0	0	0
e . ASTAMIDS	MIPR	Various	0	0		0		0	0	0	0	0
Subtotal:			6119	837		2060		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**606**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . GSTAMIDS Blk I Test Support	MIPR	ATEC, Virginia	0	100	3Q	800	3Q	0	0	0	0	0
b . GSTAMIDS Blk 0 Test support	MIPR	ATEC, Virginia	1456	0		0		0	0	0	0	0
c . HSTAMIDS Test Support	MIPR	ATEC, Virginia	2982	0		0		0	0	0	0	0
d . ASTAMIDS	MIPR	ATEC, Virginia	0	0		0		0	0	0	0	Continue
Subtotal:			4438	100		800		0		0	0	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prog Mgmt GSTAMIDS	In-house	PM-MCD, Picatinny, NJ	264	314	1Q	435	1Q	0	0	0	0	0
b . Prog Mgmt GSTAMIDS	C-FP	Various	662	457	1-4Q	500	1-4Q	0	0	0	0	0
c . Prog Mgmt HSTAMIDS	In-house	PM-MCD, Picatinny, NJ	745	0		0		0	0	0	0	0
d . Prog Mgmt HSTAMIDS	C-FP	Various	1078	0		0		0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**606**

IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
e. ASTAMIDS	In-house	PM-MCD	0	0		0		0	0	0	0	Continue
Subtotal:			2749	771		935		0		0	0	Continue
<b>Project Total Cost:</b>			37134	9950		10225		0		0	0	Continue

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
**0603627A - Smoke, Obscurity and Target Defeating Sys AD**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	0	0	0	0	0	0	0	0	0
E78 TARGET DEFEATING SYS	0	0	0	0	0	0	0	0	0	0
E79 SMOKE/OBSCURANT SYSTEM	0	0	0	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

U.S. Forces must be able to defeat target acquisition, weapon guidance systems, and surveillance sensors across the electro-optical spectrum. These program elements support the demonstration/validation of high performance obscuration materials and systems to increase the survivability of the combined armed forces and to complement weapons systems. These programs develop systems to provide large area and projected obscuration across the spectrum from visual through infrared and millimeter wavelength radar. The technologies supported by this program enhance obscuration systems as combat multipliers. Systems developed support the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603627A - Smoke, Obscurity and Target Defeating Sys AD**

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603627A - Smoke, Obscurity and Target Defeating  
Sys AD**

PROJECT  
**E78**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
E78 TARGET DEFEATING SYS	0	0	0	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** U.S. Forces must be able to defeat target acquisition, weapon guidance systems, and surveillance sensors across the electro-optical spectrum. These program elements support the demonstration/validation of high performance obscurator materials and systems to increase the survivability of the combined armed forces and to complement weapons systems. These programs develop systems to provide large area and projected obscurator across the spectrum from visual through infrared and millimeter wavelength radar. The technologies supported by this program enhance obscurator systems as combat multipliers. Distant smoke and obscurator developmental efforts will concentrate on the ability to place obscurator on threat forces. Instead of traditional self-defense procedures, this technology will transfer the visibility defeating materials directly to the threat. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

No funds provided

**FY 2001 Planned Program**

No funds provided



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603627A - Smoke, Obscurity and Target Defeating  
Sys AD**

PROJECT  
**E78**

**FY 2002 Planned Program**

No funds provided

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, A, Budget Activity 2, PE 0602622A, Project A552	3573	3497	3561	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Project E78 - Smoke/Obscurant and Target Defeat: The Distant Smoke System (DSS) will begin System Development & Demonstration in FY2003. The effort will be a combined in-house and competitive contract program.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
DSS - Milestone B, Program initiation				0	0	0	0	0
DSS - Initiate RDTE competitive contract planning				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603627A - Smoke, Obscurity and Target Defeating Sys**  
**AD**

**PROJECT**  
**E78**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DSS - Initiate contract planning	In-house	SBCCOM, APG, MD	0	0		0		0	0	0	0	0
Subtotal:			0	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603627A - Smoke, Obscurity and Target Defeating Sys**  
**AD**

**PROJECT**  
**E78**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DSS - Program management	In house	SBCCOM, APG, MD	0	0		0		0	0	0	0	0
Subtotal:			0	0		0		0		0	0	0

<b>Project Total Cost:</b>			0	0		0		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

COST (In Thousands)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
Total Program Element (PE) Cost	47754	49635	32986	0	0	0	0	0	0	0
643 120MM CONVENTIONAL TANK AMMUNITION	28660	29819	32986	0	0	0	0	0	0	0
64A TRAJECTORY CORRECTABLE MUNITION	0	2972	0	0	0	0	0	0	0	0
656 TANK EXTENDED RANGE MUNITION (TERM)	19094	16844	0	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

The Tank and Medium-caliber Ammunition (TMA) program is a comprehensive program to develop, rapidly transition to production, and field advanced tank, medium caliber and other direct fire ammunition for the Legacy, Interim and Objective forces in support of the Army Transformation Campaign Plan (TCP). This program will ensure continued battlefield overmatch lethality of the U.S. maneuver force despite worldwide proliferation of enhanced armored vehicle protection technologies. To do this, TMA will identify promising technology efforts and use competitive developments along with streamlined acquisition procedures.

The current development areas are in kinetic energy ammunition, training ammunition, and smart extended range munitions for Objective, Interim and Legacy weapon platforms. To date, five rounds of tank ammunition (M829A1, M829A2, M830A1, M865 and M831) have completed development under this program and entered production. All ammunition development funds within this program element (PE) are managed to facilitate transitions between phases, avoid administrative delays, and to focus resources on the most promising areas.

The Trajectory Correctable Munition (TCM) is a joint U.S./Swedish program designed to meet or exceed all US requirements for a 155mm precision guided range projectile. It will be compatible with all current and future 155mm artillery systems in the U. S. inventory. The TCM will extend the range of the M198, 155mm Paladin (M109A6), and the Joint Lightweight Howitzer to approximately 37 kilometers. The TCM with the Modular Artillery Charge System (MACS) extends the Crusader range to 50 kilometers. The TCM will allow greater stand-off from threats and faster defeat of potential threats, increasing soldier survivability. The TCM project is not a new start. FY99 funds were received in the USMC PE 63635M and FY 2000 funds were a result of an Army reprogramming action in PE 64802/D695.

The X-ROD program, now known as the Tank Extended Range Munition - Kinetic Energy (TERM-KE), is a 120mm tank ammunition development effort which will use a standard kinetic energy penetrator, a rocket motor (to boost the penetrator just prior to impact), and dual mode semi-active laser/millimeter wave radar fire-and-forget guidance. TERM-KE will provide greater hit probability at extended ranges, both line of sight and beyond line of sight, increasing survivability and lethality, and expanding the Maneuver Task Force Commander's battle space.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	56286	30139	24056	0
Appropriated Value	56937	50139	0	
Adjustments to Appropriated Value			0	
a. Congressional General Reductions			0	
b. SBIR / STTR	-1480		0	
c. Omnibus or Other Above Threshold Reductions	-228		0	
d. Below Threshold Reprogramming	-7052		0	
e. Rescissions	-423	-504	0	
Adjustments to Budget Years Since FY2001 PB		0	8930	
Current Budget Submit (FY 2002/2003 PB )	47754	49635	32986	0

**Change Summary Explanation:**

Funding: FY2000 - Funds reprogrammed (\$7.1M) to higher priority Digitization/IOTE requirements.

Funding: FY2001 - D656 Congressional plus ups for Tank Extended Range Munitions-Kinetic Energy (TERM-KE)(\$17M) and Trajectory Correctible Munitions (TCM) (\$3M).

Funding/Schedule: FY2002 - Increase provides additional funding for XM1002, the completion of M829E3 development and initial funds for TERM development.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**643**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
643 120MM CONVENTIONAL TANK AMMUNITION	28660	29819	32986	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project develops tank ammunition for the Legacy force, direct fire ammunition for the Brigade Combat Team (BCT) and Future Combat System (FCS). Development of the M829E3 cartridge under this project works to maintain the battlefield overmatch and lethality of the Abrams Main Battle Tank. The M829E3 will defeat the new generation of Explosive Reactive Armor (ERA). Additionally, production of the M829E3 is critical in maintaining the Depleted Uranium (DU) industrial base.

The Tank Extended Range Munitions (TERM) will be a smart munition capable of engaging targets at extended ranges and in beyond line of site modes, with a high degree of accuracy and lethality. TERM allows U.S. forces to stay outside the lethal range of all threat based direct fire weapons, expanding the commander's battlespace. TERM supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP). The key TERM technologies will be leveraged by FCS and BCT development efforts to improve their lethality.

This project develops, but does not implement, the necessary changes to platform weapons and fire control systems brought about by ever more capable ammunition. Additionally, this project will leverage ongoing and projected International Cooperative developments such as Future Tank Main Armament (FTMA) and a multitude of other Program Arrangements (PA) and agreements. Contribution of the U.S. National share to these efforts will ensure a share of the output.

**FY 2000 Accomplishments**

- 14202 Selected of cartridge configuration for M829E3
- 5680 Test optimized design for M829E3
- 6878 Conducted producibility improvements for M829E3
- 1000 XM1002 Target Practice-Tracer (TP-T) Cartridge projectile and propellant proof of principle studies, current award Phase I EMD
- 900 Continued risk reduction alternative propellant for M829E3

Total 28660

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

4 - DEM/VAL

PE NUMBER AND TITLE

0603639A - Tank and Medium Caliber Ammunition

PROJECT

643

## FY 2001 Planned Program

- 4800 Finalize M829E3 Cartridge Configuration
- 10578 Procure 1163 M829E3s for Production Qualification Test (PQT) and provide government engineering support
- 4705 Initiate testing of PQT hardware for M829E3
- 4785 Finalize Producibility Improvements for M829E3
- 900 Complete risk reduction alternative propellant for M829E3
- 3198 XM1002 TP-T Cartridge projectile design, propellant and tracer development and producibility completion
- 853 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)

Total 29819

## FY 2002 Planned Program

- 15000 Complete M829E3 Cartridge Development and Milestone II Preparation
- 3000 Live Fire Testing M829E3 Cartridge
- 900 Vehicle Integration M829E3
- 3086 PQT Testing for M829E3
- 1500 Initial Operational Test and Evaluation for M829E3
- 4000 XM1002 TP-T Cartridge Engineering and Manufacturing Development (EMD) Phase 2, EMD contract award, conduct firing table tests; procure propulsion PQT components (640 cartridges @ \$2500/ctg plus government engineering support)
- 3500 System studies/documentation in preparation for Milestone B (TERM)
- 2000 Initial Cartridge/System Investigation (TERM)

Total 32986

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**643**

<b>B. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
E73300-M831/M831A1 120mm Heat Tank Trainer	35208	48033	46200	0	0	0	0	0	0	0
E73400-M865 120mm KE Tank Trainer	80613	100580	97487	0	0	0	0	0	0	0
E78001-M829A2/E3 120mm Tank KE	31387	0	35596	0	0	0	0	0	0	0
E78007-M830A1 120mm Tank MPAT	17241	0	0	0	0	0	0	0	0	0
E08210-M919 25mm KE (Bradley)	30692	31954	6000	0	0	0	0	0	0	0
E24300-CTG, 105mm, HEP-T, w/Fuze f/Tank M393A3	0	0	6036	0	0	0	0	0	0	0

**C. Acquisition Strategy:** M829E3 APFSDS-T, XM1002 TP-T Ctg, and TERM. These projects have used a streamlined acquisition strategy since inception. Keeping costs low is paramount while meeting schedule requirements. Integrated Product Teams (IPTs) are being used. A development system contractor, Alliant Techsystems, was selected to develop the M829E3 using a performance specification. Operational Requirements Documents (ORDs) have been approved for M829E3 APFSDS-T, XM1002 TP-T Ctg, and TERM.

<b>D. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
M829E3				0	0	0	0	0
Optimize propellant configuration	1-2Q			0	0	0	0	0
Optimize Cartridge Integration	1-4Q	1Q		0	0	0	0	0
Test Penetrator vs. Target Suite	1-4Q	1Q		0	0	0	0	0
Design Freeze		1Q		0	0	0	0	0
Build Production Qualification Hardware		1-4Q		0	0	0	0	0
Begin Production Qualification Test (PQT)		3Q		0	0	0	0	0
Low Rate Production Decision			1Q	0	0	0	0	0
Complete PQT			3Q	0	0	0	0	0
Live Fire Test			1-4Q	0	0	0	0	0
Conduct Initial Operational Test and Evaluation (IOT&E)			2-4Q	0	0	0	0	0
Type Classification - Standard				0	0	0	0	0
Initial Operational Capability				0	0	0	0	0



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**643**

<b>D. Schedule Profile (continued)</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
XM1002 TP-T Cartridge				0	0	0	0	0
Projectile Optimization	1-3Q			0	0	0	0	0
Propellant Development	1-4Q	1-2Q		0	0	0	0	0
Contractor projectile producibility/cost reduction		1-3Q		0	0	0	0	0
Cartridge Design Freeze			3Q	0	0	0	0	0
Procure PQT propellant/propulsion components		3-4Q	1-4Q	0	0	0	0	0
Procure other PQT components/LAP			1-4Q	0	0	0	0	0
Test PQT				0	0	0	0	0
Type Classify				0	0	0	0	0
TERM				0	0	0	0	0
Award PDRR Contracts			3Q	0	0	0	0	0
Preliminary Design Review				0	0	0	0	0
Component Testing				0	0	0	0	0
System Integration Design				0	0	0	0	0
System Testing				0	0	0	0	0
Producibility Program				0	0	0	0	0
XM1028 Canister Ctg				0	0	0	0	0
Award System Contract				0	0	0	0	0
System Development and Demonstration				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**643**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Alliant Techsystems (M829E3)	C-CPIF	ATK Hopkins, MN	30800	10471	1Q	10700		0	0	0	0	0
b . ARDEC (M829E3)	MIPR	Picatinny Arsenal, NJ	43247	2289	1Q	2100		0	0	0	0	0
c . Army Research Lab (M829E3)	MIPR	Aberdeen PG, MD	17299	1696	1Q	500		0	0	0	0	0
d . Rheinmettal(M829E3)	SS-FFP	Germany	2100	900	2Q	0		0	0	0	0	0
e . Batelle Northwest Lab (M829E3)	MIPR	Richmond, WA	4110	300	1Q	0		0	0	0	0	0
f . Miscellaneous (M829E3)	MIPR	Multiple	1105	2345	1-2Q	200		0	0	0	0	0
g . TERM (Integration Contract)	Unknown	Unknown	0	0		3700	1Q	0	0	0	0	0
h . TERM (Oversight Contract)	Unknown	Unknown	0	0		0		0	0	0	0	0
i . TERM (System Contract)	Unknown	Unknown	0	0		0		0	0	0	0	0
j . ARDEC (TERM)	MIPR	Picatinny Arsenal, NJ	0	0		200		0	0	0	0	0
k . Army Research Lab (TERM)	MIPR	Aberdeen PG, MD	0	0		100		0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**643**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
l . Batelle Northwest Lab (TERM)	MIPR	Richmond, WA	0	0		0		0	0	0	0	0
m . Miscellaneous (TERM)	MIPR	Multiple	0	0		100		0	0	0	0	0
n . XM1002 TP-T Ctg	FFP	ATK New Brighton, MN	600	2400	1Q	2615		0	0	0	0	0
o . ARDEC (XM1002)	MIPR	Picatinny Arsenal, NJ	370	460	1Q	470		0	0	0	0	0
p . Miscellaneous (XM1002)	MIPR	Multiple	30	390	1-2Q	100		0	0	0	0	0
q . XM1028 Cannister	Unknown	Unknown	0	0		0		0	0	0	0	0
r . ARDEC (XM1028)	MIPR	Picatinny Arsenal, NJ	0	0		0		0	0	0	0	0
s . Army Research Lab (XM1028)	MIPR	Unknown	0	0		0		0	0	0	0	0
t . Miscellaneous (XM1028)	MIPR	Multiple	0	0		0		0	0	0	0	0
Subtotal:			99661	21251		20785		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**643**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . YPG, APG (M829E3)	MIPR	Yuma AZ/APG, MD	10987	4500	1-2Q	8000		0	0	0	0	0
b . Army Research Lab (M829E3)	MIPR	Aberdeen PG, MD	6315	1520	1-3Q	500		0	0	0	0	0
c . Miscellaneous (M829E3)	MIPR	Multiple	11795	278	1-3Q	286		0	0	0	0	0
d . Army Research Lab (TERM)	MIPR	Aberdeen PG, MD	0	0		0		0	0	0	0	0
e . Miscellaneous (TERM)	MIPR	Multiple	0	0		500		0	0	0	0	0
f . Aberdeen Test Center (XM1002)	MIPR	Aberdeen PG, MD	0	0	1-3Q	375		0	0	0	0	0
g . Miscellaneous (XM1002)	MIPR	Multiple	0	100	1-4Q	100		0	0	0	0	0
h . Army Research Lab (XM1028)	MIPR	Aberdeen PG, MD	0	0		0		0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**643**

III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			29097	6398		9761		0		0	0	0

Remarks: Testing included all testing needed to support M829E3, TERM, XM1002 and XM1028 Cartridges.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM-TMAS (M829E3)	MIPR	Picatinny Arsenal, NJ	8784	1500	1-4Q	1200		0	0	0	0	0
b . Miscellaneous (M829E3)	MIPR	Multiple	230	400	1-4Q	400		0	0	0	0	0
c . PM-TMAS (TERM)	MIPR	Picatinny Arsenal, NJ	0	0		500		0	0	0	0	0
d . PM-TMAS (XM1002)	MIPR	Picatinny Arsenal, NJ	0	270	1-4Q	340		0	0	0	0	0
e . PM-TMAS (XM1028)	MIPR	Picatinny Arsenal, NJ	0	0		0		0	0	0	0	0
Subtotal:			9014	2170		2440		0		0	0	0

Remarks: Management Services also includes data line/contract costs to support Contractor Integrated Technical Information Services (CITIS) for M829E3.

Project Total Cost:			137772	29819		32986		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
**0603653A - Advanced Tank Armament System**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	16482	265681	101461	0	0	0	0	0	0	0
B99 TANK & MEDIUM CALIBER ARMAMENTS	1870	8735	2003	0	0	0	0	0	0	0
C03 INTERIM ARMORED VEHICLE (IAV) FAMILY	14612	256946	99458	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

The Advanced Tank Armament System Program Element supports two projects: Project DB99 (Tank and Medium Caliber Armaments) and Project DC03 (Interim Armored Vehicle Development).

These systems supports the Legacy and Objective transition paths of the Transformation Campaign Plan (TCP). Tank and Medium Caliber Armaments is an Acquisition Category (ACAT) Level III project that involves several efforts. First, it looks at promising tank and medium caliber technologies and assesses advantages and disadvantages of each technology, as well as costs and implementation impacts. If successful, the technology can move into further development or into production. Second, DB99 leverages Joint Service/Other Government Agency Programs to save RDT&E and procurement dollars. Finally, this project supports the International Quadripartite Agreement among the U.S., France, Germany and the United Kingdom for cooperative development effort for risk reduction on Future Main Armaments.

An immediate need exists for an Interim Armored Vehicle (IAV) equipped C-130 transportable Brigade Combat Team (BCT), capable of deployment anywhere on the globe in a combat ready configuration. The IAV family is the force and consists of an Infantry Carrier (ICV), Reconnaissance Vehicle (RV), Mobile Gun System (MGS), Mortar Carrier (MC), Commander's Vehicle (CV), Fire Support Vehicle (FSV), Engineer Squad Vehicle (ESV), Medical Evacuation Vehicle (MEV), Anti-Tank Guided Missile Vehicle (ATGM), and NBC Reconnaissance (NBC RV). This system supports the Interim transition path of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603653A - Advanced Tank Armament System**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	1922	118139	177609	0
Appropriated Value	1937	268139	0	
Adjustments to Appropriated Value	0		0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-52		0	
c. Omnibus or Other Above Threshold Reductions	-8		0	
d. Reprogramming	14612		0	
e. Rescissions	-7	-2458	0	
Adjustments to Budget Years Since FY2001 PB	0		-73148	
Current Budget Submit (FY 2002/2003 PB )	16482	265681	104461	0

FY2000 Funding - Reprogramming due to initiation of Army Transformation.  
 FY2001 Funding - Project DC03 Congressional appropriation plus-up for program test requirements.  
 FY2002/2003 Funding - Interim Armored Vehicle (IAV) funding is aligned with the current Army cost Position.  
 Project DB99 - Funding in FY2002 (-\$6.8M) and FY2003 (-\$6.8M) have been realigned to fund higher priority requirements.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603653A - Advanced Tank Armament System**

PROJECT  
**B99**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
B99 TANK & MEDIUM CALIBER ARMAMENTS	1870	8735	2003	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Tank and Medium Caliber Armament System provides assured leap-ahead lethality improvements for Legacy, Interim and Objective Forces as outlined in the Army Transformation Campaign Plan. This program applies maturing fire control system, gun, and ammunition loading system technologies to platform vehicles for system level demonstrations. If successful, these technologies can proceed to further development or production. The program exploits opportunities to reduce RDT&E and procurement costs by leveraging on-going Joint Service Programs and, in addition, evaluates operations and support cost savers. This program also supports the International Quadripartite Agreement among the United States, France, Germany and the United Kingdom in a cooperative effort for risk reduction development on Future Main Armaments.

**FY 2000 Accomplishments**

- 400 Completed Joint System Level Demonstration with the Marine Corps of an Automatic Target Tracker (ATT) for the Abrams Tank.
- 117 Completed Electronic Muzzle Reference Sensor (EMRS) testing to support incorporation of an ECP to eliminate Tritium, a radioactive element, from the Abrams Tank.
- 413 Transferred a reconfigurable Armored Vehicle Simulator, fire control unit and crew station processor to the Future Scout and Cavalry System Program.
- 440 Completed Hardstand and Gun Testing of L55/M256E1 Guns.
- 500 Completed Integration of L55/M256E1 guns into the Abrams Test Vehicle.

Total 1870



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**4 - DEM/VAL**

PE NUMBER AND TITLE

**0603653A - Advanced Tank Armament System**

PROJECT

**B99**

**FY 2001 Planned Program**

- 1240 Complete Investigation of L55/M256E1 Gun for Legacy Abrams Tank  
Interim & Objective Fire Control Improvements:
  - 658 Apply L55/M256E1 Stabilization Work to Shorter Gun Tube (TGAC)
  - 2761 Extended Range Munitions (ERM) Fire Control - Analysis of Alternatives  
Interim & Objective Gun Improvements:
  - 1440 Bore Coatings - Pursue Parallel Coating Approaches
  - 450 Gun Barrel Straightening - Machine and Measurement Equipment Definition
  - 1941 Medium Caliber Baseline Modeling and Simulation
  - 245 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)
- Total 8735

**FY 2002 Planned Program**

- 1315 Interim and Objective Fire Control Improvements  
ERM Fire Control - System Level Simulation Definition  
Interim & Objective Gun Improvements
  - 298 Bore Coatings - Test Tantalum Coated Medium Caliber Barrel
  - 190 Gun Barrel Straightening - Machine, Measurement Equipment and Algorithm Development
  - 200 Medium Caliber Analysis of Alternative
- Total 2003

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603653A - Advanced Tank Armament System**

PROJECT  
**B99**

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

**C. Acquisition Strategy:** The technologies in Tank & Medium Caliber Armaments will be demonstrated then transferred to weapon platform PMs for further technological development and will flow into the next major upgrade or Engineering Change Proposal (ECP). Several contractors and government agencies are used to develop or integrate existing technologies.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
L55/M256E1 gun barrel testing	1-4Q	1Q		0	0	0	0	0
Complete Auto Target Tracker Demonstration	2Q			0	0	0	0	0
Transfer Components to FSCS	2Q			0	0	0	0	0
L55/M256E1 hardware & software test	2-4Q	1Q		0	0	0	0	0
Complete EMRS testing	3Q			0	0	0	0	0
Complete L55/M256E1 tank integration	3-4Q	2Q		0	0	0	0	0
Complete L55/M256E1 Investigation		4Q		0	0	0	0	0
Apply Stabilization Work to Shorter Gun		3-4Q		0	0	0	0	0
ERM Fire Control Analysis of Alternatives		2Q		0	0	0	0	0
Complete ERM Fire Control Analysis of Alternatives		4Q		0	0	0	0	0
Tantalum Coat 45mm Gun Barrel		3Q		0	0	0	0	0
Test LISI Coating of 120mm Gun Tube		2Q		0	0	0	0	0
Define Gun Barrel Straightening Machinery		1-4Q		0	0	0	0	0
Begin Medium Caliber - Modeling & Simulation		1Q		0	0	0	0	0
Complete Medium Caliber - Modeling & Simulation		4Q		0	0	0	0	0
Define ERM Fire Control Simulation			1-4Q	0	0	0	0	0
Test Tantalum Coated Medium Caliber Barrel			3Q	0	0	0	0	0
Medium Caliber Analysis of Alternatives			1-4Q	0	0	0	0	0
Design ERM System Level Components				0	0	0	0	0
Medium Caliber System Definition				0	0	0	0	0
Apply Tantalum Coating to Large Caliber Tube				0	0	0	0	0
Apply Gun Tube Straightening Process to First Tube				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
0603653A - Advanced Tank Armament System

PROJECT  
B99

D. Schedule Profile (continued)

FY 2000 FY 2001 FY 2002 FY 2003 FY 2004 FY 2005 FY 2006 FY 2007

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603653A - Advanced Tank Armament System**

**PROJECT**  
**B99**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . M256E1/FTMA/Bore Coatings	MIPR	Benet Labs, Watervliet, NY Gov	7286	900	1Q	100		0	0	0	0	0
b . L55 Gun Tubes	SS & FP	Rheinmetall, Ratingen, GE	1000	650	1Q	0		0	0	0	0	0
c . Stabilization Work	SS & CPFF	GDLS, Sterling Heights, MI	0	500	1Q	0		0	0	0	0	0
d . M1A2 Integration	SS & CPFF	GDLS, Sterling Heights, MI	4070	0		0		0	0	0	0	0
e . Fire Control Development	CPFF	Raytheon (TI) Systems, Dallas, TX	19526	500	1Q	0		0	0	0	0	0
f . System Simulation	CPFF	Raytheon, Dallas, TX	0	1049	2Q	1096		0	0	0	0	0
g . Fire Control Development	MIPR	ARDEC, Picatinny Arsenal, NJ	1135	560	1Q	100		0	0	0	0	0
h . EMRS	MIPR	ARDEC, Picatinny Arsenal, NJ	657	0		0		0	0	0	0	0
i . ATT	MIPR	Multiple	471	0		0		0	0	0	0	0
j . Medium Caliber Modeling and Simulation	MIPR	ARDEC, Picatinny Arsenal, NJ	0	1941	1Q	100		0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603653A - Advanced Tank Armament System**

**PROJECT**  
**B99**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . Tube Straightening	MIPR	Multiple	0	450	1Q	150		0	0	0	0	0
l . Bore Coatings	CPFF	GDLS, Sterling Heights, MI	0	740	2Q	100		0	0	0	0	0
m . Miscellaneous	MIPR	Multiple	912	345	1-3Q	107		0	0	0	0	0
Subtotal:			35057	7635		1753		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603653A - Advanced Tank Armament System**

**PROJECT**  
**B99**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Testing L55/M256E1	MIPR	Aberdeen Test Center, APG, MD	0	290	1Q	0		0	0	0	0	0
b . Tantalum Testing	MIPR	Bourges, France	0	0		100		0	0	0	0	0
Subtotal:			0	290		100		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management		PM-TMAS	724	810	1-4Q	150		0	0	0	0	0
Subtotal:			724	810		150		0		0	0	0

Project Total Cost:			35781	8735		2003		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>4 - DEM/VAL</b>			<b>PE NUMBER AND TITLE</b> <b>0603653A - Advanced Tank Armament System</b>					<b>PROJECT</b> <b>C03</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C03 INTERIM ARMORED VEHICLE (IAV) FAMILY	14612	256946	99458	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This Project (DC03) supports the development of the Family of Interim Armored Vehicles (IAV). An immediate need exists for a rapidly deployable force to improve the deployability and operational effectiveness of rapid response/early entry forces. The IAV equipped C-130 transportable Brigade Combat Team (BCT) will be capable of deployment to anywhere on the globe in a combat ready configuration. A dynamic asymmetric threat and operational environment demands full spectrum, strategically responsive, agile and dominant land forces. Immediate response by a lethal, versatile, tactically agile joint force capable of operational maneuver once in the Area of Operations is essential to fulfilling the Warfighting needs of the U. S. Army. The IAV-equipped BCT is this force. The IAV family includes the following planned systems: Infantry Carrier (ICV), Reconnaissance Vehicle (RV), Mobile Gun System (MGS), Mortar Carrier (MC), Commander's Vehicle (CV), Fire Support Vehicle (FSV), Engineer Squad Vehicle (ESV), Medical Evacuation Vehicle (MEV), Anti-Tank Guided Missile Vehicle (ATGM), and NBC Reconnaissance (NBC RV). The use of a common platform/common chassis design reduces requirements for repair parts and logistics support in the area of operations. RDTE funding will be used to integrate the mission equipment packages that make each platform unique and effective. This system supports the Interim transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 1281 Transformation concept proved out at Fort Lewis.
- 2015 ATEC Testing of Contract Bid Samples.
- 2338 Source Selection Evaluation Board (SSEB).
- 8378 RFP developed, milestone documentation developed, PMO support to SSEB, prepared for MS I and MS II, and program management.
- 600 Begin design refinement of Interim Armored Vehicles and prototype manufacture.

Total 14612

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

4 - DEM/VAL

PE NUMBER AND TITLE

0603653A - Advanced Tank Armament System

PROJECT

C03

## FY 2001 Planned Program

- 162963 Design refinement of Interim Armored Vehicles.
- 28588 Partially Fund Systems Testing: Live Fire Test & Evaluation (LFT&E) and Initial Operational Testing and Evaluation (IOT&E).
- 4789 Government Systems Engineering and Program Management.
- 32592 Produce 2 RDT&E test articles for live-fire test and 7 Mobile Gun System (MGS) production-like prototypes.
- 13894 TOW Improved Munitions.
- 1260 GFE for test vehicles.
- 12860 Training devices.

Total 256946

## FY 2002 Planned Program

- 29990 Continues vehicle design refinement and support to government testing.
- 46940 Partially fund Live Fire Test & Evaluation (LFT&E) and Initial Operational Testing and Evaluation (IOT&E).
- 9832 Government Systems Engineering and Program Management.
- 12276 Produce 3 Mobile Gun Systems (MGS)
- 420 GFE for MGS vehicles

Total 99458



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603653A - Advanced Tank Armament System**

PROJECT  
**C03**

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PA, WTCV, G85100 Interim Armored Vehicle Family	22000	928427	662595	0	0	0	0	0	0	0
PA, OPA, W61900 IAV APPLIQUE*	0	0	15059	0	0	0	0	0	0	0

\*Funding summary represents a portion of the overall funding in W61900, Other Procurement, Army. (FBCB2)

**C. Acquisition Strategy:** In Oct 99, the Army leadership announced a vision of the future. This vision included a Brigade structure and an organization crucial to the Army's strategic responsiveness goals. The PM is taking action to achieve this vision for the Army via accelerated procurement of the family of Interim Armored Vehicles. An RFP was developed by the end of 2nd Quarter FY00 and released in Apr 00. Contractors provided bid sample hardware for evaluation during the source selection process. On 16 Nov 00, after a successful MS II DAB approval, a requirements contract was awarded to GM GDLS Defense Group, L.L.C. with delivery orders issued for integration efforts and initial production vehicles.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Release of Draft Solicitation	1Q			0	0	0	0	0
Final Receipt of White Paper Comments	2Q			0	0	0	0	0
Release of Formal Request for Proposals	3Q			0	0	0	0	0
Receipt of Proposals	3Q			0	0	0	0	0
Milestone II		1Q		0	0	0	0	0
Contract Award		1Q		0	0	0	0	0
Begin Testing of Vehicles*			4Q	0	0	0	0	0
First Unit Equipped (Battalion -)*			4Q	0	0	0	0	0
Planned Initial Operational Capability (IOC)*				0	0	0	0	0
Planned Milestone III*				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603653A - Advanced Tank Armament System**

PROJECT  
**C03**

\*Reflects schedule briefed at the Milestone II in Nov 00.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603653A - Advanced Tank Armament System**

**PROJECT**  
**C03**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IAV Development	Competitive-Cost Plus	GM GDLS DG L.L.C	600	162963	1Q	29990	1Q	0	0	0	0	0
b . GFE	Requisition	Various	0	1260		420	1Q	0	0	0	0	0
c . Prototype Development (10)	Competitive-Cost Plus	GM GDLS DG L.L.C	0	28643	3Q	12276	1Q	0	0	0	0	0
d . Training Devices	MIPR	STRICOM, Orlando, FL	0	12860	3Q	0		0	0	0	0	0
e . TOW Missile Modification Program	Reprogram	PM-CCAWS	0	13894		0		0	0	0	0	0
Subtotal:			600	219620		42686		0		0	0	0

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

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603653A - Advanced Tank Armament System**

**PROJECT**  
**C03**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Other Gov't Agencies	MIPR	TACOM, Warren, MI Various	3746	1789		5793		0	0	0	0	0
b . Source Selection Board			2338	0		0		0	0	0	0	0
Subtotal:			6084	1789		5793		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Testing	MIPR	ATEC, APG, MD/Various	2015	28588	4Q	46940	2Q	0	0	0	0	0
b . Fort Lewis Concept Prove Out	MIPR	BCT Materiel Dev Cell, Ft Lewis, WA	1281	0		0		0	0	0	0	0
c . Procure Test Vehicles	Competitive/ CPAF	GM GDLS DG L.L.C.	0	3949	1Q	0		0	0	0	0	0
Subtotal:			3296	32537		46940		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603653A - Advanced Tank Armament System**

**PROJECT**  
**C03**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PMO	NA	TACOM, Warren, MI	2933	3000	1Q	4039	1Q	0	0	0	0	0
b . Consultant Contract PM Support	Competitive/ Various	ICI, Warren, MI	1699	0		0		0	0	0	0	0
Subtotal:			4632	3000		4039		0		0	0	0

Project Total Cost:												
			14612	256946		99458		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
0603747A - Soldier Support and Survivability

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	11016	13449	17482	0	0	0	0	0	0	0
610 FOOD ADV DEVELOPMENT	2349	3349	3738	0	0	0	0	0	0	0
669 CLOTHING AND EQUIPMENT	3252	3459	4830	0	0	0	0	0	0	0
C09 SOLDIER SUPPORT EQUIPMENT - AD	5415	6641	8914	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element provides advanced development for unit/organizational equipment, improved individual clothing and equipment, airdrop equipment, rigid wall and fabric shelters, food and combat feeding equipment which will enhance soldier battlefield effectiveness, survivability, and sustainment in accordance with the Army Transformation Campaign Plan (TCP) objectives. Program element supports advanced development of a new generation of field service support items, shelters, tents, hardwall shelters, kitchens, space heaters, and hygiene systems to enhance the quality of life of field soldiers and the ability to project forces to Spartan environments. Program Element (PE) also supports advanced development of individual clothing and equipment items to lighten the soldier's load and incorporate protection against chemical and biological agents, thermal nuclear flash, ballistic threats, visual and electronic detection and environmental hazards. Also included in this program element is advanced development of food, packaging, and combat feeding equipment systems to reduce food service logistics for all four services, lighten the warfighter's load, increase fuel efficiency, and to improve or replace existing systems. PE also supports the development of air delivery equipment (personal and cargo) to improve Army force projection capabilities, increase warfighter safety, and support the Army TCP objectives. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
0603747A - Soldier Support and Survivability

<u>B. Program Change Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	12719	13574	17415	0
Appropriated Value	12804	13574	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-303	0	0	
c. Omnibus or Other Above Threshold Reductions	-46	0	0	
d. Below Threshold Reprogramming	-1400	0	0	
e. Rescissions	-39	-125	0	
Adjustments to Budget Years Since FY2001 PB	0	0	67	
Current Budget Submit (FY 2002/2003 PB )	11016	13449	17482	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603747A - Soldier Support and Survivability**

PROJECT  
**610**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
610 FOOD ADV DEVELOPMENT	2349	3349	3738	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The project funds the development of Joint Service Food/Combat Feeding Equipment to improve individual combat effectiveness and reduce logistics burden and Operation & Support (O&S) costs of subsistence support for service personnel. Project supports legacy through objective forces in accordance with the Transformation Campaign Plan objectives. Enhance rations by increasing quality, acceptability and variety while reducing weight, cube and cost. Develop multi-fuel, rapidly deployable field food service equipment to support combat, humanitarian missions and operations-other-than-war. Improve equipment to enhance safety in food service operations, utilize battlefield fuel and decrease fuel and water requirements. Program is reviewed and validated twice annually by the Department of Defense (DoD) Food and Nutrition Research and Engineering Board as part of the Joint Service Food Program. Additionally, the project will conduct demonstration/validation of improved subsistence and subsistence support items to enhance soldier effectiveness and quality of life in all four Services as part of an integrated DoD Food Research, Development, Test, Evaluation and Engineering (RDTE&E) program.

**FY 2000 Accomplishments**

- 100 Developed tray ration heater accessory, MKT-I lighting upgrade and heat and water resistant gloves for tray ration heating. Conducted a market investigation on prefab refrigeration panels as part of the product improvements program to improve safety and increase efficiency of fielded food service equipment.
- 380 Conducted testing of state-of-the-art food service equipment to reduce labor on board ships and completed cook/chill feasibility study.
- 307 Designed an all electric field kitchen system for the Air Force to reduce fossil fuel consumption, increase efficiency and improve sanitation. Procured long lead items.
- 560 Continued advanced development of ration components and conducted user testing of improvements for individual and group ration systems. Transitioned 15 heat and serve ration and Meals Ready to Eat (MRE) components to Defense Supply Center, Philadelphia (DSCP). Received approval for full scale production of the polymeric tray, a lightweight, cost effective and more user friendly replacement for the metal tray.
- 342 Collected data and initiated analysis of the relationship between dietary patterns and military field performance as a baseline from which to design future on-demand feeding systems and ration delivery systems to enhance combat effectiveness.



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603747A - Soldier Support and Survivability**

PROJECT  
**610**

**FY 2000 Accomplishments (Continued)**

- 190 Initiated polymeric tray optimization efforts, focusing on "drop-in" technology enhancements (e.g. nano technology) to the current tray structure in order to ensure storage stability, oven ability, etc.
- 150 Initiated storage studies for the development of a predictive methodology to validate an accelerated storage protocol to ensure ration quality and reduce operations/production costs.
- 110 Conducted market investigation, Mobile Kitchen Trailer (MKT) fleet analysis and requirements development for the Battlefield Kitchen to replace the MKT.
- 210 Investigated and field tested alternate chemical heaters and package design to significantly reduce or eliminate the presence of hydrogen gas emitted during storage to enhance safety and eliminate storage restrictions.

Total 2349

**FY 2001 Planned Program**

- 120 Develop, fabricate and evaluate improvements (safety, reliability, maintainability, efficiency, etc.) to field feeding systems as required by the services and incorporate changes to support ongoing and future procurements.
- 457 Continue assessment of new food technology and food service equipment technologies including shipboard evaluations; initiate development of a convenience food logistics model to assist in designing and managing storage requirements for prepared foods aboard ship.
- 435 Complete design and conduct Developmental Testing of Air Force's all electric field kitchen system.
- 1117 Continue improvement of individual and group rations and conduct field test of transitioning, processing, and packaging technologies. Determine usage rates and overages for group ration secondary components to reduce surplus and decrease costs associated with field feeding.
- 105 Continue to track warfighter feeding patterns and performance data and transfer to database to establish baseline for future feeding scenarios.
- 285 Complete investigation of mono layer/high impact alternates to current polymeric tray to enhance durability, ovenability, and assure extended (3 yr) shelf life. Initiate Technical Tests of prototype trays.
- 225 Downselect alternate chemical heater for the MRE, assess production capability and transition to DSCP for production/MRE assembly.
- 505 Award development contract for the multi-temp refrigeration system and Marine Corps 8X8X10 refrigerated container. Support TRADOC in the development of the FY02 Concept Experimentation Program on the use of a multi-temp refrigeration system to support delivery of perishable rations on the battlefield. Systems will provide increased storage capacity and thermal efficiency. Multi-temp system provides flexibility for transporting fresh and frozen products at the same time.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
0603747A - Soldier Support and Survivability

PROJECT  
610

**FY 2001 Planned Program (Continued)**

- 100 Conduct sampling analysis of fielded MKTs to support requirements development for the Battlefield Kitchen that will replace the MKT.
- Total 3349

**FY 2002 Planned Program**

- 120 Develop, fabricate and evaluate improvements to field feeding systems as required by the services and incorporate changes to support ongoing and future procurements.
  - 1458 Continue improvement of individual and group rations; complete right sizing of secondary menu components and transition to procurement.
  - 285 Complete testing of polymeric trays and demonstrate commercial producibility; transition to procurement.
  - 255 Complete evaluation of shipboard food service equipment and the convenience food logistics model. Evaluate prepared foods for labor savings aboard ships.
  - 410 Conduct user testing, complete modification of an all electric kitchen, and deliver Technical Data Package (TDP) to Air Force.
  - 225 Continue data collection and initiate development of a model to evaluate the effects of field and garrison feeding patterns on military performance.
  - 220 Continue storage studies and determine correlation and validation protocols for accelerated ration storage.
  - 85 Identify packaging minimizing technologies to eliminate excess bulk and allow for the efficient handling and distribution of rations using modular containers and robotic devices.
  - 680 Fabricate prototype (2 @ \$200K ea.) for the multi-temp refrigeration system and Marine Corps 8X8X10 refrigerated container, and conduct Developmental Testing. Participate in the Concept Experimentation Program on perishable ration distribution on the battlefield.
- Total 3738

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603747A - Soldier Support and Survivability**

PROJECT  
**610**

<b>B. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, 0604713.D548, Military Subsistence System	1578	4703	1862	0	0	0	0	0	0	0
OPA3, M65803, Kitchen, Containerized, Field	7032	6077	3702	0	0	0	0	0	0	0
OPA 3, M65802, Sanitation Center, Field Feeding	658	4323	2413	0	0	0	0	0	0	0
M65801, Refrigeration Equipment	927	1466	928	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Project development transition to Engineering and Manufacturing Development and procurement.

<b>D. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Conduct Market Investigation of concept to replace MKT.	3Q			0	0	0	0	0
Develop shipboard applications for state-of-the-art food service equipment. This effort is ongoing	3Q			0	0	0	0	0
Conduct DT/OT of Air Force all electric field kitchen system.		4Q		0	0	0	0	0
Conduct Development Testing of Multi-Temp refrigeration system.			4Q	0	0	0	0	0
Type Classify the Multi-Temp refrigeration systems.				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603747A - Soldier Support and Survivability**

**PROJECT  
610**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Joint Service Food/Combat Feeding Equipment	In-House	SBCOM, Natick, MA	15755	1560	1-4Q	1650	1-4Q	0	0	0	0	Continue
b . Joint Service Food/Combat Feeding Equipment	Contracts	Various	5004	1084	1-4Q	1378	1-4Q	0	0	0	0	Continue
Subtotal:			20759	2644		3028		0		0	0	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603747A - Soldier Support and Survivability**

**PROJECT**  
**610**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Joint Service Food/Combat Feeding Equipment	MIPR	DTC, Maryland & AEC, Virginia	2181	569	1-4Q	562	1-4Q	0	0	0	0	Continue
<b>Subtotal:</b>			2181	569		562		0		0	0	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Ofc Management	In-House	SBCOM, Natick, MA	1230	136	1-4Q	148	1-4Q	0	0	0	0	Continue
<b>Subtotal:</b>			1230	136		148		0		0	0	Continue

<b>Project Total Cost:</b>			24170	3349		3738		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603747A - Soldier Support and Survivability**

PROJECT  
**669**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
669 CLOTHING AND EQUIPMENT	3252	3459	4830	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project provides state-of-the-art technology to develop improved tactical and non-tactical clothing and individual equipment to enhance the lethality, survivability, sustainability, and mobility of the individual soldier, in support of Force XXI and the Transformation Campaign Plan.

**FY 2000 Accomplishments**

- 149 ABS - Advanced Bomb Suit, developed life cycle cost estimate in support of ORD approval. Obtained Milestone B approval, commenced request for proposal (RFP) for test items, and initiated development of performance specification.
- 2714 MEPS - Military Eye Protection System, defined non-laser lens configuration and prescription lens corrections for goggles and spectacles, commenced prototype testing, and completed study on laser lenses for Military Eye Protection System (MEPS).
- 18 CWC - Cold Weather Canteen, provided engineering support and program oversight for the execution of the research and development contract.
- 86 ICB - Interim Combat Boot, completed operational testing and provided results to the Army Uniform Board (AUB).
- 285 Provided in-house engineering support services, computer services, conduct technical and program reviews.

Total 3252

**FY 2001 Planned Program**

- 398 ABS - Advanced Bomb Suit, award contract for procurement of test items and commence developmental testing/operational testing.
- 1422 MEPS - Military Eye Protection System, complete contract phase I, conduct initial developmental testing on phase I prototypes, downselect to a single contractor, and award contract phase II to initiate laser protection integration.
- 72 IHPS - Integrated Head Protection System, obtain concept approval and prepare for Milestone B decision.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**4 - DEM/VAL**

PE NUMBER AND TITLE

**0603747A - Soldier Support and Survivability**

PROJECT

**669**

**FY 2001 Planned Program (Continued)**

- 505 CWC - Cold Weather Canteen, complete manufacturing methods development, conduct production scale-up of user evaluation items, and commence user evaluation and survey.
- 580 IACU - Interim Advanced Combat Uniform, obtain Milestone B and solicitation release and procure initial developmental test items.
- 180 IMCB - Interim Modular Combat Boot, obtain Milestone B and solicitation release.
- 302 Provide in-house engineering support services, computer services, conduct technical and program reviews.

Total 3459

**FY 2002 Planned Program**

- 750 IHPS - Integrated Head Protection System, obtain Milestone B and solicitation release and procure initial developmental test items.
- 1706 MEPS - Military Eye Protection System, procure test items, commence and complete operational testing.
- 160 ABS - Advanced Bomb Suit, complete developmental/operational testing and achieve Milestone C.
- 200 CWC - Cold Weather Canteen, complete operational evaluation/field testing, type classify standard, and transition to production.
- 600 IMCB - Interim Modular Combat Boot, obtain test items and initiate technical testing and extended user evaluation.
- 955 IACU - Interim Advanced Combat Uniform, initiate and complete developmental contract phase II and initiate phase III, procure items for test and begin developmental testing.
- 459 Provide in-house engineering support services, computer services, conduct technical and program reviews.

Total 4830

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603747A - Soldier Support and Survivability**

PROJECT  
**669**

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, 0604713.DL40, Clothing and Equipment	3423	4227	4560	0	0	0	0	0	0	0
OMA, 121017, Central Funding and Fielding	88467	79590	90013	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Developments transition to engineering and manufacturing development (EMD) followed by transition to production. However, when developments are sufficiently mature for some items, they can be type classified and transitioned to production.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Life Cycle Systems Review	2&4Q	2&4Q	2&4Q	0	0	0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603747A - Soldier Support and Survivability**

**PROJECT**  
**669**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Clothing & Individual Equipment	MIPR	SBCCOM, Natick, MA	509	963	1-4Q	1748	1-4Q	0	0	0	0	0
b . Clothing & Individual Equipment	Contracts	Various	2268	1730	1-4Q	1158	1-4Q	0	0	0	0	0
Subtotal:			2777	2693		2906		0		0	0	0

Remarks: Product development costs vary annually depending on the number and type of programs being evaluated.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Misc Support	MIPR	LOGSA, AL	29	50	1-4Q	50	1-4Q	0	0	0	0	0
b . Misc Support	Contract	Various	0	0		43	1-3Q	0	0	0	0	0
Subtotal:			29	50		93		0		0	0	0

Remarks: Support costs can vary annually depending on the number and types of items we are evaluating.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603747A - Soldier Support and Survivability**

**PROJECT**  
**669**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	MIPR	ATEC, Virginia	140	414	1-4Q	1372	1-4Q	0	0	0	0	0
<b>Subtotal:</b>			140	414		1372		0		0	0	0

Remarks: Testing costs vary annually by item.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management Support	In House	PM Soldier, Virginia	306	302	1-4Q	459	1-4Q	0	0	0	0	0
<b>Subtotal:</b>			306	302		459		0		0	0	0

Remarks: Management services costs vary annually depending on the number and type of programs being evaluated. \*Based on the number of years Clothing and Individual Equipment programs have been in existence, it is impossible to capture all prior year costs..

<b>Project Total Cost:</b>			3252	3459		4830		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603747A - Soldier Support and Survivability**

PROJECT  
**C09**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C09 SOLDIER SUPPORT EQUIPMENT - AD	5415	6641	8914	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project develops and fields soft shelters, showers, latrines, heaters, mortuary affairs, organizational equipment and other combat service support equipment to improve unit sustainability and combat effectiveness. Conduct demonstration and validation of aerial delivery systems for equipment and personnel, with emphasis on reduced incidence of injuries, improved safety and accuracy, and increased survivability of aircraft, equipment, and personnel. Develop a family of tactical rigid wall shelters, which enhances soldier survivability and sustainability of command, control, communications and intelligence. Shelters provide highly mobile, joint service platforms for the digitization of the battlefield, housing many critical vehicle-mounted battlefield systems, medical critical care in a Battlefield/Chemical/Biological (C/B) environment and high tech maintenance. Project supports development of critical enablers that enhance deployment, reduce CS/CSS footprint, reduce logistics/support costs, and increase readiness in accordance with the Army Transformation Campaign Plan objectives.

**FY 2000 Accomplishments**

- 1510 Terminated existing Advanced Tactical Parachute System (ATPS) R&D contract. Conducted a Jump-off for new R&D ATPS Contract. Awarded new R&D ATPS contract. NOTE: Effort transfers to Project Code DC40 in 2001.
  - 570 Conducted Operational Testing; awarded LRIP Contract and prepared documentation required to Type Classify the Ejection Parachute Jettison System (EPJS).
  - 1405 Conducted system and feasibility testing for the Dual Row Airdrop System.
  - 945 Completed Developmental Testing of Dual Row Airdrop System.
  - 400 Completed production verification testing for the Type III (2.5 Ton truck/LMTV) and Type IV (5 Ton Truck/MTV) Cargo Bed Cover variants.
  - 525 Built Type III and Type IV Cargo Bed Cover variant prototypes for system integration and demonstration.
  - 60 Completed Field Evaluation for the Type III (2.5 Ton truck/LMTV) and Type IV (5 Ton Truck/MTV) Cargo Bed Cover variants.
- Total 5415

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603747A - Soldier Support and Survivability**

PROJECT  
**C09**

**FY 2001 Planned Program**

- 2007 Complete Developmental Testing for the Dual Row Airdrop System (DRAS). Initiate and conduct Operational Testing for the DRAS and initiate load certification.
  - 1214 Procure Operational Test items for the DRAS (40 @ \$30K ea).
  - 470 Conduct Milestone B program initiation for Enhanced Container Delivery System. Conduct design verification testing.
  - 60 Procure test item for the ECDS (20 @ \$3K ea).
  - 200 Prepare performance specifications, Type Classify, and gain Milestone C approval for Containerized Latrine.
  - 500 Conduct market investigation for the Containerized Batch Laundry, and initiate development and design of prototypes. (MS B)
  - 547 Conduct Market Survey, obtain Milestone B decision for Mobile Integrated Remains Collection System design, and initiate R&D effort.
  - 1010 Complete Milestone III Type Classification Standard for Cargo Bed Covers Type III (2.5 Ton Truck/LMTV) variants. Complete Milestone III Type Classification Standard for Cargo Bed Covers Type I (HMMWV) and Type II (1.5 ton cargo trailer). Initiate CBC Type I & II P3I effort.
  - 433 Conduct Milestone B program initiation for Extraction Parachute Jettison System (EPJS)- Heavy. Perform design verification testing EPJS - Heavy.
  - 100 Complete Operational Testing on EPJS-L and Type Classify system.
  - 100 Procure test items for the EPJS - Heavy (5@ \$20K ea).
- Total 6641

**FY 2002 Planned Program**

- 1000 Fabricate prototypes (2 @ \$250K ea.) and conduct Developmental and Operational Testing for the Containerized Batch Laundry.
- 408 Conduct Market Investigation, conduct MS B, prepare and award developmental contract, and initiate prototype design of the Clothing Repair System.
- 750 Conduct Milestone B decision and fabricate test prototype of Mobile Integrated Remains Collection System (2 @ \$175K ea.) and Initiate Developmental Testing.
- 675 Compete DRAS Operational Testing. Conduct Milestone III for DRAS.
- 700 Award developmental contract for EPJS(H) and purchase safety of flight test items.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
**0603747A - Soldier Support and Survivability**

PROJECT  
**C09**

**FY 2002 Planned Program (Continued)**

- 800 Conduct EPJS(H) electronic emissions testing. Prepare and conduct EPJS(H) Safety of flight tests at Edwards Air Force Base.
- 750 Award developmental contract for Enhanced Container Delivery System (ECDS) and purchase developmental test items.
- 500 Prepare and conduct Developmental Testing on the ECDS.
- 1853 Conduct Market Investigation, prepare documentation for Milestone B and award contract for prototype development for the Rapid Rigging/De-rigging Air Drop System (RRDAS).
- 1478 Conduct MS B and award RDT&E contract for Cargo Bed Covers for High Mobility Trailer variants. Initiate Cargo Bed Cover Type III/IV P3I effort.

Total 8914

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603747A - Soldier Support and Survivability**

PROJECT  
**C09**

<b><u>B. Other Program Funding Summary</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>To Compl</b>	<b>Total Cost</b>
RDTE, 0604713.DC40, Unit/Organizational Equipment	4475	5817	8716	0	0	0	0	0	0	0
M82706, Containerized Latrine	0	0	911	0	0	0	0	0	0	0
M82708, Containerized Batch Laundry	0	0	0	0	0	0	0	0	0	0
MA7802, Extraction Parachute Jettison Device	2380	0	0	0	0	0	0	0	0	0
MA7805, Universal Static Line	976	3934	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Accelerate product development and testing to transition to Engineering and Manufacturing Development and/or Production.

<b><u>D. Schedule Profile</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Complete Operational Testing for the Extraction Parachute Jettison System (L)		2Q		0	0	0	0	0
Type Classify the Extraction Parachute Jettison System (L)		4Q		0	0	0	0	0
Complete Production Verification Testing and Field Assessment for the Type I and Type II CBCs	2Q			0	0	0	0	0
Conduct First Article Testing for the Type III and Type IV Cargo Bed Cover variants	3Q			0	0	0	0	0
Complete MS III for the Type I and Type II Cargo Bed Cover variants		2Q		0	0	0	0	0
Complete Developmental Testing for Dual Row Airdrop System	4Q			0	0	0	0	0
Conduct Operational Testing for the Dual Row Airdrop System		2Q		0	0	0	0	0
Fabricate and Conduct Technical Test for Containerized Latrine		4Q		0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>4 - DEM/VAL</b>	PE NUMBER AND TITLE <b>0603747A - Soldier Support and Survivability</b>	PROJECT <b>C09</b>
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<b><u>D. Schedule Profile (continued)</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete MS-C/Type Classify for Containerized Latrine		4Q		0	0	0	0	0
Initiate MIRCS Market Survey		1Q		0	0	0	0	0
Complete Milestone A for MIRCS		4Q		0	0	0	0	0
Award R&D Contract to fabricate MIRC prototypes		4Q		0	0	0	0	0
Fabricate Prototype MIRCS			3Q	0	0	0	0	0
Conduct Operational Test for MIRCS				0	0	0	0	0
Complete MS III for the Type III and Type IV Cargo Bed Cover variants		4Q		0	0	0	0	0
Conduct MS B and award RDT&E contract for Cargo Bed Cover High Mobility Trailer variant			2Q	0	0	0	0	0
Type Classify (MS C) Type High Mobility Trailer Variant CBC				0	0	0	0	0
Conduct MS B on Extraction Parachute Jettison Device - Heavy		4Q		0	0	0	0	0
Conduct MS B on Enhanced Container Delivery System		4Q		0	0	0	0	0
Conduct MS III for Dual Row Airdrop System			4Q	0	0	0	0	0
Conduct Safety of Flight and Emissions Testing on the EPJS - Heavy			2Q	0	0	0	0	0
Conduct Developmental Testing on the ECDS			3Q	0	0	0	0	0
Conduct Developmental Testing on the EPJS - Heavy				0	0	0	0	0
Conduct Operational Testing on the ECDS				0	0	0	0	0
Conduct Safety of Flight and Emissions Testing on RRDAS				0	0	0	0	0
Conduct Developmental/Operational Testing of CBL			3Q	0	0	0	0	0
Type Classify (MS C) CBL				0	0	0	0	0
Conduct MS B and award development contract for CRS			3Q	0	0	0	0	0
Conduct Developmental testing of CRS				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603747A - Soldier Support and Survivability**

**PROJECT  
C09**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Soldier Support Equipment	In-House	NRDEC, Natick, MA	14389	1930	1-4Q	2880	1-4Q	0	0	0	0	Continue
b . Soldier Support Equipment	Contracts	Various	9927	2800	1-3Q	3533	1-4Q	0	0	0	0	Continue
Subtotal:			24316	4730		6413		0		0	0	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603747A - Soldier Support and Survivability**

**PROJECT**  
**C09**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Soldier Support Equipment	MIPR	DTC, Maryland & ATC, Virginia	4250	1253	1-4Q	1496	1-4Q	0	0	0	0	Continue
Subtotal:			4250	1253		1496		0		0	0	Continue
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management Support	In-House	PM-Soldier Support, Virginia	2201	658	1-3Q	1005	1-4Q	0	0	0	0	Continue
b . Project Management Support	In-House	SBCOM, Natick, MA	361	0		0		0	0	0	0	0
Subtotal:			2562	658		1005		0		0	0	Continue
<b>Project Total Cost:</b>			31128	6641		8914		0		0	0	Continue

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**907**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
907 TACTICAL SURVEILLANCE SYSTEMS - TIARA	0	0	16749	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE:** This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

Supports the tactical commander's intelligence requirements for contingency force development and deep battle targeting. Developments leverage specific data and capabilities available from existing and emerging National and selected theater resources. Meets stated Army tactical intelligence information and targeting needs, correcting deficiencies and developing concepts, techniques and prototype processors to exploit critical data for near real time integration into the appropriate tactical echelon. Specific details are provided in the Tactical Intelligence and Related Activities (TIARA) Congressional Budget Justification Book.

The capabilities developed will be incorporated into the Tactical Exploitation System (TES), Division TES (DTES), TES-Light, and Distributed Common Ground Station - Army (DCGS-A). The Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to multiple systems. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan.

**FY 2000 Accomplishments**

Not Applicable.

**FY 2001 Planned Program**

Not Applicable.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**4 - DEM/VAL**

PE NUMBER AND TITLE

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

PROJECT

**907**

**FY 2002 Planned Program**

- 13448 Pursue technology for the refinement of the common baseline, fully exploiting national and theater capabilities to meet emerging worldwide contingency scenarios. Effort includes initiatives on emitter mapping, phased array communications, and Measurement and Signature Intelligence (MASINT) processing.
  - 3301 Support ASPO program management for administrative activities.
- Total 16749

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	0	0	0	0
Appropriated Value	0	0	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	0	0	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	16749	0
Current Budget Submit (FY 2002/2003 PB )	0	0	16749	0

**Change Summary Explanation:**

These efforts were restructured from PE 0604766A, Project 909.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**907**

<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, A Budget Activity 5	0	0	0	0	0	0	0	0	0	0
PE 0604766A TES/DCGS-A (TIARA)	71879	57884	68205	0	0	0	0	0	0	0
RDTE, A Budget Activity 7	0	0	0	0	0	0	0	0	0	0
PE 0305208A, Project D956 CIG/SS (JMIP)	8004	7821	8242	0	0	0	0	0	0	0
Other Procurement Army, OPA-2	0	0	0	0	0	0	0	0	0	0
BZ7315 TENCAP (TIARA)	4351	12735	0	0	0	0	0	0	0	0
BZ7316 CIG/SS (JMIP)	2779	2807	2611	0	0	0	0	0	0	0
BZ7317 Tactical Surveillance System (TIARA)	0	0	26168	0	0	0	0	0	0	0

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

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete Emitter Mapping Initiative			4Q	0	0	0	0	0
MultiSensor SIGINT Pulse Level Correlator Initiative				0	0	0	0	0
Phased Ray Comms Initiative			2Q	0	0	0	0	0
MASINT Product Processing Initiative			2Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**907**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Common Baseline	SS/CPAF	Classified	0	0		13448		0	0	0	0	0
Subtotal:			0	0		13448		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ASPO In-House	N/A	ASPO, Alexandria, VA	0	0		3301	Various	0	0	0	0	0
Subtotal:			0	0		3301		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

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

**PROJECT  
907**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

<b>Project Total Cost:</b>			0	0		16749		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603774A - Night Vision System Advanced  
Development**

PROJECT  
**131**

COST (In Thousands)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
131 NIGHT VISION SYS A/DEV	6414	14831	12756	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE:** This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

The key objective of this program is to demonstrate and validate improvements to Night Vision Electro-Optic devices/systems for acquisition and engagement of enemy targets at maximum weapon system ranges under degraded battlefield/weather conditions and in countermeasure environments. This project provides the funding necessary to implement advances for product improvement or horizontal technology integration (HTI) to upgrade current capabilities in the future. The efforts are centered around development of improved electro-optic sensors, countermeasures and laser systems capabilities for the individual soldiers and combat vehicles to meet stated Army deficiencies such as fratricide reduction. This project also provides for the Component Advanced Development (CAD) phase of the Division Tactical Unmanned Aerial Vehicle (TUAV) Signals Intelligence (SIGINT) Program (DTSP). DTSP will replace currently deployed divisional assets. This will be the Division and Armored Cavalry Regiment Commanders principal SIGINT and Electronic Warfare (EW) System. It will be designed to support Army Transformation. DTSP will provide the Tactical Commander with enhanced capability for situational awareness, electronic Intelligence Preparation of the Battlefield (IPB), battlespace visualization, target development, and force protection throughout the division's width and depth as defined in Army XXI. The DTSP will interface with the division and armored cavalry Analysis Control Element's (ACE) All Source Analysis System (ASAS) as well as the maneuver brigade Analysis Control Team's (ACT) Common Ground Station (CGS) and/or ASAS-Remote Work Stations (ASAS-RWS) providing near-real-time (NRT) digital inputs to the common operating picture (COP). The DTSP will include an air sensor and a control/processing facility. Key operational (and doctrinal) features will be the remote control of airborne sensors and electronic mapping of the enemy's communications and radar systems in the Division's Area of Operations. The DTSP will also rapidly generate information to identify critical enemy nodes (emitters), and then develop locations that assist in targeting by EW or by division assets. FY02 and FY03 funding supports the CAD phase for the DTSP. The DTSP System Development and Demonstration efforts are covered under PE/Project 64270/L12. This project supports the Legacy to Objective transition path (for Night Vision) and the Objective transition path (for DTSP) of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 1092 Developed frontside illumination laser protection and advanced capabilities (i.e., local area processing and frame integration) for high performance systems, such as Horizontal Technology Integration Second Generation FLIR (HTI SGF) (five test units).
- 631 Continued development of Automatic Target Recognition/Automatic Target Cueing capabilities on Long Range Advanced Scout Surveillance System (LRAS3) (one test unit).
- 563 Continued HTI Laser activities including design, component solid models, and system fit tests.

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)****June 2001**

BUDGET ACTIVITY

**4 - DEM/VAL**

PE NUMBER AND TITLE

**0603774A - Night Vision System Advanced  
Development**

PROJECT

**131****FY 2000 Accomplishments (Continued)**

- 78 Continued demonstration of Sensor Risk Reduction Project (SR2P) Testbed with emphasis on user evaluation activities at Fort Hood and Hunter Liggett (two test units).
- 300 Developed a laser rangefinder to be integrated into the TUAV Advanced EO/IR Pod
- 3750 Developed an Integrated fiber-optic laser with visible and infrared lasers and digital compass into a fire control system on the M4 weapon for Land Warrior.

Total 6414

**FY 2001 Planned Program**

- 985 Development and demonstration of advanced capabilities for 2nd Gen FLIR B-Kit, to include electronic stabilization for the B-Kit, self healing focal plane arrays and multi-level laser hardening
- 453 HTI Laser B Kit and operational functions analysis
- 795 Initiate development of Long Range Advanced Scout Surveillance System (LRAS3) on a telescopic mast
- 439 Analysis and evaluation of the potential for an uncooled FLIR B-Kit for OICW and OCSW
- 313 Initiate the development of head tracked commanders thermal sensor
- 2000 Initiate demonstration and evaluation of Enhanced Night Vision Goggle (ENVG) and enabling technologies
- 2000 Initiate demonstration and evaluation of Aviation Night Vision Goggle (ANVG) (14 test units)
- 910 Cost Benefit Analysis for TUAV Payloads
- 935 Prepare for and Conduct SSEB to award Component Advanced Development (CAD) contract for Division TUAV SIGINT Program (DTSP).
- 5401 Award CAD Contract for DTSP to evaluate SIGINT payload design approaches on a UAV.
- 600 UAV Quieting

Total 14831



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603774A - Night Vision System Advanced  
Development**

PROJECT  
**131**

**FY 2002 Planned Program**

- 434 Complete development and demonstrate LRAS3 on a telescopic mast for LRAS3 P3I and IAV P3I.
- 420 Large format array high performance uncooled thermal sight development
- 522 Completion of analysis and evaluation of the potential for an uncooled FLIR B-Kit for OICW and OCSW
- 702 Completion of development and demonstration of the head tracked commanders thermal sensor
- 2013 Develop laser protection and assess production and performance issues for uncooled detectors.
- 665 Complete development and demonstration of advanced capabilities for 2nd Gen FLIR B-Kit, to include electronic stabilization for the B-Kit, self healing focal plane arrays
- 7000 Continue DTSP CAD to evaluate SIGINT payload design approaches on a UAV
- 1000 Prepare for demonstration of payload and systems integration

Total 12756

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	3188	10968	12698	0
Appropriated Value	3188	14968	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-85	0	0	0
c. Omnibus or Other Above Threshold Reprogramming	3822	0	0	0
d. Below Threshold Reprogramming	-500	0	0	0
e. Rescissions	-11	-137	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	58	0
Current Budget Submit (FY 2002/2003 PB )	6414	14831	12756	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603774A - Night Vision System Advanced  
Development**

PROJECT  
**131**

**Change Summary Explanation:**

FY 2000 funds of \$0.5M were reprogrammed from 0603774A D131 to 06054817A D902. FY 2000 funds of \$3.822 were reprogrammed for Army Transformation. FY 2001 Congressional plus up of \$4M for Advanced Aviation NV Goggle and Enhanced Ground NV Goggle

<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PE 0602709A/Night Vision and Electro-Optical Technology RDTE	22614	23746	20598	0	0	0	0	0	0	0
PE 0603710A/Night Vision Advanced Development RDTE, A Budget	38470	42746	37081	0	0	0	0	0	0	0
PE 0604710A/Night Vision Devices Engineering Development RDTE	31308	33762	24201	0	0	0	0	0	0	0
PE 0203735A/ Abrams (D330) and Bradley (D371) A-Kit Developm	23047	0	0	0	0	0	0	0	0	0
OPA2 K38300 LRAS3	45037	45733	44535	0	0	0	0	0	0	0
WTCV G80717 M2A3/M3A3 Bradley	45276	59673	58223	0	0	0	0	0	0	0
WTCV GA0750 Abrams Upgrade	65196	49160	53293	0	0	0	0	0	0	0
WTCV GA0730 M1A2 SEP	0	26828	12537	0	0	0	0	0	0	0
RDTE (PE 64270 L12) - (includes Prophet funding in FY 00-03)	16998	4939	1747	0	0	0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603774A - Night Vision System Advanced  
Development**

PROJECT  
**131**

**D. Acquisition Strategy:** The advances and improvements for Second Generation FLIR (SGF) and HTI Laser activities utilize various cost reimbursement development contracts that were and will continue to be competitively awarded using best value source selection procedures. Division TUAV SIGINT Program Component Advanced Development phase will be competitively awarded contracts to multi contractors.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
DTSP CAD Decision Review		1Q		0	0	0	0	0
Award DTSP CAD Contract		3Q		0	0	0	0	0
Conduct DTSP Rooftop Demonstrations				0	0	0	0	0
Conduct DTSP Flight Demonstration/s				0	0	0	0	0
DTSP MS B Decision				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603774A - Night Vision System Advanced Development**

**PROJECT  
131**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Laser Protection	C/CP, MIPR	DRS, Dallas, TX /SBRC, Santa Barbara, CA; NVESD	1341	985	1-2Q	0		0	0	0	0	0
b . SR2P	MIPR	NVESD	658	0		0		0	0	0	0	0
c . FLIR Develop/Integrate	Various	Various	1938	0		665	1-3Q	0	0	0	0	0
d . HTI Laser Design	C/CP	Raytheon, Dallas, TX	687	219	2Q	0		0	0	0	0	0
e . ATR/ATC Activities	MIPR	Various	462	0		0		0	0	0	0	0
f . TUAV Laser Rangefinder	C/CP	Versitron, Santa Rosa, CA	300	0		0		0	0	0	0	0
g . Large Format Array Uncooled Thermal Sight	C/CP	To Be Selected	0	0		360	1Q	0	0	0	0	Continue
h . LRAS3 Telescopic Mast Demo	MIPR	Various	0	685	1-2Q	434	1-2Q	0	0	0	0	0
i . Uncooled B-Kit Evolution	TBD	Various	0	372	1-2Q	522	1-2Q	0	0	0	0	0
j . Head Tracked Commander's Sight	TBD	Various	0	223	1-2Q	652	1-2Q	0	0	0	0	0
k . Develop SWIR solid state detector	TBD	Various	0	0		0	1-2Q	0	0	0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603774A - Night Vision System Advanced Development**

**PROJECT**  
**131**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
l . Demo and eval of ENVG technology	Various	Various	0	1678	2-3Q	0		0	0	0	0	0
m . Demo and eval of ANVG	Various	Various	0	1420	2-3Q	0		0	0	0	0	0
n . Cost Benefit Analysis TUAV	TBD	TBS	0	910	2-3Q	0		0	0	0	0	0
o . Laser hardening Uncooled FPA	TBD	TBS	0	0		1750		0	0	0	0	0
p . Award CAD Contract for DTSP	C/CPFF	TBS	0	4736	3Q	6200	1Q	0	0	0	0	0
q . UAV Quieting, Etc. DTSP	TBD	TBS	0	900	3Q	0		0	0	0	0	0
r . Demo of payload & systems integration DTSP	TBD	TBS	0	0		0		0	0	0	0	0
s . Land Warrior			3750	0		0		0	0	0	0	0
Subtotal:			9136	12128		10583		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603774A - Night Vision System Advanced Development**

**PROJECT  
131**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	Various	424	508	1Q	347	1Q	0	0	0	0	Continue
b . Matrix Support	MIPR	HQ, CECOM	0	400	1Q	700	1Q	0	0	0	0	0
c . Engineering Support	FFP	MITRE; McLean, VA	0	500	1Q	500	1Q	0	0	0	0	0
Subtotal:			424	1408		1547		0		0	0	Continue
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Multispectral Eval	MIPR	WSMR	308	0		0		0	0	0	0	0
b . FLIR Demos and Evals	MIPR	Various	836	0		0		0	0	0	0	0
c . ENVG Demos and Evals	MIPR	Various	0	105	2-3Q	0		0	0	0	0	0
d . HT Command Site Eval	MIPR	Various	0	90	2Q	0		0	0	0	0	0
e . ANVG Test Plan and Flight Support	MIPR	Various	0	480	2Q	0		0	0	0	0	0
f . ANVG Simulation/Field Eval	MIPR	Various	0	100	2Q	0		0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603774A - Night Vision System Advanced Development**

**PROJECT  
131**

III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
g . Operational Assessment of DTSP Rooftop & Flight Demo/s	MIPR	To Be Selected	0	0		0		0	0	0	0	0
Subtotal:			1144	775		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management		PM-NV/RSTA, Ft.Belvoir, VA	102	120	1Q	26	1Q	0	0	0	0	Continue
b . Program Management		PM, Signals Warfare	0	400	1Q	600	1Q	0	0	0	0	0
Subtotal:			102	520		626		0		0	0	Continue

Project Total Cost:			10806	14831		12756		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
**0603779A - Environmental Quality Technology Dem/Val**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	4764	13275	7536	0	0	0	0	0	0	0
035 NATIONAL DEFENSE CNTR FOR ENVIRO EXCELLENCE-NDCEE	4764	4852	4905	0	0	0	0	0	0	0
04E ENVIRONMENTAL RESTORATION TECH VALIDATION	0	0	2631	0	0	0	0	0	0	0
04F COMMERCIALIZATION OF TECH TO LOWER DEFENSE COSTS	0	8423	0	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

There is a broad application potential for environmental quality technology (EQT) to apply to multiple Army weapon systems' applications. Technology must be validated (life-cycle cost and performance data) before potential users will consider exploiting it. This program will include efforts associated with validating the general military utility or cost reduction potential of technology when applied to different types of military equipment or techniques. It may include evaluations and proof-of-principle demonstrations in field exercises to evaluate upgrades or provide new operational capabilities. The evaluations of technologies will be in as realistic an operating environment as possible to assess their performance or cost reduction potential. EQT demonstration/validation is systemic; i.e., applies to a class of systems (e.g., tanks or aircraft) or to a Department of Army-wide, multiple site/installation problem (e.g., unexploded ordnance detection and classification). This program will address, and eventually resource, programs in each of the environmental quality technology pillars (restoration, conservation, compliance, and pollution prevention). Work must be endorsed by potential users and supported by a state-of-the-art assessment (i.e., technology is well-in-hand). Documented evidence must be available to support proposed EQT demonstration/validation projects to validate technology that could satisfy high-priority Army environmental quality RDT&E requirements. This program also includes a Congressionally added project to address Commercialization of Technology to Lower Defense Costs. This work is a transition of an effort added by Congress in FY 2000 to RDT&E Program Element 0602720A, Environmental Quality Technology.



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
0603779A - Environmental Quality Technology Dem/Val

<u>B. Program Change Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	0	4897	4883	0
Appropriated Value	0	13397	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reduction	0	0	0	
b. SBIR/STTR	0	0	0	
C. Omnibus or Other Above Threshold Reprogramming	4764	0	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	0	-122	0	
Adjustments to Budget Years Since FY2001 PB	0	0	2653	
Current Budget Submit (FY 2002/2003 PB )	4764	13275	7536	0

Change Summary Explanation: Funding - FY 2000: Funds reprogrammed to this program element per OSD guidance to support the NDCEE mission. FY 2001: Congressional increase to support Commercialization of Technology to Reduce Defense Costs (+8500). FY 2002/2003: Funding increase to support Unexploded Ordnance (UXO) Identification/Discrimination Demonstration/Validation.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603779A - Environmental Quality Technology  
Dem/Val**

PROJECT  
**035**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
035 NATIONAL DEFENSE CNTR FOR ENVIRO EXCELLENCE-NDCEE	4764	4852	4905	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This program is managed by the Army on behalf of the Office of the Deputy Under Secretary of Defense for Environmental Security (DUSD-ES). NDCEE is used to demonstrate and export environmentally-acceptable technology to industry; validate new technology prior to exporting that technology to industry; and assist in technology transfer. The NDCEE is a DoD resource for environmental quality management and technology validation. Related programs supported by the NDCEE include the Joint Group on Pollution Prevention (JG-PP) and the DoD fuel cell program.

**FY 2000 Accomplishments**

- 2831 - Oversee and validate environmentally acceptable technologies for potential exploitation at DoD facilities/installations.  
- Support pollution prevention efforts in acquisition (JG-PP).
  - 1933 - Validate technologies that improve DoD's industrial pollution prevention and compliance technical capability for coatings, platings, and sealants and for heavy metals reduction/elimination from surface protection processes.
- Total 4764

**FY 2001 Planned Program**

- 2866 - Oversee and validate environmentally acceptable technologies for potential exploitation at DoD facilities/installations.  
- Support pollution prevention efforts in acquisition (JG-PP).
  - 1842 - Validate technologies that improve DoD's industrial pollution prevention and compliance technical capability for coatings, platings, and sealants and for heavy metals reduction/elimination from surface protection processes.  
- Increase capabilities in technical data and modeling using existing capabilities in visualization and 3-D modeling.
  - 144 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
- Total 4852

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

4 - DEM/VAL

PE NUMBER AND TITLE

0603779A - Environmental Quality Technology  
Dem/Val

PROJECT

035

## **FY 2002 Planned Program**

- 2922 - Oversee and validate environmentally acceptable technologies for potential exploitation at DoD facilities/installations.  
- Support pollution prevention efforts in acquisition (JG-PP).
- 1983 - Validate technologies that improve DoD's industrial pollution prevention and compliance technical capability for coatings, platings, and sealants and for heavy metals reduction/elimination from surface protection processes.

Total 4905

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

**C. Acquisition Strategy:** Not applicable for this item.

**D. Schedule Profile:** Not applicable for this item.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603779A - Environmental Quality Technology Dem/Val**

**PROJECT  
035**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Technical Data	CPPF	Concurrent Technologies Corporation, Johnstown, PA	1155	1162	2Q	1190	1Q	0	0	0	0	Continue
Subtotal:			1155	1162		1190		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603779A - Environmental Quality Technology Dem/Val**

**PROJECT**  
**035**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Testing	CPFF	Concurrent Technologies Corporation, Johnstown, PA	1109	1190	2Q	1215	2Q	0	0	0	0	Continue
<b>Subtotal:</b>			1109	1190		1215		0		0	0	Continue
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Support	ALLOT	OASA(I&E)	2500	2500		2500		0	0	0	0	Continue
<b>Subtotal:</b>			2500	2500		2500		0		0	0	Continue
<b>Project Total Cost:</b>			4764	4852		4905		0		0	0	Continue

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>4 - DEM/VAL</b>			<b>PE NUMBER AND TITLE</b> <b>0603779A - Environmental Quality Technology</b> <b>Dem/Val</b>						<b>PROJECT</b> <b>04E</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
04E ENVIRONMENTAL RESTORATION TECH VALIDATION	0	0	2631	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Unexploded Ordnance (UXO) Identification and Discrimination. The Army reported in the 1996 UXO Report to Congress that 72 installations have identified 531,167 acres of land known to be contaminated with UXO and 940,438 acres of suspected contamination. In addition, formerly used defense sites, many of which may no longer be under military ownership, may also have buried UXO. Current technologies are very expensive and often cannot accurately discriminate between UXO and exploded ordnance/scrap metal masses in historical and active ranges, impact areas, landfills, underground storage locations, and open burning and open detonation sites. Technologies must be developed that are non-intrusive, accurately identify UXO from scrap and shrapnel, and identify the orientation, configuration, and type of UXO. The development of identification/discrimination technologies is critical to increasing the safety to remove UXO, design appropriate removal operations, and decrease removal costs. The purpose is to demonstrate and validate a UXO detection, discrimination, and identification system that minimizes residual risk and significantly reduces remediation costs. The activities funded under this project implement the 1996 UXO Report to Congress and the 1998 Defense Science Board requirements to improve UXO discrimination capabilities by reducing false alarm rates tenfold while achieving greater than 90% probability of detection of a wide range of UXO in a variety of environmental and geologic conditions. The system will consist of arrays of sensors specifically designed to provide reliable signatures of buried UXO and advanced sensor fusion/signal analysis technologies that will allow robust discrimination and identification of buried UXO in the presence of man-made and natural clutter. This demonstration/validation program will be performed in stages, with prototype systems that incorporate the more mature technologies [magnetometry and multi-channel electro-magnetic induction (EMI)] being evaluated during the first year. Starting with FY 2003, ground penetrating radar (GPR) and chemical and seismic/acoustic sensors will be integrated into the system as they mature.

**FY 2000 Accomplishments**

- Program not funded in FY 2000.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

4 - DEM/VAL

PE NUMBER AND TITLE

0603779A - Environmental Quality Technology  
Dem/Val

PROJECT

04E

## FY 2001 Planned Program

- Program not funded in FY 2001.

## FY 2002 Planned Program

- 1523 - Begin validation of prototype system that integrates advanced magnetometry and EMI sensors with fusion/analysis algorithms to improve buried UXO detection, discrimination, and identification at well-characterized controlled sites.
- 1108 - Begin live site demonstration and validation of prototype UXO multisensor and analysis system.

Total 2631

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

**C. Acquisition Strategy:** Not applicable for this item.

**D. Schedule Profile:** Not applicable for this item.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603779A - Environmental Quality Technology Dem/Val**

**PROJECT**  
**04E**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . This effort will begin in FY02. Contracts and types will be determined during FY01.	TBD	TBD	0	0		500		0	0	0	0	0
b . In-House Development - Integration of sensors, hardware/software, and navigation system into prototy	In-house	Engineer Research and Development Center (ERDC), Vicksburg, MS	0	0		750	1Q	0	0	0	0	0
<b>Subtotal:</b>			0	0		1250		0		0	0	0
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . This effort will begin in FY02. Contracts and types will be determined during FY01.	BAA and MIPR	TBD	0	0		250		0	0	0	0	0
b . In-House Development - Preparation of test Sites	In-House	ERDC, Vicksburg, MS	0	0		370	1Q	0	0	0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603779A - Environmental Quality Technology Dem/Val**

**PROJECT**  
**04E**

II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		620		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . This effort will begin in FY02. Contracts and types will be determined during FY01. - Dem/Val Spt	BAA and MIPR	TBD	0	0		300		0	0	0	0	0
b . In-House Development - Planning and Execution	In-House	ERDC, Vicksburg, MS	0	0		211	1Q	0	0	0	0	0
Subtotal:			0	0		511		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603779A - Environmental Quality Technology Dem/Val**

**PROJECT**  
**04E**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . This effort will begin in FY02. Management shared by Army Environmental Center (AEC) and ERDC.	MIPR	AEC	0	0		150		0	0	0	0	0
b . In-House Management (ERDC)	In-House	ERDC, Vicksburg, MS	0	0		100		0	0	0	0	0
Subtotal:			0	0		250		0		0	0	0
<b>Project Total Cost:</b>			0	0		2631		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> 4 - DEM/VAL			<b>PE NUMBER AND TITLE</b> 0603782A - WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL					<b>PROJECT</b> 355		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
355 WIN-TACTICAL - DEM/VAL	0	0	15075	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE:** This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

The Warfighter Information Network-Tactical (WIN-T) is the Army's "New Start" tactical digital communications system. WIN-Tactical will provide advanced commercial-based networking capability to the Warfighter, and extends from the Theater to Maneuver Battalion. It also replaces the current Army Mobile Subscriber Equipment (MSE) and Tri-Services Tactical Communications (TRI-TAC) systems. The WIN-Tactical system enables Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) capabilities that are mobile, secure, survivable, seamless, and multimedia based. WIN-Tactical provides a seamless, secure architecture that increases global connectivity, significantly reduces the footprint and signal force structure, moves soldiers off hilltops, and provides increased data capacity. The WIN-Tactical supports Command and Control On-the-Move (C2OTM) Operations, and enhances situational awareness, and is Joint Tactical Architecture (JTA) compliant. WIN-Tactical will allow Army commanders, and other communications network users at all echelons, to exchange information internal and external to the theater, from wired or wireless telephones, computers (internet like capability), video terminals and other multi-media devices. Key elements of WIN-Tactical include Switching/Routing, Transmission, Network Management, Information Assurance, and subscriber services.

WIN-Tactical is a "New Start" program beginning with the System Integration in FY 2002.

"This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP)."

**FY 2000 Accomplishments**

Program Element funding begins in FY 2002.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603782A - WARFIGHTER INFORMATION  
NETWORK-TACTICAL - DEM/VAL**

PROJECT  
**355**

**FY 2001 Planned Program**

Program Element funding begins in FY 2002.

**FY 2002 Planned Program**

- 1100 Initiate WIN-Tactical Optimum Network (OPNET) Performance Modeling, Frequency Availability Analysis, and Protection Profile.
- 1475 Prepare/coordinate Request For Proposal (RFP), and Milestone B Decision Documentation, and perform program support and management efforts.
- 2500 Conduct Source Selection Evaluation Board (SSEB) for dual System Integration contract awards to assess/develop WIN-Tactical Architecture, which includes Program Management Support.
- 10000 Initiate assessment/development of WIN-Tactical architecture.

Total 15075

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	0	0	0	0
Appropriated Value	0	0	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR/STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	0	0	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	15075	0
Current Budget Submit (FY 2002/2003 PB )	0	0	15075	0

New Start program established since the FY01 President's Budget.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603782A - WARFIGHTER INFORMATION  
NETWORK-TACTICAL - DEM/VAL**

PROJECT  
**355**

<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA, SSN B79100 - Starts in FY 2008	0	0	0	0	0	0	0	0	0	0

**D. Acquisition Strategy:** The proposed WIN-Tactical program consists of three separate, but linked contracts/phases: Phase I - Includes awarding dual System Integration contracts, down selecting to a single contracting team for the System Demonstration Phase, followed by a Full Rate Production Contract. The System Integration contracts will consist of a nominal 16 month effort with two competitively selected contractors. WIN-Tactical System architecture will be defined, modeling and simulations will assess performance, and technology risks will be measured and assessed. In Phase II this data will support the Government's decision to enter System Demonstration and Production. The Government plans to award separate but linked follow-on contracts for System Demonstration and a Full Rate Production Contract. The System Demonstration contract will be competitively awarded to one of the two System Integration contractors. The System Demonstration award will consist of a nominal 27 month effort, including the manufacturing and delivery of test units to support the Development Test and Evaluation (DT&E) and Initial Operational Test and Evaluation (IOT&E) efforts. The contractor will deliver final performance specifications and technical documentation which will define the performance baseline for production hardware. Upon successful completion of the System Demonstration phase, Phase III will be implemented with a Full Rate Production Contract awarded to the System Demonstration contractor. The Production Contract, scheduled for FY 2008, will provide procurement funding for the purchase of unit sets, and includes unit set fielding and training, as well as enhancements.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Acquisition Strategy approved			1Q	0	0	0	0	0
Develop System Integration Request for Proposal (RFP)			1-2Q	0	0	0	0	0
RFP Release System Integration			2Q	0	0	0	0	0
Conduct Source Selection and Evaluation Board (SSEB) for System Integration Contract			2-3Q	0	0	0	0	0
Milestone B decision			3Q	0	0	0	0	0
System Integration Contract			3-4Q	0	0	0	0	0
Develop RFP Documentation for System Demonstration			0	0	0	0	0	0
Conduct SSEB for System Demonstration Contract			0	0	0	0	0	0
System Demonstration Contract			0	0	0	0	0	0
Development Test & Evaluation			0	0	0	0	0	0
New Equipment Training			0	0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>4 - DEM/VAL</b>	PE NUMBER AND TITLE <b>0603782A - WARFIGHTER INFORMATION                  NETWORK-TACTICAL - DEM/VAL</b>	PROJECT <b>355</b>
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<u>E. Schedule Profile (continued)</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Initial Operational Test and Evaluation (IOT&E)				0	0	0	0	0
Milestone C decision				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603782A - WARFIGHTER INFORMATION**  
**NETWORK-TACTICAL - DEM/VAL**

**PROJECT**  
**355**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Architecture	FFP	TBD	0	0		10000	3Q	0	0	0	0	0
<b>Subtotal:</b>			0	0		10000		0		0	0	0

Remarks: MIPR - Military Interdepartmental Purchase Request  
FFP - Firm Fixed Price

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . WIN-Tactical Architecture Studies	MIPRs	MISC	0	0		1100	1Q	0	0	0	0	0
<b>Subtotal:</b>			0	0		1100		0		0	0	0

Remarks: Support costs include: Frequency Availability Analysis; OPNET; and Protection Profile Plan and related security requirements.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603782A - WARFIGHTER INFORMATION**  
**NETWORK-TACTICAL - DEM/VAL**

**PROJECT**  
**355**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Documentation Preparation & PM Support	MIPRs	MISC	0	0		1475	1-4Q	0	0	0	0	0
b . Source Selection Evaluation Board	MIPRs	MISC	0	0		2500	2Q	0	0	0	0	0
Subtotal:			0	0		3975		0		0	0	0

Remarks: Document preparation and PM Support includes government and contractual elements associated with the System Integration and System Demonstration Phases.

Project Total Cost:			0	0		15075		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> 4 - DEM/VAL			<b>PE NUMBER AND TITLE</b> 0603790A - NATO RESEARCH AND DEVELOPMENT						<b>PROJECT</b> 691	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
691 NATO RSCH & DEVEL	1808	1902	8633	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE:** This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

This program implements the provisions of Title 10 U.S. Code, Section 2350a, Cooperative Research and Development (R&D) Projects: Allied Countries. The objective is to improve, through the application of emerging technologies, the conventional defense capabilities of the United States, the North Atlantic Treaty Organization (NATO), and U.S. major non-NATO allies. This program element only funds the U.S. equitable share of the cooperative R&D project spent in the U.S. Projects are implemented with the allied partners through international agreements which define the scope, cost and work sharing arrangements, management, contracting, security, data protection and third party transfers. By technology sharing the program jointly develops equipment with our allies to improve operational efforts by achieving multi-national force compatibility through the use of similar equipment and improved interfaces. Funds support all the R&D costs including the identification of cooperative opportunities and administration of the program. All funds are used to pay for the U.S. work share in the United States at U.S. Government and U.S. contractor's facilities. This program focuses on international cooperative technology demonstration, validation, and interoperability of the Battlefield Combat Identification System, Force XXI Battle Command Brigade and Below (FBCB2)/Appliqué Systems, Adaptive Digital Beamforming for THAAD radars, helicopter helmet mounted displays, military network switching, Patriot Tactical Operations Center, improved combat vehicle propulsion, missile seeker electronic countermeasures, eyesafe laser radar, artillery command and control, standoff chemical detectors, kinetic energy penetrators, and signal jamming subsystems. The final program will be reported separately as required by 10 USC 2350a(f).

**FY 2000 Accomplishments**

- 1180 Artillery System Cooperation Activities (ASCA) (Partners: France, Germany, United Kingdom): Developed common interface requirements for Allied Field Artillery Command and Control Systems and conducted field demonstration(s) for interoperability between AFATDS and Allies' systems.
- 328 Electro-thermal Chemical (ETC) Gun Technologies for Future Military Vehicle Systems (Partner: Germany): Seeking to jointly advance ETC gun technologies, and demonstrate feasibility of future large caliber ETC guns. Will be conducted based on sub-scale and full-scale experimental results and analysis tools.
- 300 International Agreement Tracking System (IATS) Development and Implementation, NATO R&D Policy Development, and Report to Congress Pursuant to 10 USC 2350a, prepare and provide to USD(A&T) the Army section of the 2000 Report to Congress on the International Cooperative Research and Development Program.

Total 1808

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)****June 2001**

BUDGET ACTIVITY

**4 - DEM/VAL**

PE NUMBER AND TITLE

**0603790A - NATO RESEARCH AND  
DEVELOPMENT**

PROJECT

**691****FY 2001 Planned Program**

- 1006 Multilateral Interoperability Program (MIP) (Partners: Germany, France, United Kingdom, Canada, Italy): Continue integration work from the Command and Control Systems Interoperability Program (C2SIP) into an Advanced Concept Technology Demonstration (ACTD) to achieve NATO levels four (messaging) and five (database) interoperability and also extends the effort into a sustainable program to incorporate lessons learned into national systems. Extends participation to include Canada and Italy.
- 410 Electro-thermal Chemical (ETC) Gun Technologies for Future Military Vehicle Systems (Partner: Germany): Seeking to jointly advance ETC gun technologies, and demonstrate feasibility of future large caliber ETC guns. Will be conducted based on sub-scale and full-scale experimental results and analysis tools.
- 310 International Agreement Tracking System (IATS) Development and Implementation, NATO R&D Policy Development, and Report to Congress Pursuant to 10 USC 2350a, prepare and provide to USD(A&T) the Army section of the 2001 Report to Congress on the International Cooperative Research and Development Program.
- 120 Intense Laser Pulse Propagation in the Atmosphere (ILPPA) (Partner: Canada): Will jointly develop a solution to the problem of transporting intense laser pulses over long distances in the atmosphere to induce strong non-wavelength specific fluorescence on target for remote sensing. Will conduct experiments to validate propagation mostly in Canada, and conduct simulation and modeling in the U.S.
- 56 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 1902

**FY 2002 Planned Program**

- 1043 Multilateral Interoperability Program (MIP) (Partners: Germany, France, United Kingdom, Canada, Italy): Continue integration work from the Command and Control Systems Interoperability Program (C2SIP) into an Advanced Concept Technology Demonstration (ACTD) to achieve NATO levels four (messaging) and five (database) interoperability and also extends the effort into a sustainable program to incorporate lessons learned into national systems.
- 630 TACJAM-A Electronic Support Subsystem Upgrades (Partner: United Kingdom): Continue development of an advanced penetrator, and potentially a common cartridge, to defeat modern tanks equipped with Kinetic Energy - Explosively Reactive Armor.
- 500 Focal Plane Array Countermeasures (FPACM) (Partner: United Kingdom): Characterize and assess advanced focal plane array missile seekers and develop electronic countermeasures (ECM) to defeat them through simulation, modeling, and lab testing.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603790A - NATO RESEARCH AND DEVELOPMENT**

PROJECT  
**691**

**FY 2002 Planned Program (Continued)**

- 410 Electro-thermal Chemical (ETC) Gun Technologies for Future Military Vehicle Systems (Partner: Germany): Seeking to jointly advance ETC gun technologies, and demonstrate feasibility of future large caliber ETC guns. Will be conducted based on sub-scale and full-scale experimental results and analysis tools.
  - 120 Intense Laser Pulse Propagation in the Atmosphere (ILPPA) (Partner: Canada): Will jointly develop a solution to the problem of transporting intense laser pulses over long distances in the atmosphere to induce strong non-wavelength specific fluorescence on target for remote sensing. Will conduct experiments to validate propagation mostly in Canada, and conduct simulation and modeling in the U.S.
  - 1500 Techniques for Active Defense (TAD) (Partner: United Kingdom): Cooperative efforts to define short-range air and missile defense requirements to include generic threat definition and defended footprint parameters. Will cooperatively develop and evaluate a point design, and SMDC is also designing and fabricating a testbed.
  - 400 Simulation and Command and Control (C2) Information System Connectivity Experimentation (SINCE) (Partner: Germany): Defining and demonstrating a generic solution for interfacing and networking Brigade/Battalion (BDE/BN) Command and Control Information Systems (C2IS) and applicable Modeling and Simulation (M&S) systems as required to support Coalition Force collaborative Mission Management experimentation.
  - 1500 Automated Identification Technology for Asset Tracking/Total Asset Visibility (TAV) (Partner: United Kingdom): Asset Tracking Data System will allow seamless tracking and identification of US and UK materiel shipment/consignments and will significantly enhance US coalition warfare capabilities.
  - 500 Senior National Representatives (Army)/International Cooperative Opportunities Projects (Partners: France, Germany, United Kingdom, Italy): Supporting harmonization of programs at various levels; exchanging information, identifying knowledge gaps to further promote cooperative development; standardizing, fielding and roadmapping various processes; distributing the workload among the different nations.
  - 330 International Agreement Tracking System (IATS) Development and Implementation, NATO R&D Policy Development, and Report to Congress Pursuant to 10 USC 2350a, prepare and provide to USD(A&T) the Army section of the 2002 Report to Congress on the International Cooperative Research and Development Program.
  - 1200 Technology Research and Development Projects (Partners: United Kingdom, Germany, France, Canada, Australia, Netherlands, Korea, Norway): The scope of this MOU encompasses R&D collaboration on basic, exploratory and advanced technologies, the maturation of which may lead to the development of technologically superior conventional weapon systems.
  - 500 Engineer and Scientist Exchange Program (Partner: Major NATO Allies): Supports and facilitates cooperation by expanding the MOU participants' knowledge of each others' research, development and acquisition process.
- Total 8633

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603790A - NATO RESEARCH AND DEVELOPMENT**

PROJECT  
**691**

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	1858	1920	8594	0
Appropriated Value	1872	1920	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-50	0	0	0
c. Omnibus or Other Above Threshold Reduction	-8	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-6	-18	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	39	0
Current Budget Submit (FY 2002/2003 PB )	1808	1902	8633	0

**C. Other Program Funding Summary:** None

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603790A - NATO RESEARCH AND DEVELOPMENT**

PROJECT  
**691**

**D. Acquisition Strategy:** All projects are test or technical demonstrations to feed into potential new requirements or as product improvements (such as the Adaptive Beamforming Technology insertion project), or to introduce interoperability into existing systems (such as the Combat Identification project).

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Multilateral Interoperability Program (MIP)				0	0	0	0	0
Complete Lab Demo/Tests & Simulations	4Q			0	0	0	0	0
Complete C2SIP ATCD		3Q		0	0	0	0	0
Complete Integration into MCS			3Q	0	0	0	0	0
Focal Plane Array Countermeasures				0	0	0	0	0
Develop Advanced CM Model		3Q		0	0	0	0	0
Complete Testing of Advanced CM Model			3Q	0	0	0	0	0
Artillery Systems Cooperation Activity				0	0	0	0	0
Complete Phase I Operational Tests	2Q			0	0	0	0	0
Complete Phase II Tests		3Q		0	0	0	0	0
TACJAM-A				0	0	0	0	0
Complete Systems Integration	3Q			0	0	0	0	0
Complete Development Testing		4Q		0	0	0	0	0
Complete Operational Testing			3Q	0	0	0	0	0
Electro-Thermal Chemical (ETC)				0	0	0	0	0
Component Development and Testing	4Q			0	0	0	0	0
Sub-system Development and Testing		4Q		0	0	0	0	0
Fabricate ETC Gun Module			4Q	0	0	0	0	0
Complete System Test and Report				0	0	0	0	0
Intense Laser Pulse Propagation in the Atmosphere (ILPPA)				0	0	0	0	0
Component Development	4Q			0	0	0	0	0
Complete Modeling and Simulation		4Q		0	0	0	0	0
Complete Testing and Experimentation			4Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603790A - NATO RESEARCH AND DEVELOPMENT**

**PROJECT**  
**691**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Multilateral Interoperability Program (MIP)	CPFF	C3S, CSC Fort Washington, PA	0	745		700		0	0	0	0	0
b . Electro-Thermal Chemical (ETC) Gun - Munitions & Propellants	TBD	UDLP Minneapolis, MN	0	287		0		0	0	0	0	0
c . International Agreement Tracking System (IATS) - Software Development	TBD	JIL Information Systems Vienna, VA	0	217		234		0	0	0	0	0
d . Intense Laser Pulse Propagation in the Atmosphere (ILPPA) - Sensors	TBD	TBD	0	80		84		0	0	0	0	0
e . Automated Identification Technology for Asset Tracking/Total Asset Visibility (TAV) - Software	TBD	TBD	0	0		1050		0	0	0	0	0
f . Engineer-Scientist Exchange Program (ESEP)	TBD	TBD	0	0		350		0	0	0	0	0
g . TACJAM-A - Sensors	TBD	TBD	0	0		481		0	0	0	0	0
h . Focal Plane Array Countermeasures (FPACM) - Sensors	TBD	GTRI Atlanta, GA	0	0		350		0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603790A - NATO RESEARCH AND DEVELOPMENT**

**PROJECT**  
**691**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
i . Techniques for Active Defense (TAD) - Missile Defense	TBD	TBD	0	0		1250		0	0	0	0	0
j . Simulation & C2 Information System Connectivity Experimentation (SINCE) - C2 Systems	TBD	TBD	0	0		280		0	0	0	0	0
k . Senior National Representatives (Army) (SNR[A])	TBD	TBD	0	0		350		0	0	0	0	0
l . TRDP	TBD	TBD	0	0		924		0	0	0	0	0
Subtotal:			0	1329		6053		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603790A - NATO RESEARCH AND DEVELOPMENT**

**PROJECT  
691**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MIP	MIPR	CECOM Ft. Monmouth, NJ	0	160		150		0	0	0	0	0
b . ETC Gun	MIPR	TACOM, Warren, MI	0	62		62		0	0	0	0	0
c . IATS	MIPR	TBD	0	47		50		0	0	0	0	0
d . ILPPA	MIPR	AMCOM, Redstone Arsenal, AL	0	18		18		0	0	0	0	0
e . Automated Identification Technology for Asset Tracking/TAV	MIPR	LOGSA	0	0		225		0	0	0	0	0
f . ESEP	MIPR	TBD	0	0		75		0	0	0	0	0
g . TACJAM-A	MIPR	CECOM Ft. Monmouth, NJ	0	0		95		0	0	0	0	0
h . FPACM	MIPR	CECOM Ft. Monmouth, NJ	0	0		75		0	0	0	0	0
i . TAD	MIPR	AMCOM, Redstone Arsenal, AL	0	0		225		0	0	0	0	0
j . Simulation and C2 Information System Connectivity Experimentation (SINCE)	MIPR	CECOM Ft. Monmouth, NJ	0	0		60		0	0	0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603790A - NATO RESEARCH AND DEVELOPMENT**

**PROJECT**  
**691**

II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . SNR(A)	MIPR	TBD	0	0		75		0	0	0	0	0
l . TRDP	MIPR	TBD	0	0		180		0	0	0	0	0
Subtotal:			0	287		1290		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MIP	MIPR	CECOM Ft Monmouth, NJ	0	106		100		0	0	0	0	0
b . ETC Gun	MIPR	Aberdeen Proving Ground, NJ	0	41		41		0	0	0	0	0
c . IATS	MIPR	TBD	0	31		33		0	0	0	0	0
d . ILPPA	MIPR	White Sands Missile Range, NM	0	12		12		0	0	0	0	0
e . Automated Identification Technology for Asset Tracking/TAV	MIPR	AMSAA, Aberdeen Proving Ground, NJ	0	0		150		0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603790A - NATO RESEARCH AND DEVELOPMENT**

**PROJECT  
691**

III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
f. ESEP	MIPR	TBD	0	0		50		0	0	0	0	0
g. TACJAM-A	MIPR	White Sands Missile Range, NM	0	0		63		0	0	0	0	0
h. FPACM	MIPR	White Sands Missile Range, NM	0	0		50		0	0	0	0	0
i. TAD	MIPR	White Sands Missile Range, NM	0	0		150		0	0	0	0	0
j. Simulation and C2 Information System Connectivity Experimentation (SINCE)	MIPR	CECOM Ft Monmouth, NJ	0	0		40		0	0	0	0	0
k. SNR(A)	MIPR	TBD	0	0		50		0	0	0	0	0
l. TRDP	MIPR	TBD	0	0		120		0	0	0	0	0
Subtotal:			0	190		859		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603790A - NATO RESEARCH AND DEVELOPMENT**

**PROJECT  
691**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MIP	MIPR	PEO C3S, Ft. Monmouth, NJ	0	53		50		0	0	0	0	0
b . ETC Gun	MIPR	PEO GCSS	0	21		21		0	0	0	0	0
c . IATS	MIPR	TBD	0	16		17		0	0	0	0	0
d . ILPPA	MIPR	AMCOM, Redstone, AL	0	6		6		0	0	0	0	0
e . Automated Identification Technology for Asset Tracking/TAV	MIPR	LOGSA	0	0		75		0	0	0	0	0
f . ESEP	MIPR	TBD	0	0		25		0	0	0	0	0
g . TACJAM-A	MIPR	PEO IEW	0	0		32		0	0	0	0	0
h . FPACM	MIPR	Army Research Lab	0	0		25		0	0	0	0	0
i . TAD	MIPR	PEO MD, Redstone Arsenal, AL	0	0		75		0	0	0	0	0
j . Simulation and C2 Information System Connectivity Experimentation (SINCE)	MIPR	CECOM, Ft. Monmouth, NJ	0	0		20		0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603790A - NATO RESEARCH AND DEVELOPMENT**

**PROJECT**  
**691**

IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . SNR(A)	MIPR	TBD	0	0		25		0	0	0	0	0
1. TRDP	MIPR	TBD	0	0		60		0	0	0	0	0
Subtotal:			0	96		431		0		0	0	0
<b>Project Total Cost:</b>			<b>0</b>	<b>1902</b>		<b>8633</b>		<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
**0603801A - Aviation Advanced Development**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	8455	9757	9105	0	0	0	0	0	0	0
B32 ADV MAINT CONCEPTS/EQ	2908	3006	3432	0	0	0	0	0	0	0
B33 CARGO HANDLING & MISSION SPT	2683	2788	2996	0	0	0	0	0	0	0
B45 AIRCREW INTEGRATED SYS-AD	2864	3963	2677	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This PE provides advanced development aviation support of tactical programs associated with air mobility, advanced maintenance concepts and equipment, and Aircrew Integrated Systems (ACIS).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
0603801A - Aviation Advanced Development

<u>B. Program Change Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	8655	5848	9071	0
Appropriated Value	8746	9848	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-200	0	0	
c. Omnibus or Other Above Threshold Reductions	-31	0	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	-60	-91	0	
Adjustments to Budget Years Since FY2001 PB	0	0	34	
Current Budget Submit (FY 2002/2003 PB )	8455	9757	9105	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603801A - Aviation Advanced Development**

PROJECT  
**B32**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
B32 ADV MAINT CONCEPTS/EQ	2908	3006	3432	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This program element enhances utilization of current and future aircraft by improving the efficiency of maintenance and servicing operations by validating new maintenance concepts to improve man machine interface, enhance aircraft maintenance processes and reduce operation and support costs. Included in the project are elements such as: Portable Maintenance Aids (PMA), database management software, on-board diagnostics, health/usage monitoring systems, trending analysis, automated data collection and migration, business process reengineering, software integration, and support infrastructure analysis. This program element will also provide evaluation of the feasibility for the advanced maintenance aid that will improve isolation of faulty components on Army helicopters, initiate automated configuration management efforts, engine diagnostics efforts and test wireless sensors for Army aircraft. The most promising concepts/evaluations will be pursued. These efforts will significantly enhance aviation asset availability and flight safety. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan.

**FY 2000 Accomplishments**

- 1136 Detailed design and algorithm completed for Structural Usage Monitoring System (SUMS).
  - 598 Continued preliminary design and developed methodology and algorithms for the Army Diagnostic & Engine Prognostics Technology (ADEPT).
  - 490 Evaluated parts marking and tracking technology for the Aviation Parts Marking Demonstration (APMD) program.
  - 684 Continued Digital Aviation Logistics (DAL) program to develop an overall maintenance system architecture and methodology.
- Total 2908

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

4 - DEM/VAL

PE NUMBER AND TITLE

0603801A - Aviation Advanced Development

PROJECT

B32

## FY 2001 Planned Program

- 422 Complete program definition/risk reduction of SUMS.
- 754 Complete program definition/risk reduction of ADEPT.
- 405 Mark parts and perform flight analysis to validate APMD.
- 298 Complete DAL maintenance system definition.
- 343 Initiate integrated engine diagnostics.
- 714 Management Support Services.
- 70 Small Business Innovative Research (SBIR)/ Small Business Technology Transfer Program (STTR)

Total 3006

## FY 2002 Planned Program

- 385 Initiate effort to develop a wireless sensor application for aircraft.
- 891 Continue integrated engine diagnostics to begin interface definition for the use of on-board engine data to isolate suspect components on engines.
- 426 Develop advanced maintenance aid that will improve isolation of faulty components on Army helicopters.
- 501 Initiate automated configuration management effort.
- 900 Management Support Services.
- 329 Advanced Maintenance Concepts

Total 3432



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>4 - DEM/VAL</b>	PE NUMBER AND TITLE <b>0603801A - Aviation Advanced Development</b>	PROJECT <b>B32</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Aircraft Procurement, Army(APA) SSN AZ3100	12351	11817	19113	0	0	0	0	0	0	0

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

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
SUMS				0	0	0	0	0
Develop Algorithms	2Q			0	0	0	0	0
Program Definition/Risk Reduction		2-4Q		0	0	0	0	0
ADEPT				0	0	0	0	0
Develop Algorithms	3Q			0	0	0	0	0
Program Definition/Risk Reduction		3-4Q		0	0	0	0	0
Aviation Parts Marking Demonstration				0	0	0	0	0
Select Parts to Be Marked	3Q			0	0	0	0	0
Evaluate Marking Technologies	4Q			0	0	0	0	0
Mark Parts		3Q		0	0	0	0	0
Digital Aviation Logistics (DAL)				0	0	0	0	0
Define Automated Maint. Mgmt System	1Q			0	0	0	0	0
Define Sustainment Base Info. Sys. Reqs.	3Q			0	0	0	0	0
Complete DAL Maintenance System Definition		2Q		0	0	0	0	0
Wireless Aircraft Sensors				0	0	0	0	0
Develop Sensor Application			2-4Q	0	0	0	0	0
Bench Test				0	0	0	0	0
Integrated Engine Diagnostics				0	0	0	0	0
Modify JAHUMS Engine Model		3Q		0	0	0	0	0
Interface with ATEDS			2-4Q	0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603801A - Aviation Advanced Development**

PROJECT  
**B32**

<b><u>D. Schedule Profile (continued)</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Flight Analysis				0	0	0	0	0
Automated Configuration Management				0	0	0	0	0
Initiate Management Methodology			2-3Q	0	0	0	0	0
Identify Aircraft Interface Requirements				0	0	0	0	0
Advanced Maintenance Aid				0	0	0	0	0
Define System and Develop Methodology			2-4Q	0	0	0	0	0
Develop Algorithms				0	0	0	0	0
Advanced Maintenance Concepts				0	0	0	0	0
Initiate Development of Advanced Maintenance Concepts			2-4Q	0	0	0	0	0
Continue Development of Advanced Maintenance Concepts				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603801A - Aviation Advanced Development**

**PROJECT**  
**B32**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . SUMS	SS/CPFF	The Boeing Company, Mesa, AZ	1901	422	2Q	0		0	0	0	0	0
b . ADEPT	CA/CR	Allied Signal, Tempe, AZ	823	754	3Q	0		0	0	0	0	0
c . APMD	SS/CPFF	The Boeing Company, Philadelphia, PA	490	405	3Q	0		0	0	0	0	0
d . DAL	CA/CR	Rita, Easton, MD	1764	298	2Q	0		0	0	0	0	0
e . Wireless Aircraft Sensors	C/CPFF	TBD	0	0		385	2Q	0	0	0	0	0
f . Int. Eng. Diag.	SS/CPFF	The Boeing Company, Mesa, AZ	0	343	3Q	891	2Q	0	0	0	0	0
g . Adv. Maint. Aid	C/CPFF	TBD	0	0		426	2Q	0	0	0	0	0
h . Automated Config. Maint.	C/CPFF	TBD	0	0		501	2Q	0	0	0	0	0
i . Advanced Maintenance Concepts	C/CPFF	TBD	0	0		329	2Q	0	0	0	0	0
Subtotal:			4978	2222		2532		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603801A - Aviation Advanced Development**

**PROJECT**  
**B32**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Technical Engineering Services	MIPR	AATD	0	560	2Q	580	2Q	0	0	0	0	0
Subtotal:			0	560		580		0		0	0	0

Remarks: None

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: None

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603801A - Aviation Advanced Development**

**PROJECT**  
**B32**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Support	C/FP	TBD	0	0		160	2Q	0	0	0	0	0
b . Program Management In-House			0	154		160		0	0	0	0	0
c . SBIR/STTR			0	70		0		0	0	0	0	0
Subtotal:			0	224		320		0		0	0	0

Remarks: None

Project Total Cost:			4978	3006		3432		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603801A - Aviation Advanced Development**

PROJECT  
**B33**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
B33 CARGO HANDLING & MISSION SPT	2683	2788	2996	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project explores, develops and integrates affordable ground support equipment and diagnostic technologies to replace obsolete and unsupportable ground support equipment and diagnostic procedures with new and standardized equipment and diagnostics that are compatible with all Army aircraft models; develops rapid battle repair procedures and tools to speed the return of aircraft to combat ready status; develops new equipment for aerial recovery of damaged aircraft, and develops equipment and procedures for improvement of loading, transport, and off-loading of helicopter cargo. FY02/03 completes prototyping, design refinement and testing of critical ground support systems in preparation for a Milestone III decision. Funds for the high-capacity external cargo winches, remote external cargo monitoring and other efforts. Addressing priority AGSE will allow the PM to initiate the acquisition process and development of the prototype systems. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan.

**FY 2000 Accomplishments**

- 577 Completed the detail design of Aviation Turbine Engine Diagnostics System (ATEDS) hardware and initiated coding of fault logic.
- 185 Identified and prioritized performance requirements for the New Aviation Ground Power System (NAPS).
- 290 Initiated hub stress analyses for Army aircraft to be hoisted by the Unit Maintenance Aerial Recovery Kit (UMARK).
- 407 Developed and fabricated prototype Corrosion Environment Monitor Sensors (CEMS).
- 89 Completed fabrication of advanced technology prototype for the Aircraft Cleaning and Deicing System (ACDS).
- 596 Initiate process to utilize engine data to isolate suspect components.
- 466 Completed preliminary nondevelopmental items (NDI) design objective of Computer-Aided Nondestructive Inspection and Repair Disposition (CANDID) system.
- 73 Completed prototype installation of Advanced Cargo Handling System (ACHS) in National Guard aircraft.

Total 2683

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603801A - Aviation Advanced Development**

PROJECT  
**B33**

**FY 2001 Planned Program**

- 285 Complete coding of fault logic for Aviation Turbine Engine Diagnostic System (ATEDS).
- 222 Conduct field analysis of the Aircraft Cleaning and Deicing System (ACDS).
- 292 Complete fabrication of New Aviation Ground Power System (NAPS) prototypes.
- 359 Perform flight analysis of Unit Maintenance Aerial Recovery Kit (UMARK) with CH-47 victim aircraft and complete procurement specification in preparation for Milestone III approval.
- 342 Initiate field analysis of prototype Corrosion Environment Monitor Sensors (CEMS).
- 327 Demonstrate (field and bench tests) technologies for utilization of engine data to isolate suspect components.
- 135 Complete the restructured Computer-Aided Nondestructive Inspection and Repair Disposition (CANDID) program and document technology.
- 75 Restore National Guard CH-47D aircraft used for Advanced Cargo Handling System (ACHS) testing to original condition.
- 688 Management Support Services.
- 63 Small Business Innovative Research (SBIR)/ Small Business Technology Transfer Program (STTR)

Total 2788

**FY 2002 Planned Program**

- 239 Complete the prototyping of the Electrical Repair Kit for the enhanced Battle Damage Assessment and Repair (BDAR) program.
- 300 Develop software for Aviation Turbine Engine Diagnostics System (ATEDS).
- 410 Complete field analysis of the Aircraft Cleaning and De-icing System (ACDS) and complete procurement specification in preparation for Milestone III approval.
- 227 Initiate Advanced Lightweight Ground Power Unit design for portable, battlehardened, reliable field power.
- 390 Initiate Advanced Ground Support Equipment effort to apply state-of-the-art technology in the fulfillment of AGSE operational requirements.
- 108 Explore advanced technology in areas of high-capacity external cargo winches and remote external cargo monitoring.
- 297 Initiate evaluation and analysis of New Aviation Ground Power System (NAPS) prototype.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603801A - Aviation Advanced Development**

PROJECT  
**B33**

**FY 2002 Planned Program (Continued)**

- 125 Develop specifications for Digital Aircraft Weight Scales (DAWS).
  - 900 Management Support Services
- Total 2996

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Aircraft Procurement, Army (APA) SSN AZ3100	12351	11817	19113	0	0	0	0	0	0	0

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

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
ACFT TURBINE ENGINE DIAGNOSTIC SYS (ATEDS)				0	0	0	0	0
Detailed Design Review	3Q			0	0	0	0	0
Coding of fault logic		2Q		0	0	0	0	0
Software Development			2-4Q	0	0	0	0	0
Complete Software Development				0	0	0	0	0
AIRCRAFT CLEANING AND DEICING SYSTEM (ACDS)				0	0	0	0	0
Fabrication	4Q			0	0	0	0	0
Analysis		1Q		0	0	0	0	0
Field Analysis		3Q		0	0	0	0	0
Procurement Specification			3Q	0	0	0	0	0
COMPUTER AIDED NONDESTRUCTIVE INSPECTION AND DISPOSITION (CANDID) SYSTEM				0	0	0	0	0
Completed Preliminary Design Objective	4Q			0	0	0	0	0
Final Design Review		3Q		0	0	0	0	0



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603801A - Aviation Advanced Development**

PROJECT  
**B33**

<b>D. Schedule Profile (continued)</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
NEW AVIATION POWER SYSTEM (NAPS)				0	0	0	0	0
Finalize User Requirements	4Q			0	0	0	0	0
Preliminary Design Review		2Q		0	0	0	0	0
Field Analysis			3-4Q	0	0	0	0	0
Field Analysis and Evaluation				0	0	0	0	0
ADVANCED CARGO HANDLING SYSTEM (ACHS)				0	0	0	0	0
Restore A/C to Original Condition		2Q		0	0	0	0	0
Explore Advanced Winch Technology			1-4Q	0	0	0	0	0
Design and Fabricate				0	0	0	0	0
CORROSION ENV.MONITORING SYSTEM (CEMS)				0	0	0	0	0
Fabrication	4Q			0	0	0	0	0
Field Analysis @ Fort Eustis		1Q		0	0	0	0	0
UNIT MAINTENANCE AERIAL RECOVERY KIT (UMARK)				0	0	0	0	0
Initiate Hub Stress Analysis	4Q			0	0	0	0	0
Complete Stress Analysis		1-2Q		0	0	0	0	0
CH-47 Flight Analysis		3Q		0	0	0	0	0
BATTLE DAMAGE ASSESSMENT AND REPAIR (BDAR)				0	0	0	0	0
Prototype Electrical Repair Kits			1-4Q	0	0	0	0	0
Performance Specifications				0	0	0	0	0
ON-BOARD ENGINE DIAGNOSTICS				0	0	0	0	0
Initiate Integration Effort	4Q			0	0	0	0	0
Final Review		2Q		0	0	0	0	0
ADVANCED LIGHTWEIGHT GPU				0	0	0	0	0
Initiate Technology Search			3Q	0	0	0	0	0
Fabrication				0	0	0	0	0
PRIORITY AGSE NEEDS				0	0	0	0	0
Evaluate Soldier Needs				0	0	0	0	0
MODERN TECHNOLOGY AIRCRAFT TUG				0	0	0	0	0
Market Research and Identify				0	0	0	0	0
ADVANCED GROUND SUPPORT EQUIPMENT				0	0	0	0	0
Research User Requirements			3Q	0	0	0	0	0
Design and Fabricate Prototypes				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
**0603801A - Aviation Advanced Development**

PROJECT  
**B33**

<u>D. Schedule Profile (continued)</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
DIGITAL AIRCRAFT WEIGHT SCALES				0	0	0	0	0
Procurement Specifications			2Q	0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603801A - Aviation Advanced Development**

**PROJECT  
B33**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ATEDS	C/CPFF	AlliedSignal, Phoenix, AZ; Allison, Indianapolis, IN; Sikorsky, Stratford, CT	3198	285	2Q	300	2Q	0	0	0	0	0
b . ACDS	C/CPFF	Centech, ArlingtonVA	611	222	1Q	410	3Q	0	0	0	0	0
c . CANDID	SS/CPFF	Boeing, Mesa AZ	1317	135	3Q	0		0	0	0	0	0
d . NAPS	C/CPFF	Rome Labs, Rome,NY	722	292	2Q	297	3Q	0	0	0	0	0
e . ACHS	C/CPFF	In-House, TBD	1202	75	2Q	108	1Q	0	0	0	0	0
f . CEMS (Corrosive Envmt Mtr)	CA	Honeywell; Minneapolis, MN	641	342	1Q	0		0	0	0	0	0
g . UMARK	MIPR	In-house; ATTC, Fort Rucker, AL	1700	359	1Q	0		0	0	0	0	0
h . BDAR	C/CPFF	TBD	0	0		239	1Q	0	0	0	0	0
i . On-Board Diagnostics	C/CPFF	Sikorsky; Stratford, CT	613	327	2Q	0		0	0	0	0	0
j . Advanced Lightweight GPU	C/CPFF	TBD	0	0		227	3Q	0	0	0	0	0
k . Priority AGSE Needs	C/CPFF	TBD	0	0		0		0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603801A - Aviation Advanced Development**

**PROJECT**  
**B33**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
l. Modern Technology Aircraft Tug	C/CPFF	TBD	0	0		0		0	0	0	0	0
m. Advanced Ground Support Equipment	C/CPFF	TBD	0	0		390	3Q	0	0	0	0	0
n. Digital Aircraft Weight Scales	MIPR	AATD	0	0		125	2Q	0	0	0	0	0
Subtotal:			10004	2037		2096		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Technical Engineering Services	MIPR	AATD	0	560	3Q	582	3Q	0	0	0	0	0
Subtotal:			0	560		582		0		0	0	0

Remarks: None

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603801A - Aviation Advanced Development**

**PROJECT**  
**B33**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: None

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Support	C/FP	TBD	0	128	2Q	160	2Q	0	0	0	0	0
b . Program Management In-House			0	0		158		0	0	0	0	0
c . SBIR/STTR			0	63		0		0	0	0	0	0
Subtotal:			0	191		318		0		0	0	0

Remarks: None

Project Total Cost:			10004	2788		2996		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603801A - Aviation Advanced Development**

PROJECT  
**B45**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
B45 AIRCREW INTEGRATED SYS-AD	2864	3963	2677	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Project DB45 - Aircrew Integrated Systems (ACIS) Advanced Development: This project provides advanced development programs for improved aviator safety, survivability, and human performance that amplify the warfighting effectiveness of the Army Transformation aircraft including the RAH-66 Comanche, AH-64 Apache/Longbow, CH-47 Improved Cargo Helicopter, and UH-60 Black Hawk. These programs include those systems and items of equipment that are unique and necessary to the sustainment, survivability, and performance of Army aircrews and troops on the future integrated battlefield and related training missions. Advanced development programs will focus on the development and evaluation of emerging technologies and the adaptation of commercial and nondevelopmental items (NDI) to military requirements. The Air Warrior (AW) program will provide the aircrew with a systems approach to chemical and biological (CB) protection, noise protection, microclimatic conditioning, crash and post-crash survivability, concealment and environmental protection, ballistic protection, night vision capability, heads-up displays, directed energy eye protection, and flame/heat protection. Specifically, Air Warrior will enable the Army Aviation Warfighter to exceed the approved Operational Requirements Document mission length of 5.3 hours of flight operations, as opposed to the 1.6 hours of mission capability that exists today with aviators in full chemical/biological protective gear. The AW design will improve overall aircrew mission performance, aircrew comfort, aircrew and aircrew station interface, safety, and survivability. Advanced development will demonstrate and evaluate emerging technologies for integration into the Air Warrior ensemble through a series of block improvements. The Air Warrior program is a vital soldier system, is linked to the Land Warrior program through the Soldier Systems Capstone Requirements document and is one of the Army's 7 core programs for the objective force. The Virtual Cockpit Optimization Program (VCOP) demonstrates an integrated system providing pilots with improved intuitiveness, sense of awareness, overall aircrew mission performance, aircrew and aircrew station interface, safety, and survivability by providing the pilot with augmented visionics, three-dimensional audio improvements, and visual data regarding aircraft systems status and operation, threat warnings, and improved transition and training of pilots who must operate a number of different aircraft platforms during different missions. This project in this Program Element does not duplicate any aircraft platform program efforts. Both joint and service independent efforts continue to be pursued under the scope of this project. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)****June 2001**

BUDGET ACTIVITY

**4 - DEM/VAL**

PE NUMBER AND TITLE

**0603801A - Aviation Advanced Development**

PROJECT

**B45****FY 2000 Accomplishments**

- 2864 Continued Virtual Cockpit Optimization Program (VCOP) Program Definition and Risk Reduction (PDRR) simulation effort.

Total 2864

**FY 2001 Planned Program**

- 3845 Continue Virtual Cockpit Optimization Program PDRR integrated technologies simulation and demonstration.
- 118 Small Business Innovative Research and Small Business Technology Transfer Program

Total 3963

**FY 2002 Planned Program**

- 2677 Begin advanced development of Air Warrior preplanned Block 2 improvements.

Total 2677

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>4 - DEM/VAL</b>	PE NUMBER AND TITLE <b>0603801A - Aviation Advanced Development</b>	PROJECT <b>B45</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, A PE 0604801A PROJ DC45 - ACIS EMD	13811	11993	2263	0	0	0	0	0	0	0
Aircraft Procurement, Army SSN AZ3110 - ACIS	17167	10294	10253	0	0	0	0	0	0	0

**C. Acquisition Strategy:** DB45 - An Air Warrior Program Definition and Risk Reduction development contract was awarded in FY 97 to perform a functional requirements analysis and consider user requirements and available technologies to optimize recommended alternatives within the constraints of cost as an independent variable. The Air Warrior basic ensemble program was approved to proceed into an engineering manufacturing development system life cycle phase in 1st Quarter, FY 1999. Currently, a combined government and contractor team is developing Air Warrior improvements and integrating those components into a Block I Air Warrior ensemble that will be integrated with the force modernization aircraft. Prototypes will be developed that represent the Block I Air Warrior ensemble for test and evaluation. The Air Warrior aircraft platform specific nonrecurring production engineering will begin during FY 02 in preparation for Block I ensemble production, aircraft integration, and fielding. Beginning in FY 2002, advanced development of preplanned product improvements to the Block I ensemble will integrate joint and new technologies as block improvements to the Air Warrior ensemble. Through a combined government and contractor team, the Virtual Cockpit Optimization Program Definition and Risk Reduction effort will investigate and demonstrate how a future rotary wing crewstation could be crafted to deal effectively with information overload on the digital battlefield. This effort also investigates the use of this technology in other crew stations, like the Future Combat System.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Air Warrior System Preliminary Design Review	4Q			0	0	0	0	0
Air Warrior System Critical Design Review		2Q		0	0	0	0	0
Begin Air Warrior System Test		3Q		0	0	0	0	0
Begin Air Warrior System Operational Test			1Q	0	0	0	0	0
Begin Air Warrior nonrecurring production engineering integration into aircraft platforms			2Q	0	0	0	0	0
Air Warrior basic ensemble Milestone III				0	0	0	0	0
Advanced Development of Air Warrior Block improvements			1Q	0	0	0	0	0
Engineering Manufacturing Development of Air Warrior Block improvements				0	0	0	0	0
VCOP components demonstration in Advanced Prototyping Engineering Experimentation (APEX) simulator	4Q	3Q		0	0	0	0	0



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603801A - Aviation Advanced Development**

**PROJECT**  
**B45**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Air Warrior Block improvements Advanced Development	SS-CPFF	Various	0	0		2157	2Q	0	0	0	0	Continue
b . Virtual Cockpit Optimization Program Advanced Development	SS-CPFF	Microvision, Seattle, WA	3902	2978	2Q	0		0	0	0	0	0
c . Small Business Innovation Research and Small Business Technology Transfer Program			0	118		0		0	0	0	0	0
<b>Subtotal:</b>			3902	3096		2157		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603801A - Aviation Advanced Development**

**PROJECT**  
**B45**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	Various Government	1119	807	1-4Q	100	1-4Q	0	0	0	0	Continue
Subtotal:			1119	807		100		0		0	0	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Air Warrior Block improvements demonstration and validation	MIPR	Various Government Agencies	83	0		300	3Q	0	0	0	0	Continue
b . Virtual Retinal Display Demonstration and Validation	MIPR	Various Government Agencies	512	0		0		0	0	0	0	0
c . VCOP			90	0		0		0	0	0	0	0
Subtotal:			685	0		300		0		0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603801A - Aviation Advanced Development**

**PROJECT**  
**B45**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Administration	Allotment	Various Government	30	60	1-4Q	120	1-4Q	0	0	0	0	Continue
Subtotal:			30	60		120		0		0	0	Continue
<b>Project Total Cost:</b>			5736	3963		2677		0		0	0	Continue

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
0603802A - WEAPONS & MUNITIONS - ADV DEV

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	14874	35847	31670	0	0	0	0	0	0	0
066 SHOULDER-LAUNCHED MULTIPURPOSE ASSAULT WEAPON	2864	0	0	0	0	0	0	0	0	0
AS2 SMALL ARMS IMPROVEMENT	1691	2767	1430	0	0	0	0	0	0	0
AS3 OBJECTIVE INDIVIDUAL COMBAT WEAPON (OICW) PD/RR	10319	33080	30240	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element addresses the modernization of existing Small Arms Weapon systems. This program develops existing and emerging technology to enhance lethality, target acquisition, fire control, training effectiveness and reliability for small arms weapon systems and munitions. It also supports development of the Objective Individual Combat Weapon (OICW) which represents the next generation individual soldier's weapon and provides the soldier with significant increases in individual weapon performance. In addition, it supports development of the Shoulder-Launched Multipurpose Assault Weapon in FY01 and the Mortar Systems in FY02 and FY03. These systems support the Legacy and Objective transition paths of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603802A - WEAPONS & MUNITIONS - ADV DEV**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	4681	28679	10148	0
Appropriated Value	4751	36179	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-126	0	0	
c. Omnibus or Other Above Threshold Reductions	-19	0	0	
d. Reprogrammings	10319	0	0	
e. Rescissions	-51	-332	0	
Adjustments to Budget Years Since FY2001 PB	0	0	21522	
Current Budget Submit (FY 2002/2003 PB )	14874	35847	31670	0

**Change Summary Explanation:**

FY00/02/03 funds were realigned from EMD PE 0604802A/D134, Objective Individual Combat Weapn (OICW), to PE 0603802A/DAS3, to conduct Program Definition and Risk Reduction (PDRR) efforts.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603802A - WEAPONS & MUNITIONS - ADV DEV**      PROJECT  
**066**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
066      SHOULDER-LAUNCHED MULTIPURPOSE ASSAULT WEAPON	2864	0	0	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Bunker Defeat Munition (BDM) Shoulder-launched Multipurpose Assault Weapon - Disposable (SMAW-D) is being acquired to meet an urgent FORSCOM requirement to fill the "Bunker Buster" void in the Army inventory. The system is effective against various targets including earth and timber bunkers, masonry walls and light armored vehicles at ranges of 15-500 meters. Currently, the system cannot be fired from enclosed spaces. This effort will be to determine the feasibility of adapting the SMAW-CS (Confined Space) propulsion concept developed by Talley Defense Systems, Mesa, AZ, for the U.S. Marine Corps to the SMAW-D. The USMC program has been continually funded since FY 1997.

**FY 2000 Accomplishments**

- 375      Conduct feasibility study adapting SMAW-CS to BDM CS
  - 218      Initiate engineering analysis and support
  - 175      Component testing and evaluation
  - 50        Conduct modeling and simulation
  - 500      Fabricate prototypes
  - 671      Continue feasibility study
  - 150      Conduct limited test and evaluation
  - 725      Continue to provide engineering support and analysis
- Total    2864

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
**0603802A - WEAPONS & MUNITIONS - ADV DEV**      PROJECT  
**066**

**FY 2001 Planned Program**

Project not funded in FY01.

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

Not applicable.

**C. Acquisition Strategy:** The BDM SMAW-D was Type Classified Limited Procurement in 4QFY94 and was Full Materiel Released in 1QFY00. A sole source Firm Fixed Price contract will be awarded to the contractor to conduct a feasibility study to adapt USMC Confined Space technology to the BDM resulting in a product improved version which would be able to be fired from enclosed spaces. Additional funding would be required to qualify the system and provide for Type Classification.

<b><u>D. Schedule Profile</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Initiate BDM CS Study	2Q			0	0	0	0	0
Conclude Feasibility Study		4Q		0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603802A - WEAPONS & MUNITIONS - ADV DEV**

**PROJECT**  
**066**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Concept Study	FFP	Talley Defense Systems	2000	0		0		0	0	0	0	0
Subtotal:			2000	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering Support		ARDEC	683	0		0		0	0	0	0	0
Subtotal:			683	0		0		0		0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603802A - WEAPONS & MUNITIONS - ADV DEV**

**PROJECT**  
**066**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Support		TECOM	200	0		0		0	0	0	0	0
Subtotal:			200	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			2883	0		0		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603802A - WEAPONS & MUNITIONS - ADV DEV**      PROJECT  
**AS2**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
AS2      SMALL ARMS IMPROVEMENT	1691	2767	1430	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project element addresses the modernization of existing Small Arms Weapon systems. The existing Small Arms Weapon Systems support the Army Transformation Campaign Plan and will be utilized by legacy, interim and objective forces. This program provides funds to develop existing and emerging technology to enhance lethality, target acquisition, fire control, training effectiveness and reliability for small arms weapon systems and munitions. Current small arms include a variety of personal defense weapons (.38 caliber, .45 caliber; 9mm), individual weapons (5.56mm), crew-served weapons (5.56mm-40mm) and related equipment such as fire control, training devices, hand grenades and ammunition. Current efforts focus on improvements to the M249 Squad Automatic Weapon, M16/M4 Rifle, M203 Grenade Launcher, MK19 Grenade Machine Gun and M240B Medium Machine Gun and hand grenades.

**FY 2000 Accomplishments**

- M249 MG Barrel Life Extension Program
- 50      Prototype Model Definition/Market Survey/Prototype Model Evaluation
- 50      Requirements Definition and Specification
- 180      Feasibility Study
- 20      Evaluation of Study
- M203 Upgrade
- 251      Technical Assessments
- 150      Trade-off Analysis
- 59      Defined Work Packages
- M249 Short Range Training Ammo
- 50      Market/Survey/Program Documentation
- 100      MS B Packages

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

4 - DEM/VAL

PE NUMBER AND TITLE

0603802A - WEAPONS & MUNITIONS - ADV DEV

PROJECT

AS2

## FY 2000 Accomplishments (Continued)

- 50 Procurement Package
- 50 Technical Evaluation/Negotiations
- 50 Best & Finals/Source Selection
- 150 Prepared Temp & Acquisition Strategy  
M240 Weight Reduction
- 59 Established Parameters
- 88 Survey Materials
- 47 Awarded Trade Off Studies/Analysis Task Order
- 44 Trade Off Analysis
- 243 Fabricated Prototype Hardware

Total 1691

## FY 2001 Planned Program

- M203 Upgrade
- 304 Prototype Development
- 416 Design/Fabricate Hardware
- 150 Test and Simulation  
M249 Short Range Training Ammo
- 250 Contract Award
- 40 Develop and Fabricate Prototype
- 150 Conduct Proof of Principle Test
- 100 Requirements Review/Prepare Performance Spec
- 60 Prepare Technical Assessment  
M240 Weight Reduction

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

4 - DEM/VAL

PE NUMBER AND TITLE

0603802A - WEAPONS & MUNITIONS - ADV DEV

PROJECT

AS2

## FY 2001 Planned Program (Continued)

- 300 Evaluate Alternate Material Receivers
- 158 Trade Off Analysis
- 200 Test and Evaluation
- 210 Material Analysis/Welding
- 116 Demo/Report/MS B  
Family Of Light Weight Hand Grenades
- 75 Prepare Concussion/Mini-Frag Grenades Program Documentation
- 25 Conduct Market Survey
- 75 Prepare Procurement Package-Concussion/Mini-Frag Grenades Concept Development
- 55 Procurement Admin Lead Time (PALT)
- 83 Small Business Innovation Research/Small Business Technology Transfer

Total 2767

## FY 2002 Planned Program

- M203 Upgrade
- 256 Finalize Prototype
- 50 System Demo
- 50 Update Systems Development and Demonstration Plan
- 50 Prepare/Staff IPR Package
- M240 Weight Reduction
- 335 Fabricate Welded Prototypes
- 200 Test and Evaluation
- 75 Systems Demonstration/IPR

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603802A - WEAPONS & MUNITIONS - ADV DEV**

PROJECT  
**AS2**

**FY 2002 Planned Program (Continued)**

Family of Light Weight Hand Grenades

- 54 Award Concussion/Mini-Frag Grenades Concept Development Contract
- 120 Design and Fabricate Prototype
- 190 Proof of Principle Testing
- 50 Final Report

Total 1430

**B. Other Program Funding Summary**

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE 0604802A, Project DAS1	7633	6979	1361	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Primary strategy is to solcitate industry, make technical assessments, trade-off analysis, formulate and refine designs, test and evaluate items, and make determinations as to whether the item should be transitioned into Engineering Development.

**D. Schedule Profile**

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
M249 MG Barrel Life Extension Program				0	0	0	0	0
Prototype Model Definition/Market Survey/Prototype Model Evaluation	2-3Q			0	0	0	0	0
Requirements Definition and Specification	3Q			0	0	0	0	0
Feasibility Study	3-4Q			0	0	0	0	0
Evaluation of Study		1Q		0	0	0	0	0
M203 Upgrade				0	0	0	0	0
Technical Assessments	2-3Q			0	0	0	0	0
Trade-off Analysis	3-4Q			0	0	0	0	0
Define Work Packages	4Q			0	0	0	0	0
Prototype Development		1-2Q		0	0	0	0	0
Design/Fabricate Hardware		1-4Q	1Q	0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603802A - WEAPONS & MUNITIONS - ADV DEV**

PROJECT  
**AS2**

<b>D. Schedule Profile (continued)</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Test and Simulation		1-4Q	1Q	0	0	0	0	0
Finalize Prototype			2-3Q	0	0	0	0	0
System Demo			4Q	0	0	0	0	0
Update Systems Development and Demonstration Plan			3Q	0	0	0	0	0
Prepare/Staff IPR Package			4Q	0	0	0	0	0
M249 Short Range Training Ammo				0	0	0	0	0
Market Survey/Program Documentation	1-2Q			0	0	0	0	0
MS B Packages (Use of FY00 c/o funds)		4Q		0	0	0	0	0
Prepare Procurement Package	3-4Q			0	0	0	0	0
Technical Evaluation/Negotiations		1-2Q		0	0	0	0	0
Best & Finals/Source Selection		4Q		0	0	0	0	0
Prepare TEMP & Acquisition Strategy		1-2Q		0	0	0	0	0
Contract Award		4Q		0	0	0	0	0
Develop/Fabricate Prototype		4Q		0	0	0	0	0
Conduct Proof of Principle Test		4Q	1Q	0	0	0	0	0
Requirements Review/Prepare Performance Spec		2-3Q		0	0	0	0	0
Prepare Technical Assessment			4Q	0	0	0	0	0
M240 Weight Reduction				0	0	0	0	0
Establish Parameters	1-2Q			0	0	0	0	0
Survey Materials	2-3Q			0	0	0	0	0
Award Trade Off Study/Analysis Task Order	3Q			0	0	0	0	0
Trade Off Analysis	4Q	1Q		0	0	0	0	0
Fabricate Prototype Hardware	4Q	1Q		0	0	0	0	0
Evaluate Alternate Material Receivers		2Q		0	0	0	0	0
Trade Off Analysis		2-3Q		0	0	0	0	0
Test and Evaluation		2-3Q		0	0	0	0	0
Material Analysis/Welding		2-3Q		0	0	0	0	0
Demo/Report/MS B		4Q		0	0	0	0	0
Fabricate Welded Prototypes			1Q	0	0	0	0	0
Test and Evaluation			2-3Q	0	0	0	0	0
Systems Demonstration/IPR			4Q	0	0	0	0	0
Family Of Light Weight Hand Grenade*				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603802A - WEAPONS & MUNITIONS - ADV DEV**

PROJECT  
**AS2**

<b><u>D. Schedule Profile (continued)</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Prepare Concussion/Mini-Frag Grenades Program Documentation		1Q		0	0	0	0	0
Conduct Market Survey		1Q		0	0	0	0	0
Prepare Proc Pkg - Concussion/Mini-Frag Grenades Concept Development		2-3Q		0	0	0	0	0
Procurement Admin Lead Time (PALT)		2-3Q		0	0	0	0	0
Award Concussion/Mini-Frag Grenades Concept Development Contract			1Q	0	0	0	0	0
Design and Fabricate Prototype			1-3Q	0	0	0	0	0
Proof of Principle Testing			3-4Q	0	0	0	0	0
Final Report			4Q	0	0	0	0	0
Prepare Obscuration/Signaling Grenades Program Documentation				0	0	0	0	0
Conduct Market Survey for Obscuration/Signaling Grenades				0	0	0	0	0
Prepare Procurement Package - Obscuration/Signaling Concept Development				0	0	0	0	0
Procurement Admin Lead Time (PALT)				0	0	0	0	0
MB B				0	0	0	0	0
Award Concept Development Contract for Obscuration Grenades				0	0	0	0	0
MK19 Self Destruct Cartridge				0	0	0	0	0
Market Survey/Program Documentation				0	0	0	0	0
Procurement Package				0	0	0	0	0
Source Selection				0	0	0	0	0
MS B				0	0	0	0	0
Contract Award				0	0	0	0	0

\*C/M-F - Concussion/Mini-Frag Grenades    \*\*O/S - Obscuration/signaling Grenades

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603802A - WEAPONS & MUNITIONS - ADV DEV**

**PROJECT**  
**AS2**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Hardware Development	TBD	TBD	743	1350		620		0	0	0	0	0
Subtotal:			743	1350		620		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Support	MIPR	ARDEC	621	658		287		0	0	0	0	0
b . ILS Support	MIPR	ACALA	25	48		30		0	0	0	0	0
Subtotal:			646	706		317		0		0	0	0



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603802A - WEAPONS & MUNITIONS - ADV DEV**

**PROJECT**  
**AS2**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Testing	MIPR	ARDEC/ATC	100	401		347		0	0	0	0	0
Subtotal:			100	401		347		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Mgt	ALLOT	OPMSA	177	280		126		0	0	0	0	0
b . TDY	ALLOT	OPMSA	25	30		20		0	0	0	0	0
Subtotal:			202	310		146		0		0	0	0

<b>Project Total Cost:</b>			1691	2767		1430		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603802A - WEAPONS & MUNITIONS - ADV DEV**      PROJECT  
**AS3**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
AS3      OBJECTIVE INDIVIDUAL COMBAT WEAPON (OICW) PD/RR	10319	33080	30240	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Objective Individual Combat Weapon (OICW) - represents the next generation of individual weapon system for U.S. Armed Services. This modular dual barrel weapon system includes revolutionary 20mm air bursting munitions, standard NATO 5.56mm kinetic energy projectiles and an integrated, multifunctional, all environment, full-solution fire control. The OICW will provide decisively violent and suppressive target effects to ~1,000 meters. The OICW provides the soldier with a 300-500% increase in hit probability to defeat point, area and defilade targets out to ~1,000 meters. It will dramatically increase soldier survivability and versatility. The OICW will replace selected M16 Rifles and M4 Carbines.

**FY 2000 Accomplishments**

- 2839      System Development (Government)
- 1945      PD&RR Development Contract-System Design, Analysis & Development-Weapon
- 3890      PD&RR Development Contract-System Design, Analysis & Development-Fire Control
- 1421      PD&RR Development Contract-System Design, Analysis & Development-Ammunition
- 224      PD&RR Development Contract-Testing

Total 10319

**FY 2001 Planned Program**

- 4131      System Development (Government)
- 5340      PD&RR Development Contract-System Design, Analysis & Development-Weapon
- 10679      PD&RR Development Contract-System Design, Analysis & Development-Fire Control
- 3900      PD&RR Development Contract-System Design, Analysis & Development-Ammunition

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

4 - DEM/VAL

PE NUMBER AND TITLE

0603802A - WEAPONS & MUNITIONS - ADV DEV

PROJECT

AS3

## FY 2001 Planned Program (Continued)

- 615 PD&RR Development Contract- Testing of the Weapon, Fire Control & Ammunition
- 7431 FY01 Congressional Plus-Up to be realigned to Tech Base PE/Project 633607.D627
- 984 Small Business Innovation Research/Small Business Technology Transfer

Total 33080

## FY 2002 Planned Program

- 5460 System Development (Government)
- 6445 PD&RR Development Contract- Preliminary Design, Analysis & Development-Weapon
- 12885 PD&RR Development Contract- Preliminary Design, Analysis & Development-Fire Control
- 4708 PD&RR Development Contract-Preliminary Design, Analysis & Development-Ammunition
- 742 PD&RR Development Contract- Testing of the Weapon, Fire Control & Ammunition

Total 30240

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

**C. Acquisition Strategy:** The OICW has been demonstrated in an Advanced Technology Demonstration (ATD) in FY 1999/2000. Based on the results of the ATD and the requirements of the Operational Requirements Document (ORD) for the OICW System, a decision was made to enter the PD&RR Phase rather than EMD in FY00. The PD&RR Phase (PE 603802A DAS3) is utilizing modeling and simulation, as well as, developing, building and testing three (3) full systems (with spares). A full compliment of tests will be conducted including a man-rating test. This phase will produce a near final design for the OICW, as well as, the simulators, which will form the basis of the trainers. The PD&RR Phase will be completed in FY2005. The EMD Phase (PE 604802A D134) which begins in FY 2005 will complete the final design, development and validation of the training simulators and complete the Developmental, Operational and Live Fire Tests necessary to reach Milestone III in FY2008.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603802A - WEAPONS & MUNITIONS - ADV DEV**

PROJECT  
**AS3**

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Contract Preparation	3-4Q			0	0	0	0	0
System Development	4Q	1-4Q	1-4Q	0	0	0	0	0
Quality Design & Build				0	0	0	0	0
Developmental (PD&RR) Technical Testing				0	0	0	0	0
Developmental Evaluation				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603802A - WEAPONS & MUNITIONS - ADV DEV**

**PROJECT**  
**AS3**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Hardware Development	Cost plus award fee	Alliant Technology Systems	7480	20534	2Q	24780	1Q	0	0	0	0	0
Subtotal:			7480	20534		24780		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Support	MIPR	Multiple	1369	2134		3190		0	0	0	0	0
b . ILS Support	MIPR	Multiple	200	170		200		0	0	0	0	0
c . Training and Sims	MIPR	Multiple	230	453		500		0	0	0	0	0
d . AMSAA	MIPR	APG	150	132		240		0	0	0	0	0
Subtotal:			1949	2889		4130		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603802A - WEAPONS & MUNITIONS - ADV DEV**

**PROJECT**  
**AS3**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Developmental Technical Testing	MIPR	ATEC	400	262		350		0	0	0	0	0
Subtotal:			400	262		350		0		0	0	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Mgt	ALLOT	PMSA	460	950		950		0	0	0	0	0
b . Travel			30	30		30		0	0	0	0	0
c . *Congressional Plus-Up to be realigned			0	7431		0		0	0	0	0	0
d . SBIR/STTR			0	984		0		0	0	0	0	0
Subtotal:			490	9395		980		0		0	0	0
<b>Project Total Cost:</b>			10319	33080		30240		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	7787	6260	7456	0	0	0	0	0	0	0
526 MARINE ORIEN LOG EQ AD	3641	2280	2013	0	0	0	0	0	0	0
G10 ADV TAC PWR SOURCES AD	192	216	470	0	0	0	0	0	0	0
G11 ADV ELEC ENERGY CON AD	964	719	1004	0	0	0	0	0	0	0
G14 MATERIALS HANDLING EQUIPMENT - AD	102	187	200	0	0	0	0	0	0	0
K39 ENVIRONMENTAL EQUIPMENT - AD	1818	683	910	0	0	0	0	0	0	0
K41 WATER AND PETROLEUM DISTRIBUTION - AD	1070	2175	2859	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program supports demonstration and validation of new and improved technologies for combat support and combat service support equipment essential to sustaining combat operations. Advancements in airdrop, rigid wall shelters, watercraft, bridging, electric power generators and batteries, potable water, environmental control and petroleum equipment are necessary to improve safety and increase the tactical mobility, operational capability, lethality and survivability on the digital battlefield of the first to fight; and to provide for greater sustainment of all combat forces while reducing the logistics support burden. These syetms support the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

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

<u>B. Program Change Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	8428	6317	6503	0
Appropriated Value	8514	6317	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	-44	0	
b. SBIR / STTR	-223	0	0	
c. Omnibus or Other Above Threshold Reductions	-35	0		
d. Below Threshold Reprogramming	-418	0	0	
e. Rescissions	-51	-13	0	
Adjustments to Budget Years Since FY2001 PB	0	0	953	
Current Budget Submit (FY 2002/2003 PB )	7787	6260	7456	0

Explanation of changes:

FY02: Increase supports Theater Logistics Vessel (TLV) development.

FY03: Increase supports numerous petroleum and water systems associated with the Army Transformation.



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>4 - DEM/VAL</b>				PE NUMBER AND TITLE <b>0603804A - Logistics and Engineer Equipment Adv Dev</b>					PROJECT <b>526</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
526 MARINE ORIEN LOG EQ AD	3641	2280	2013	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Provides funds for the demonstration and validation of equipment in support of the Army's Logistics-Over-The-Shore (LOTS), In-theatre Port Control, and Intercoastal/Riverine Logistics missions. These efforts will significantly improve operational capability and flexibility. Project funds serve to support development of the Rapidly Installed Breakwater (RIB). This project will assist the Army to conduct LOTS exercises under adverse sea state conditions. Together, these efforts will extend capabilities of the joint Army/Navy LOTS program, and allow the Army to proceed with deployment of forces under less than ideal sea and weather conditions. The Theater Support Vessel (TSV) will operate at much greater speeds than current Army Watercraft, thus greatly improving the speed of Army combat mobilization in theatre. Efforts in the outyears will include a Watercraft Operations and Support (O&S) cost reduction study to identify specific cost-effective efforts which can be undertaken to improve the Army's O&S posture within the watercraft fleet. The study will examine areas such as Fuel Management, Lubrication, Paints, Maintenance Frequencies & Procedures, etc. Additionally, outyear efforts will concentrate on hardware modifications to comply with Safety of Life At Sea(SOLAS) requirements. These systems support the Legacy-to-objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 1954 Real Time Automatic Cargo Container Tracking & Control System (RTACTCS) development & prototyping.
- 773 Continuation of Rapidly Installed Breakwater (RIB) design and initiate delivery system conceptualization.
- 646 Initiation of Theatre Support Vessel (TSV) programmatic documentation and conduct cost and sizing study.
- 268 Harbormaster Command and Control Center (HCCC)- ORD developed, coordinated and approved.

Total 3641

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)****June 2001**

BUDGET ACTIVITY

**4 - DEM/VAL**

PE NUMBER AND TITLE

**0603804A - Logistics and Engineer Equipment Adv  
Dev**

PROJECT

**526****FY 2001 Planned Program**

- 600 Continuation of Rapidly Installed Breakwater (RIB) design and delivery system.
- 1202 Obtain Theatre Support Vessel (TSV) Milestone A decision, conduct market survey, and initiate RFP.
- 410 Landing Craft Utility, Parameters and Performance Characteristics for ESP/Upgrade
- 68 Small Business Innovative Research/Small Business Technology Transfer Programs

Total 2280

**FY 2002 Planned Program**

- 2013 Obtain Theatre Support Vessel (TSV) MS B decision, finalize TEMP, and verify TSV design/modifications.

Total 2013

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**526**

<b><u>B. Other Program Funding Summary</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>To Compl</b>	<b>Total Cost</b>
RDTE, 0604804A, D461, Marine Oriented Logistics, Engineering	3845	1434	6234	0	0	0	0	0	0	0
OPA 3, R97500, Causeway Systems	6669	17069	0	0	0	0	0	0	0	0
OPA 3, M11200, Logistic Support Vessel (LSV)	22514	0	25437	0	0	0	0	0	0	0
OPA 3, M11203, Theatre Support Vessel(TSV)	0	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** RIB: Engineering work on the RIB structure is being accomplished by the Corps of Engineers Engineering Research Development Center (ERDC) (current developers). TACOM is working on the development of the delivery system. Programmatic documentation for the RIB is being undertaken via competitive contract. The current Watercraft Communications, Electronics, & Navigation (CEN) Equipment contractor is Conley & Associates. Navy in-house and contract expertise would be available as well. TSV and LCU efforts will be conducted primarily with the Naval Surface Warfare Center (NSWC). NSWC can call on both in-house and contract resources (based on workload and expertise) to cover Army requirements.

<b><u>D. Schedule Profile</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Conceptual Development of the RIBS.	2-3Q	2-3Q		0	0	0	0	0
Theatre Support Vessel Concept Development	2-3Q	2-3Q	2-3Q	0	0	0	0	0
LCU Parameters and Performance Characteristics		2-4Q		0	0	0	0	0
Operations & Support Cost Reduction Study				0	0	0	0	0
128' Large Tug Recapitalization				0	0	0	0	0
New Large Tug				0	0	0	0	0
Uniform National Discharge Standards (UNDS)/Safety Equipment				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**526**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . RIB Engineering Support	MIPR	Waterways Experiment Station (WES)	445	0		0		0	0	0	0	0
b . TSV and LCU Engineering	MIPR	Navy (NSWC) Suffolk, VA	205	1075	2-3Q	1424	2-3Q	0	0	0	0	0
c . RIB Transporter	MIPR	TARDEC, Warren, MI	300	0		0		0	0	0	0	0
d . RIB Engineering Support	MIPR	Corps of Engineers (ERDC) Vicksburg, MS	120	325	2Q	0		0	0	0	0	0
e . RTACTCS	N/A	CECOM (Reprogrammed by DA)	1954	0		0		0	0	0	0	0
<b>Subtotal:</b>			3024	1400		1424		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**526**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TACOM CBU	MIPR	Warren, MI	14	5	1-2Q	19	2-3Q	0	0	0	0	0
b . CASCOM	MIPR	Warren, MI	14	45	2-3Q	25	2-3Q	0	0	0	0	0
c . TARDEC	MIPR	Warren, MI	170	0		0		0	0	0	0	0
d . PM Force Projection	MIPR	Warren, MI	192	0		0		0	0	0	0	0
e . Safety Office	MIPR	Warren, MI	8	0		0		0	0	0	0	0
Subtotal:			398	50		44		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DTC/ATC	MIPR	ATC, MD	101	320	2-3Q	200	2-3Q	0	0	0	0	0
Subtotal:			101	320		200		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**526**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Army Watercraft Systems /TARDEC	N/A	TACOM, Warren, MI	0	510	2-3Q	345	2-3Q	0	0	0	0	0
b . SBIR/STTR			118	0		0		0	0	0	0	0
Subtotal:			118	510		345		0		0	0	0
<b>Project Total Cost:</b>			3641	2280		2013		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**G11**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
G11      ADV ELEC ENERGY CON AD	964	719	1004	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project provides concept and technology development for electrical energy devices to improve soldier mobility, readiness and survivability. This project supports initiatives which will lead to tactical electric power procurements in diesel powered generators and power units/power plants rated at 3-920 kilowatts (kW) with higher efficiency, lighter weight, easier maintainability and higher reliability. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 380      Completed test and evaluation of commercial components/subsystems for 5-60kW generator sets.
- 528      Initiated system designs for fabrication of proof of concept systems for 5-60kW generator sets.
- 56      Initiated fabrication of prototypes per system designs. (Quantity 4)

Total    964

**FY 2001 Planned Program**

- 176      Complete prototypes. (Quantity 4)
- 524      Begin test and evaluation of prototype systems.
- 19      Small Business Innovation Research/Small Business Technology Transfer Program

Total    719

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**G11**

**FY 2002 Planned Program**

- 1004 Complete testing of prototype systems.
- Total 1004

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDT&E:PE0604804A, D194 Engine Driven Generators	7858	5077	3398	0	0	0	0	0	0	0
OPA 3, MA9800 Generators and Associated Equipment	77834	88047	59768	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Complete advanced development and transition to engineering development and production.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Design and initiate fabrication of prototypes	1Q			0	0	0	0	0
Complete component and subsystem testing	4Q			0	0	0	0	0
Complete system prototypes		3Q		0	0	0	0	0
Begin test & evaluation of prototypes		3Q		0	0	0	0	0
Complete testing system prototypes			4Q	0	0	0	0	0
Initiate Advanced Combustion Enhancement Program for 2-5kW				0	0	0	0	0
Procure commercial component and fabricate sub-assemblies from ACE program				0	0	0	0	0
Test ACE on military systems (2-5kW)				0	0	0	0	0
Transition ACE to Man Portable Power (MPP) program				0	0	0	0	0
Initiate Large Advanced Mobile Power Sources Program (LAMPS)				0	0	0	0	0



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

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

PROJECT  
**G11**

**D. Schedule Profile (continued)**

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Initiate testing of LAMPS components				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**G11**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Generator design and fabricate components	MIPR	CECOM-Belvoir	385	0		24	1Q	0	0	0	0	0
b . Generator prototypes	MIPR	CECOM-Belvoir	35	106	1Q	200	1Q	0	0	0	0	0
c . ACE Components	TBD	TBD	0	0		0		0	0	0	0	0
Subtotal:			420	106		224		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Generator components	In-house	CECOM In-house	250	70	1Q	0		0	0	0	0	0
b . Prototypes	In-house	CECOM In-house	26	0		80	1Q	0	0	0	0	0
c . ACE Components	MIPR	CECOM-Belvoir	0	0		0		0	0	0	0	0
Subtotal:			276	70		80		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

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

**PROJECT  
G11**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Component/Subsystem	MIPR	CECOM-Belvoir	482	0		0		0		0	0	0
b . Prototypes	MIPR	CECOM-Belvoir	0	424	1Q	600	1Q	0		0	0	0
c . ACE Components	TBD	TBD	0	0		0		0		0	0	0
Subtotal:			482	424		600		0		0	0	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Generator components	In-house	CECOM In-house	150	0		0		0		0	0	0
b . Prototypes	In-house	CECOM In-house	0	100	1Q	100	1Q	0		0	0	0
c . ACE Components	In-house	CECOM In-house	0	0		0		0		0	0	0
d . SBIR/STTR			0	19		0		0		0	0	0
Subtotal:			150	119		100		0		0	0	0
Project Total Cost:			1328	719		1004		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>4 - DEM/VAL</b>			<b>PE NUMBER AND TITLE</b> <b>0603804A - Logistics and Engineer Equipment Adv</b>						<b>PROJECT</b> <b>K41</b>	
			<b>Dev</b>							
COST (In Thousands)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
K41 WATER AND PETROLEUM DISTRIBUTION - AD	1070	2175	2859	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Develop and demonstrate the potential of prototype equipment and technologies to satisfy petroleum and water distribution system requirements. These R&D efforts support the development and enhancement of rapidly deployed Petroleum and Water equipment. This equipment enables the Army to achieve its transformation vision by providing it with the means to be highly mobile and self sustaining in very hostile theatres of operations. These systems support the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 800 Awarded contract for Tactical Fuel Automated System (TFAS).
  - 100 Conducted fabric tank material testing.
  - 69 Prepared Petroleum Quality Surveillance Lab (PQSL) lifecycle cost estimate and evaluated system concepts.
  - 101 Program management and general support.
- Total 1070

**FY 2001 Planned Program**

- 780 Complete Lightweight Water Purifier (LWP) Testing.
- 230 Prepare LWP IPR package and production contract RFP.
- 350 Award LWP final contract increment.
- 100 Prepare RO Element Life Extension Report.
- 152 Perform reverse osmosis cyanide removal evaluation.
- 500 Evaluate pre-planned product improvements (P3I) for petroleum storage and distribution systems.

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**

June 2001

BUDGET ACTIVITY

**4 - DEM/VAL**

PE NUMBER AND TITLE

**0603804A - Logistics and Engineer Equipment Adv  
Dev**

PROJECT

**K41****FY 2001 Planned Program (Continued)**

- 63 Small Business Innovative Research/Small Business Technology Transfer Programs.

Total 2175

**FY 2002 Planned Program**

- 545 Develop technical requirements and initiate design of advanced petroleum test kits.
- 400 Conduct LWP Testing.
- 614 Evaluate commercially available water purification components.
- 700 Conduct market survey for the trailer-mounted tank and pump unit (TMTPU).
- 100 Program management support.
- 500 Continue evaluation of P3I for petroleum storage and distribution systems.

Total 2859

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**K41**

<b>B. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, 0604804.L41, Fuels and Equipment Engineering Development	4392	6280	7366	0	0	0	0	0	0	0
OPA 3, R05600, Water Purification Systems	9351	40354	39289	0	0	0	0	0	0	0
OPA 3, MB6400, Quality Surveillance Equipment	1696	7056	7694	0	0	0	0	0	0	0

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

<b>D. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Evaluate P3I's to Petro S&D Systems.		2-4Q		0	0	0	0	0
LWP PQT Testing.		2-4Q		0	0	0	0	0
Conduct LWP MS C LRIP Decision.			1Q	0	0	0	0	0
RO Element & Life Extension Report.		4Q		0	0	0	0	0
Cyanide removal testing.		3-4Q		0	0	0	0	0
Develop Advanced Petroleum Test Kit			1-4Q	0	0	0	0	0
Complete LWP IOT&E.			3Q	0	0	0	0	0
Evaluate Water Purification Components.			1-4Q	0	0	0	0	0
Market Survey for TMTPU.			1Q	0	0	0	0	0
Award contract for TMTPU.			3Q	0	0	0	0	0
Continue evaluation of P3I for Petro S&D Systems.			1-4Q	0	0	0	0	0
Conduct testing of AAN water purifiers.				0	0	0	0	0
Complete analysis of alternatives of petroleum storage and distribution concepts.				0	0	0	0	0
Prepare initial program documentation for next generation water analysis equipment				0	0	0	0	0
Complete test and evaluation of TMTPU.				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**K41**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PQSL	In-House	TARDEC	69	0		0		0	0	0	0	0
b . TFAS	CPFF	SAIC & Lantern, VA	800	0		0		0	0	0	0	0
c . LWP	CPFF	MECO, LA	0	350	3Q	0		0	0	0	0	0
d . LWP	In-House	TARDEC	0	100	1Q	0		0	0	0	0	0
e . Water Treatment Components	CPFF	TBD	0	0		150	2Q	0	0	0	0	0
f . Advanced Petroleum Test Kit	In-House	TARDEC	0	0		195	1Q	0	0	0	0	0
g . Advanced Petroleum Test Kit	CPFF	TBD	0	0		300	2Q	0	0	0	0	0
h . TMTPU	In-House	TARDEC	0	0		100	1Q	0	0	0	0	0
i . TMTPU	CPFF	TBD	0	0		600	2Q	0	0	0	0	0
j . Petroleum Storage & Distribution (P31)	CPFF	TBD	0	328	2Q	350	2Q	0	0	0	0	0
k . Water Analysis Equipment	In-House	TARDEC	0	0		0		0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**K41**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			869	778		1695		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . LWP	In-House	TACOM	0	230	2Q	0		0	0	0	0	0
b . Water Purification Components P3I	In-House	TARDEC	0	100	2Q	100	1Q	0	0	0	0	0
c . AAN Water Purification	In-House	TARDEC	0	0		0		0	0	0	0	0
d . Advanced petroleum test kit	In-House	TACOM	0	0		25	1Q	0	0	0	0	0
e . Petro S&D P3I	In-House	TARDEC	0	172	1Q	150	1Q	0	0	0	0	0
f . Water Analysis Equipment	In-House	TARDEC	0	0		0		0	0	0	0	0
Subtotal:			0	502		275		0		0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**K41**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. TFAS	MIPR	ATEC	0	0		0		0	0	0	0	0
b. Fabric tank materials	MIPR	ARL	77	0		0		0	0	0	0	0
c. LWP	MIPR	ATEC, MD	0	483	2Q	0		0	0	0	0	0
d. LWP	In-House	TARDEC	0	143	2Q	0		0	0	0	0	0
e. LWP	MIPR	NFESC	0	32	2Q	0		0	0	0	0	0
f. AAN Water Purifiers	In-House	TARDEC	0	0		0		0	0	0	0	0
g. Water Treatment components (P3I)	In-House	TARDEC	0	152	2Q	365	1Q	0	0	0	0	0
h. Advanced petroleum test kit	MIPR	ATEC	0	0		0		0	0	0	0	0
i. TMTPU	MIPR	ATEC	0	0		0		0	0	0	0	0
j. Petro S&D P3I	MIPR	ATEC	0	0		0		0	0	0	0	0
k. LWP	MIPR	TEXCOM	0	0		400	2Q	0	0	0	0	0
Subtotal:			77	810		765		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**K41**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Fabric tank materials	In-House	TACOM	23	0		0		0	0	0	0	0
b . Advanced Petroleum Test Kit	InHouse	TACOM	0	0		25	1Q	0	0	0	0	0
c . Program Management Support	InHouse	TACOM	108	85	2Q	99	1Q	0	0	0	0	0
d . AAN Water Purifiers	C-CPFF	TBD	0	0		0		0	0	0	0	0
e . Water Analysis Equipment	In-House	TARDEC	0	0		0		0	0	0	0	0
Subtotal:			131	85		124		0		0	0	0
<b>Project Total Cost:</b>			1077	2175		2859		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>4 - DEM/VAL</b>		<b>PE NUMBER AND TITLE</b> <b>0603805A - Combat Svc Spt Control Sys Evaluation &amp; Analysis</b>						<b>PROJECT</b> <b>091</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
091    CBT SVC SPT CONTRL SYS	11209	13627	8696	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE:** This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

The Combat Service Support Control System (CSSCS) is the Combat Service Support C2 component of the Army Battle Command System. CSSCS is a network of workstations that provide comprehensive combat service support capabilities and exchange messages in near real time. It provides the critical combat power assessment capability for the Army Transformation across the range of combat forces (e.g., light, medium, heavy). CSSCS is the fulcrum between transformation logistics enablers and combat power. It automates current manual processes for force level planning and supports decision-making for the warfighting commanders, the combat service support commanders and their staffs. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 2192    Continued Version 5 development.
- 4180    Conducted Army Warfighting Experiments and supported FDD, developed initial web-based technologies and continued migration to DII Common Operating Environment (COE).
- 4837    Continued Version 4 development.

Total 11209

**FY 2001 Planned Program**

- 3848    Continue Version 5 development.
- 688    ABCS System Engineering and Integration Efforts.
- 3939    Prepare for and conduct Army Warfighting Experiments, achieve FDD, support IBCT, and work towards First Digitized Corps.
- 813    Continue incremental SW build releases both for the added functionality, for improved ABCS integration and to better support CINC requirements for operational deployments; re-engineer report and input forms to a web-based client.
- 4339    Complete Version 4 development.

Total 13627

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603805A - Combat Svc Spt Control Sys Evaluation  
& Analysis**

PROJECT  
**091**

**FY 2002 Planned Program**

- 4700 Continue Version 5 development and begin technical testing.
- 3100 Support initial BCT requirements, prepare for and conduct Army Warfighting Experiments, and extend work to achieve First Digitized Corps.
- 896 Continue incremental SW build releases for both the added functionality, for improved ABCS integration and to better support CINC requirements for operational deployments.

Total 8696

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
President's Previous Budget (FY 2001 PB)	11017	13753	8657	0
Appropriated Value	11062	0	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-297	0	0	0
c. Omnibus or Other Above Threshold Reductions	-45	0	0	0
d. Below Threshold Reprogramming	489	0	0	0
e. Rescissions	0	-126	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	39	0
Current Budget Submit (FY 2002/2003 PB )	11209	13627	8696	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603805A - Combat Svc Spt Control Sys Evaluation  
& Analysis**

PROJECT  
**091**

<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Procurement, OPA 2 (W34600)	19836	26956	25201	0	0	0	0	0	0	0
Standardized Integrated Command Post Systems (SICPS) (BZ9962)	0	0	1927	0	0	0	0	0	0	0
Spares (BS9706)	146	0	0	0	0	0	0	0	0	0

**D. Acquisition Strategy:** The Acquisition strategy uses a spiral development process. Program development is structured for capabilities to mature and evolve over five software versions. Versions 1 and 2 served as proof of principle. They provided initial division-level CSS functional capability on common hardware. Version 3 was built on the capabilities of the two previous versions and provided an Initial Operational Capability at Division and Corps level. This included initial horizontal interoperability with other BFA systems. Version 4 extends CSSCS to Echelons Above Corps (EAC), provides added capabilities at Echelons Corps and Below (ECB), and extends integration with ABCS systems. Version 5, the objective CSSCS software, will provide remaining ECB functionality, and extend CSSCS capabilities to joint, allied and coalition forces. TRW is the software development contractor. Lockheed Martin Corporation (LMC) provides training support. Hardware is procured from the Common Hardware Systems-2 (CHS-2) contract with General Dynamics (GD).

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
V4 Technical Test	3Q			0	0	0	0	0
Complete V4		3Q		0	0	0	0	0
Develop V5		1-4Q	1-4Q	0	0	0	0	0
First Digitized Division (FDD) IOC		1Q		0	0	0	0	0
V5 Technical Test				0	0	0	0	0
V5 Operational Test				0	0	0	0	0
Incremental SW Build Releases	1-4Q	1-4Q	1-4Q	0	0	0	0	0
First Digitized Corps (FDC) IOC				0	0	0	0	0
First Digitized Corps Test				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603805A - Combat Svc Spt Control Sys Evaluation & Analysis**

**PROJECT**  
**091**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Software Development	CPAF	TRW, Carson, CA	100333	8340	1-2Q	5923	1-2Q	0	0	0	0	0
b . Training Development	CPAF	Lockheed Martin, Tinton Falls, NJ	6469	924	1Q	0		0	0	0	0	0
c . ABCS SE&I/COE/Common Spt.	MIPR	Various	6459	1076	1-2Q	1120	1-2Q	0	0	0	0	0
d . Future Development			0	0		0		0	0	0	0	0
e . GFE			3601	0		0		0	0	0	0	0
Subtotal:			116862	10340		7043		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603805A - Combat Svc Spt Control Sys Evaluation & Analysis**

**PROJECT**  
**091**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CECOM	MIPR	FT. Monmouth , NJ & Ft. Belvoir, VA	4324	837	1Q	0		0	0	0	0	0
b . EER	MIPR	Fort Lee, VA	7675	646	1-2Q	0		0	0	0	0	0
c . LMI	MIPR	McLean, VA	1075	0		0		0	0	0	0	0
Subtotal:			13074	1483		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . GOVT	MIPR	VARIOUS	5575	0		0		0	0	0	0	0
b . EPG	MIPR	VARIOUS	1028	0		0		0	0	0	0	0
c . ATEC	MIPR	VARIOUS	1628	0		0		0	0	0	0	0
Subtotal:			8231	0		0		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603805A - Combat Svc Spt Control Sys Evaluation & Analysis**

**PROJECT**  
**091**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. PM CSSCS	N/A	FT. BELVOIR, VA	15081	1804	1Q	1653	1Q	0	0	0	0	0
Subtotal:			15081	1804		1653		0		0	0	0
<b>Project Total Cost:</b>			153248	13627		8696		0		0	0	0



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603807A - Medical Systems Advanced Development**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	16172	15367	15506	0	0	0	0	0	0	0
808 DOD DRUG & VACC AD	5009	4592	4073	0	0	0	0	0	0	0
811 MIL HIV VAC&DRUG DEV	2597	5699	6341	0	0	0	0	0	0	0
836 COMBAT MEDICAL MATL AD	3893	4228	4200	0	0	0	0	0	0	0
837 SOLDIER SYS PROT-AD	855	848	892	0	0	0	0	0	0	0
853 COMBAT TRAUMA PATIENT SIMULATION	3818	0	0	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element (PE) funds the advanced development (AD) of medical materiel necessary to field an effective capability for counteracting infectious diseases, treating, diagnosing and evacuating combat casualties, and developing operational medical drugs and materiel.

The PE funds AD of systems for medical protection against naturally occurring diseases and human immunodeficiency virus (HIV). These initiatives directly enhance military forces deployability and survivability through preventative protection against expected threats in areas of potential conflict around the globe. This includes development and initial human testing of vaccines, prophylactics, and therapeutic drugs.

Additionally, the PE supports AD of field medical equipment and drugs essential for combat casualty care on all battlefields and military operations other than war. Systems include resuscitators, blood substitutes, advanced sensors and diagnostic algorithms, field x-ray, field production of medical grade oxygen, intensive care delivery platforms and litters, and hemostatic dressing. These products have the potential to significantly enhance force sustainment (both physiologically and psychologically) by providing a more responsive, versatile, and empowered forward health care.

The PE also funds AD of systems that provide enhancement of or protection against physiological and psychological factors affecting cognitive and physical performance imposed by military systems, combat operations, or the environment. These efforts have direct relationships with soldier survivability and lethality through improved soldier mental and physical performance.

This program is managed by the U.S. Army Medical Research and Materiel Command. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

Core projects without R-2A Exhibits which contain less than \$1M in FY 2002/2003 are described below:

Project 837, Soldier System Advanced Protection, supports demonstration and validation of preventive medicine materiel including devices, pharmacologicals, and other tools to provide protection, sustainment, and enhancement of the physiological and psychological capabilities of soldiers in the face of combat operations under all environmental conditions.

This PE also includes Congressionally directed research on combat trauma patient simulation ( project 853) and low-power blood cooling and storage

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603807A - Medical Systems Advanced Development**

devices.

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	16566	12235	14669	0
Appropriated Value	16723	15509	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-394	0	0	
c. Omnibus or Other Above Threshold Adjustments	-60	0	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	-97	-142	0	
Adjustments to Budget Years Since FY2001 PB	0		837	
Current Budget Submit (FY 2002/2003 PB )	16172	15367	15506	0

Change Summary Explanation: Funding - FY 2003: Funds were realigned to support Hemostatic Dressing clinical trials (+4940).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>4 - DEM/VAL</b>				PE NUMBER AND TITLE <b>0603807A - Medical Systems Advanced Development</b>					PROJECT <b>808</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
808 DOD DRUG & VACC AD	5009	4592	4073	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project funds program definition and risk reduction of candidate medical countermeasures such as vaccines and drugs through safety, immunogenicity, and small-scale efficacy testing in volunteers against naturally occurring infectious diseases of mission-degrading or mission-aborting potential, thereby improving deployability and survivability of forces. Work performed in laboratories and among troop populations is directed to prevent, diagnose, and treat viral, bacterial, and parasitic disease to prevent casualties, sustain operational performance, and minimize deaths and disability of armed forces during military operations. Preclinical trials, as well as phase 1, 2, and 3 trials, are performed as required for drug, vaccine, and device licensure by the U.S. Food and Drug Administration (FDA). Major advanced development contractors include Southern Research Institute, Birmingham AL; South Florida Research Institute, Miami, FL; Institute of Biology for the Army, Rio de Janeiro, Brazil; and Kenya Medical Research Institute, Nairobi, Kenya. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 1909 Conducted studies and reviews of malarial/antimalarial vaccines, drugs, and diagnostics:
  - Conducted phase 1 study to refine dose regimen for RTS,S malaria vaccine.
  - Conducted preclinical carcinogenicity study and Milestone (MS) II In-Process Review (IPR) for Tafenoquine antimalarial drug.
  - Conducted MS I IPR and transitioned rapid detection of Plasmodium-infected mosquitoes program to the Program Definition and Risk Reduction (PDRR) phase.
  - Conducted MS I IPR and transitioned malaria rapid diagnostic device program to the Program Definition and Risk Reduction (PDRR) phase.
  
- 363 Continued phase 1/2 safety and efficacy field trials for the Shigella flexneri diarrheal vaccine in Bangladesh; chosen for the high endemic occurrence of this disease and suitable medical infrastructure.
  
- 1027 Conducted or completed trials and evaluations of grouped infectious disease vaccines and drugs (Hepatitis E and Leishmania):
  - Completed phase 1b and started phase 2 clinical trials in Nepal, an area of high endemicity, for the Hepatitis E vaccine program.

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)****June 2001**BUDGET ACTIVITY  
**4 - DEM/VAL**PE NUMBER AND TITLE  
**0603807A - Medical Systems Advanced Development**PROJECT  
**808****FY 2000 Accomplishments (Continued)**

- 1395 Conducted a MS I IPR, started development of a human challenge model for clinical evaluation of efficacy, began sequencing and cloning of dengue types 2, 3, and 4 components, and conducted phase 1b clinical trials to select dose formulations for the dengue tetravalent Flavivirus vaccine.
  
- 315 Conducted appropriate reviews and transitioned Insect Vector Control products:
  - Conducted MS I IPR and transitioned lethal ovitrap for dengue vectors program to the PDRR phase.
  - Conducted a MS I IPR and transitioned camouflage face paint with insect repellent and reduced infrared signature program to the PDRR phase.

Total 5009

**FY 2001 Planned Program**

- 1025 Complete and/or continue studies, and conduct reviews of malarial/antimalarial vaccines, drugs, and diagnostics:
  - Complete phase 1 study to refine dose regimen for RTS,S malaria vaccine.
  - Continue developmental testing of prototype kit for the rapid detection of Plasmodium-infected mosquitoes.
  - Conduct developmental testing of prototype malaria rapid diagnostic device.
  - Conduct a MS I IPR and transition program (artelinic acid) for the treatment of severe and complicated malaria to the PDRR phase.
  
- 694 Conduct trials and reviews of diarrheals:
  - Conduct expanded phase 2 safety and efficacy field trial for Shigella flexneri vaccine in Bangladesh; chosen for the high endemic occurrence of this disease and suitable medical infrastructure.
  - Conduct a MS I IPR and transition Shigella sonnei vaccine program to the PDRR phase.
  
- 1129 Conduct evaluations and trials of grouped infectious disease vaccines and drugs (Hepatitis E, Leishmania, and Japanese Encephalitis):
  - Conduct a phase 2 clinical trial in Nepal, an area of high endemicity, to evaluate the effectiveness of the Hepatitis E vaccine.
  - Conduct potency evaluation of Leishmania skin test components for the diagnosis of Leishmania infections and conduct phase 1 safety study.
  
  - Reformulate paromomycin/gentamicin topical antileishmanial cream for future evaluation in clinical trials.
  - Conduct a MS I IPR and transition the Japanese encephalitis vaccine (improved) program to the PDRR phase.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
**0603807A - Medical Systems Advanced Development**

PROJECT  
**808**

**FY 2001 Planned Program (Continued)**

- 1056 Conduct or complete evaluations of Flavivirus vaccines:
    - Complete development of human challenge model for the clinical evaluation of the efficacy of dengue tetravalent vaccines.
    - Complete sequencing and cloning of dengue types 2, 3, and 4 for use in evaluation of infectious clone vaccines.
    - Conduct preclinical effectiveness evaluation of a prototype infectious clone dengue vaccine and conduct phase 1 safety evaluation.
  - 579 Conduct or continue appropriate testing and review of insect vector control products:
    - Continue developmental testing of a prototype lethal ovitrap for dengue vectors.
    - Conduct developmental testing of camouflage face paint with insect repellent and reduced infrared signature.
  - 109 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
- Total 4592

**FY 2002 Planned Program**

- 1232 Conduct trials, testing, and reviews of malarial/antimalarial vaccines, drugs, and diagnostics:
  - Conduct phase 2 clinical trial of new dose regimen of RTS,S malaria vaccine.
  - Continue developmental testing of prototype kit for the rapid detection of Plasmodium-infected mosquitoes.
  - Conduct MS II IPR for the malaria rapid diagnostic device program.
  - Conduct preclinical safety evaluation of artelinic acid for the treatment of severe and complicated malaria.
- 410 Conduct and/or complete clinical trials, evaluations, and reviews of diarrheal vaccines:
  - Complete expanded phase 2 safety and efficacy field trial for Shigella flexneri vaccine in Bangladesh and conduct MS II IPR.
  - Conduct phase 1 clinical safety evaluation of Shigella sonnei vaccine for the prevention of traveler's diarrhea.
  - Conduct a MS I IPR for the Shigella dysenteriae vaccine program.
- 1288 Conduct trials and reviews for grouped infectious disease vaccines and drugs (Hepatitis E, Leishmania, and Japanese Encephalitis):
  - Complete a phase 2 clinical trial in Nepal to evaluate the effectiveness of the Hepatitis E vaccine and conduct MS II IPR.
  - Conduct an MS II IPR for the Leishmania skin test program.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
**0603807A - Medical Systems Advanced Development**

PROJECT  
**808**

**FY 2002 Planned Program (Continued)**

- Conduct phase 2 clinical trial of new formulation of paromomycin/gentamicin topical antileishmanial cream and conduct MS II IPR.
- Conduct an MS I IPR for the Group B Meningitis vaccine program.
- Conduct phase 1 clinical safety evaluation of the improved Japanese encephalitis vaccine.
- 760 Complete phase 1 safety evaluation of a prototype infectious clone dengue Flavivirus vaccine.
- 383 Proceed with developmental testing and evaluation of insect vector control products:
  - Continue developmental testing of a prototype lethal ovitrap for dengue vectors.
  - Complete developmental testing of camouflage face paint with insect repellent and reduced infrared signature and conduct MS II IPR.

Total 4073

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

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

<b><u>D. Schedule Profile</u></b>	<b><u>FY 2000</u></b>	<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>
Tafenoquine antimalarial (MSII)	4Q			0	0	0	0	0
Leishmania Skin Test (MSII)			1Q	0	0	0	0	0
Shigella flexneri (MSII)			2Q	0	0	0	0	0
Paromomycin/Gentamicin (MSII)			3Q	0	0	0	0	0
Hepatitis E vaccine (MSII)			4Q	0	0	0	0	0
RTS,S malaria vaccine (MSII)				0	0	0	0	0
Malaria Rapid Diagnostic Device (MSI); (MSII)	1Q		1Q	0	0	0	0	0
Camouflage face paint (MSI); (MSII)	1Q		4Q	0	0	0	0	0
Dengue tetravalent vaccine (MSI); (MSII)	3Q			0	0	0	0	0
Lethal ovitrap for dengue-infected mosquitoes (MSI); (MSII/III)	4Q			0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603807A - Medical Systems Advanced Development**

PROJECT  
**808**

<b><u>D. Schedule Profile (continued)</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Detection of Plasmodium-infected mosquitoes (MSI); (MSII/III)	4Q			0	0	0	0	0
Artelinic acid (MSI); (MSII)		3Q		0	0	0	0	0
Shigella sonnei vaccine (MSI); (MSII)		3Q		0	0	0	0	0
Japanese encephalitis vaccine (improved) (MSI); (MSII)		4Q		0	0	0	0	0
Group B meningitis vaccine (MSI); (MSII)			3Q	0	0	0	0	0
Shigella dysenteriae vaccine (MSI); (MSII)			3Q	0	0	0	0	0
Hantavirus vaccine (MSI)				0	0	0	0	0
New standard military insect repellent (MSI)				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603807A - Medical Systems Advanced Development**

**PROJECT**  
**808**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			1244	1118		987		0	0	0	0	0
Subtotal:			1244	1118		987		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			236	121		106		0	0	0	0	0
Subtotal:			236	121		106		0		0	0	0



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603807A - Medical Systems Advanced Development**

**PROJECT**  
**808**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			4393	2888		2570		0	0	0	0	0
Subtotal:			4393	2888		2570		0		0	0	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			995	465		410		0	0	0	0	0
Subtotal:			995	465		410		0		0	0	0
<b>Project Total Cost:</b>			6868	4592		4073		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603807A - Medical Systems Advanced Development**

PROJECT  
**811**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
811 MIL HIV VAC&DRUG DEV	2597	5699	6341	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project funds Congressionally mandated, militarily relevant human immunodeficiency virus (HIV) research for demonstration and validation of candidate vaccines and drugs through safety, immunogenicity, and small-scale efficacy testing and behavioral intervention in volunteers. Preclinical trials, as well as phase 1, 2, and 3 trials, are performed as required for drug, vaccine, and device licensure by the U.S. Food and Drug Administration (FDA). Development efforts are directed to answer militarily unique needs affecting manning, mobilization, and deployment. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 50 Redesigned and refocused the HIV vaccine development program to follow a prime-boost vaccination strategy (clade E - a strain prevalent in developing countries). Conducted a Milestone (MS) 0/I In-Process Review (IPR) on prime-boost HIV vaccine strategy (clade E).
- 604 Conducted phase 1 clinical trials to select optimal dose levels of boost component of HIV vaccines (clade E).
- 1943 Selected prime HIV vaccine candidate. Planned and began multi-year phase 2 clinical trials to down-select among three boost HIV vaccine component candidates (clade E).

Total 2597

**FY 2001 Planned Program**

- 50 Complete phase 1 clinical trials to select optimal dose levels of boost component of HIV vaccines (clade E).
- 2422 Continue multi-year phase 2 clinical trials to down-select among three boost HIV vaccine component candidates (clade E).
- 3057 Conduct field site development. Conduct studies to identify potential subject populations for involvement in phase 3 pivotal clinical trial of prime-boost HIV vaccine (clade E).
- 170 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 5699

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
**0603807A - Medical Systems Advanced Development**

PROJECT  
**811**

**FY 2002 Planned Program**

- 609 Complete multi-year phase 2 clinical trials to down-select among three HIV vaccine boost candidates (clade E).
  - 2519 Conduct field site development to determine best location for vaccine trials in area with high HIV rate. Conduct studies to identify potential subject populations for involvement in phase 3 pivotal clinical trial of a prime-boost HIV vaccine (clade E).
  - 50 Select boost component of HIV vaccine candidate. Conduct MS II IPR on prime-boost HIV vaccine (clade E).
  - 3163 Plan and begin multi-year phase 3 clinical trial to determine effectiveness of prime-boost HIV vaccine (clade E).
- Total 6341

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

**C. Acquisition Strategy:** Test and evaluate commercially developed vaccine candidates in government-managed trials.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
HIV Vaccine (MS I); (MS II)	4Q		1Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603807A - Medical Systems Advanced Development**

**PROJECT  
811**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Product Development	Cooperative Agreement	Henry M. Jackson Foundation, Rockville, MD	3698	765		846		0	0	0	0	0
<b>Subtotal:</b>			3698	765		846		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			157	339		372		0	0	0	0	0
<b>Subtotal:</b>			157	339		372		0		0	0	0

Remarks: Not Applicable

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603807A - Medical Systems Advanced Development**

**PROJECT  
811**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test and Evaluation	Government Laboratory	Walter Reed Army Institute of Research (WRAIR), Silver Spring, MD	2037	4497		5016		0	0	0	0	0
<b>Subtotal:</b>			2037	4497		5016		0		0	0	0

Remarks: Not Applicable

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually.			45	98		107		0	0	0	0	0
<b>Subtotal:</b>			45	98		107		0		0	0	0

Remarks: Not Applicable

<b>Project Total Cost:</b>			5937	5699		6341		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603807A - Medical Systems Advanced Development**

PROJECT  
**836**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
836 COMBAT MEDICAL MATL AD	3893	4228	4200	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The project supports advanced development of new and improved systems essential for battlefield casualty care, patient transport and evacuation, and return to duty in support of special contingency and conventional force operations. These systems decrease mortality rates and enhance force sustainment by providing more responsive, versatile, and deployable forward health care. Advanced development contractors/universities include United Defense Limited Partnership; Mission Medical; IGR Enterprises, Inc; and PM Bradley Fighting Vehicle Systems and Naval Research Center. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 1884 Conducted Force Development Experiment for the Armored Medical Evacuation Vehicle (AMEV). Completed the Engineering and Manufacturing Development vehicle for production qualification testing.
- 1018 Conducted series of four diverse animal model evaluations on nine candidate hemostatic dressings leading to a Milestone (MS) I In-process Review (IPR) and down-selection of products for further development.
- 665 Continued to improve field medical treatment and treatment aid devices.
  - Conducted development user tests for the Thawed Blood Processing System (TBPS), culminating in a MS I/II IPR for TBPS.
  - Completed user testing of Special Operations Resuscitation and Surgical Station for far-forward resuscitation and stabilization. Completed the Technical Data Package.
  - Built prototype Ceramic Oxygen Generator System modules that incorporate key technologies for a portable oxygen generator to replace oxygen bottles used far-forward.
- 326 Collaborated with the Soldier Biological and Chemical Command to incorporate Warrior Medic design requirements into the completely revised and rebaselined Land Warrior program.

Total 3893

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**4 - DEM/VAL**

PE NUMBER AND TITLE

**0603807A - Medical Systems Advanced Development**

PROJECT

**836**

**FY 2001 Planned Program**

- 187 Prepare for testing and evaluation of medical evacuation systems.
    - Start Interim Armored Vehicle (a component of the Interim Brigade Combat Team (IBCT)) modification for medical capability, conduct MS I (if necessary), and participate in the Force Development Exercises.
    - Complete initial operational test and evaluation for Critical Care System for Trauma and Transport (CSTAT) and conduct MS I/II.
  - 1922 Secure commercial partners for hemostatic dressing development. Begin safety and efficacy trials in animals for hemostatic dressing using Good Laboratory Practice.
  - 1498 Conduct transitions and product evaluation of field medical treatment and treatment aid devices.
    - Start operational tests and develop disposable filtration cassette for TBPS.
    - Integrate prototype modules into a rugged, lightweight portable Ceramic Oxygen Generator System to demonstrate battlefield capabilities.
    - Evaluate four candidate products for a one-handed tourniquet.
    - Conduct a MS 0 for Dental Field Treatment and Operating System and start reliability tests.
  - 527 Prepare and conduct tests and investigations for medical monitoring and imaging systems.
    - Prepare for initial operational test and evaluation for Warrior Medic program.
    - Start and complete market investigation for the Filmless Digital Imaging System.
    - Begin development of an analysis of alternatives for the Non-Contact Heart Rate Monitor.
  - 94 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
- Total 4228

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

4 - DEM/VAL

PE NUMBER AND TITLE

0603807A - Medical Systems Advanced Development

PROJECT

836

## FY 2002 Planned Program

- 635 Demonstrate and evaluate medical evacuation systems.
  - Evaluate and begin necessary modifications to the Interim Armored Vehicle.
  - Begin evaluation of preplanned product improvements for second version CSTAT in order to meet Operational Requirements Document (ORD) requirements.
  - Conduct a Market Investigation for the mini-STAT (a small lightweight system for transporting trauma patients).
- 2147 Start human clinical trials for hemostatic dressing for elective surgery indication.
- 1091 Conduct testing and milestone IPRs for field medical treatment and treatment aid devices.
  - Complete FDA clinical trials of the TBPS, and conduct MS III.
  - Perform Ceramic Oxygen Generator System user testing, and conduct a MS I IPR.
  - Conduct down-select to single one-handed tourniquet design and conduct MS I/II.
  - Begin reliability/survivability tests for the Dental Field Treatment and Operating System and conduct MS I.
- 327 Conduct tests and investigations for medical monitoring and imaging systems.
  - Conduct an initial operational test and evaluation for the Warrior Medic System and prepare for a MS II/III.
  - Develop an analysis of alternatives for the Non-Contact Heart Rate Monitor.

Total 4200

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

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



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603807A - Medical Systems Advanced Development**

PROJECT  
**836**

<b>D. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Warrior Medic (MSII/III)				0	0	0	0	0
Hemostatic Foam (MSI)				0	0	0	0	0
Hemostatic Dressing (MSI); (MSII); (MSIII)	4Q			0	0	0	0	0
Non-Contact Heart Rate Monitor (MSI)				0	0	0	0	0
Ceramic Oxygen Generator System (MSI); (MSII/III)			4Q	0	0	0	0	0
Thawed Blood Processing System (MSI/II); (MSIII)	4Q		4Q	0	0	0	0	0
Interim Armored Vehicle (MSI); (MSII)		4Q		0	0	0	0	0
Critical Care System for Trauma and Transport (MSI/II); (MSIII)		3Q	4Q	0	0	0	0	0
Dental Field Treatment and Operating System (MSI); (MSII/III)			3Q	0	0	0	0	0
One Handed Tourniquet (MSI/II)			3Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603807A - Medical Systems Advanced Development**

**PROJECT**  
**836**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. AMEV		PM Bradley, Warren, MI	4655	0		0		0		0	0	0
b. No other contract exceeds \$1M			0	0		0		0		0	0	0
Subtotal:			4655	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

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

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603807A - Medical Systems Advanced Development**

**PROJECT**  
**836**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

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

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			6326	4228		4200		0	0	0	0	0
Subtotal:			6326	4228		4200		0		0	0	0

<b>Project Total Cost:</b>			10981	4228		4200		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>4 - DEM/VAL</b>				PE NUMBER AND TITLE <b>0603850A - Integrated Broadcast Service (JMIP/DISTP)</b>					PROJECT <b>472</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
472 INTEGRATED BROADCAST SERVICE (JMIP/DISTP)	0	0	1985	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE:** This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

The Integrated Broadcast Service (IBS) is the worldwide, DoD standard network for transmitting tactical and strategic intelligence and targeting data within a common format which will migrate to a single family of Joint Tactical Terminals (JTT) for improved operational jointness. The Common Integrated Broadcast Service - Modules (CIBS-M) is a totally integrated Joint Program (all services and Special Operations Command (SOCOM)) which was created to consolidate and replace existing IBS receiver functionality/capability, inherent with the duplicative existing systems, with a "common family" of IBS modules (both hardware and software). This is required to implement the IBS Plan and consolidate/eliminate duplication of effort previously spread across multiple PEs/SSNs DoD-wide. The Joint Tactical Terminal (JTT) program leverages, to the maximum extent possible, early tech-based efforts initiated by the National Reconnaissance Office (NRO). For those efforts which show promise, the management control will transition to the JTT JPO. The CIBS-M family of modules will be the "sole" provider of modules ensuring continued IBS interoperability to a variety of tactical receivers across DoD and the services. This program funds the design, development, test and evaluation of initial CIBS hardware and software modules, as well as implementing performance expanding modifications to the family of Joint Tactical Terminal (JTT) equipment, to train, equip and support the warfighter resulting with improved Joint Readiness and Interoperability. The JTT is a terminal that will be hosted on approximately 40 platform variations across all military services and other Government agencies. This terminal serves as a node that captures and disseminates encrypted intelligence broadcast to commanders in a network centric environment.

This system supports the legacy path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

FY 2000 program is funded under Program Element 0604739A, Project 702.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**472**

**FY 2001 Planned Program**

FY 2001 program is funded under Program Element 0604739A, Project 702.

**FY 2002 Planned Program**

- 800 IBS Format Implementation [Tactical Data Information Link, Version J (TADIL-J), JCC, DIICOE, DITSCAP (Block 3.0/follow-on software builds), DAMA and VMF Translator].
- 225 Multi-Service Operational Test & Evaluation (MOT&E) Test Support for transmit mode and other functionality.
- 675 IBS Waveform Development.
- 285 CORNFIELD Algorithm Development for IBS Migration.

Total 1985

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY 2001 PB)	0	0	0	0
Appropriated Value	0	0	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	0	0	0	0
Adjustments to Budget Years Since FY 2001 PB	0	0	1985	0
Current Budget Submit (FY 2002/2003 PB )	0	0	1985	0

Funds in FY 2002 and FY 2003 were transferred from Program Element 0604739A, Project 702 for continuation of that effort.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

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

PROJECT  
**472**

<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
V29600 JTT/CIBS-M (Tiara)	23808	26508	10345	0	0	0	0	0	0	0
PE 0604739A, Project 702	4519	6005	0	0	0	0	0	0	0	0

**C. Other Program Funding Summary:** The RDTE for this joint service program is funded from Army Projects 702 and 472. The required procurement quantity for each service is funded by each services procurement line.

**D. Acquisition Strategy:** The CIBS-M family of modules will be the sole provider of IBS Modules to a variety of IBS receivers across all DOD component agencies. The JTT/CIBS-M acquisition strategy has taken advantage of early streamlining initiatives and has addressed reducing O&S costs under the umbrella of Total Ownership Cost Reduction (TOCR) efforts. The Joint Program will competitively develop hardware and software modules and procure the required modules for integration into host receiver systems such as the JTRS in order to be compliant with the Army objective force. Additionally, this line provides for necessary modifications to IBS modules as the broadcast networks continue to evolve and modify their formats and protocols. The R&D program will fund the design and development of P3I (priority to those objective requirements in the JTT ORD that have not been satisfied). A competitive FFP contract was awarded in FY98 consisting of 9 option awards for JTT and CIBS-M which includes a 10 year warranty.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
IBS Format Implementation and Demonstration			1-4Q	0	0	0	0	0
IBS Waveform and CRYPTO Development			1-4Q	0	0	0	0	0
MOT&E (Transmit Mode & Other Functionality)			1Q	0	0	0	0	0
Milestone III Decision ( Receive Mode)			2Q	0	0	0	0	0
Milestone III Decision (Transmit & Receive Mode)			3Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**472**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Pre-Planned Product Improvements	FFP & CPFF	Raytheon, St. Petersburg, FL	0	0		1215	1Q	0	0	0	0	Continue
b . Algorithm Development	MIPR/T&M	NSA/SAIC	0	0		229	1Q	0	0	0	0	Continue
c . DITSCAP	T&M	Computer Science Corporation	0	0		100	1Q	0	0	0	0	Continue
Subtotal:			0	0		1544		0		0	0	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR		0	0		133	1Q	0	0	0	0	Continue
Subtotal:			0	0		133		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

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

**PROJECT**  
**472**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Support for MOT&E and IBS Format Demonstration	MIPR		0	0		175	1Q	0	0	0	0	Continue
<b>Subtotal:</b>			0	0		175		0		0	0	Continue
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management		PM JTT, Ft. Monmouth, NJ	0	0		133	1Q	0	0	0	0	Continue
<b>Subtotal:</b>			0	0		133		0		0	0	Continue
<b>Project Total Cost:</b>			0	0		1985		0		0	0	Continue



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>4 - DEM/VAL</b>			PE NUMBER AND TITLE <b>0603854A - ARTILLERY SYSTEMS - DEMVAL</b>					PROJECT <b>505</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
505 ARTILLERY SYSTEMS DEM/VAL	262152	352051	447949	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element supports the Program Definition and Risk Reduction (PDRR) efforts for the Crusader - Advanced Development Program. The Crusader system is the Army's next generation self-propelled howitzer (SPH) and artillery resupply vehicles (RSVs) designed to support Army XXI, Joint Vision 2010 and is an integral component of the Army's Transformation. Crusader will have significantly increased capabilities in the areas of lethality, mobility, survivability, resupply, command and control, and sustainability by capitalizing on emerging, advanced technologies. The SPH will also achieve increased lethality levels through independent operations. The RSVs will have significantly increased capabilities in the areas of resupply, mobility and survivability and will provide a single source of ammunition, fuel, propellant and other supplies for the SPH. In consonance with the Army Transformation, the Crusader development has been restructured to improve transportability and relevance to the Army's Transformation and objective force. The focus of the revised Crusader program is to increase all modes of deployability while retaining all of its Key Performance Parameters. The revised Crusader system reduces weight and volume and employs a change in resupply vehicle philosophy (an equal mix of tracked and wheeled resupply vehicles). The restructured program leverages the successful development to date and continues development activities that support the revised Crusader concept and significant weight reduction initiatives. Major subsystems and technologies remain largely unchanged, but will be repackaged. The program will remain in the Program Definition and Risk Reduction (PDRR) phase to improve deployability and relevance to the Army's transformation, and transition to Engineering and Manufacturing Development (EMD) in fiscal year 2002 with the procurement of EMD Long Lead Items. This system supports the Legacy transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 214379 Product Development: Redirected efforts to develop the lightweight Crusader concept under Crusader PDRR contract. Continued efforts in support of integration and risk reduction of critical technologies. Initiated development/Integration of software release 3 and integrated builds two and three. Completed Electronic Bench Top Developmental System (EBTDS). Integrated Crusader Emulator (ICE) development. Delivered 3.0 Operating System and Services (OSS). Selected Powerpack/Drive Train (PP/DT) developer and initiated development of new (PP/DT). Initiated Component Maturation/Weight reduction initiatives. Delivered SPH1 Emulator to YPG for testing.
- 35898 Support and Management: Continued project management efforts; to include engineering analysis, product development team support and engineering management activities. Continued coordination and development of MSII activities in accordance with new program approach.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603854A - ARTILLERY SYSTEMS - DEMVAL**

PROJECT  
**505**

## FY 2000 Accomplishments (Continued)

- 11875 Test and Evaluation: Initiated testing of SPH1 Emulator at YPG. Conducted Survivability Risk Reduction tasks (Compartmentation, Vehicle Section Tests - VST) testing. Purchased ammunition and propellant for program testing.

Total 262152

## FY 2001 Planned Program

- 290372 Product Development: Continue efforts by developing Preliminary Design for lightweight Crusader concepts under Crusader PDRR contract. Continue efforts in support of integration and risk reduction of critical technologies. Checkout and test Software Release 3. Start Integration/Assembly of new Powerpack/Drive Train. Initiate Survivability Risk Reduction Tasks. Continue component Maturation/Weight reduction initiatives. Configure Turret and Resupply Test Stands and demonstrate system performance/performance growth.
- 34146 Support and Management: Continue project management efforts; to include engineering analysis, product development team support and engineering management activities. Continue coordination and development of MSII activities in accordance with new program approach.
- 17247 Test and Evaluation: Continue testing of SPH 1 Emulator at YPG. Continue survivability risk reduction testing. Purchase of ammunition and propellant for program testing.
- 10286 Small Business Innovation Research/Small Business Technology Transfer

Total 352051

## FY 2002 Planned Program

- 396981 Product Development: Continue Detailed Design efforts for Lightweight Crusader concept under Crusader PDRR contract. Continue efforts in support of integration and risk reduction of critical technologies. Continue checkout and test Software Release 3. Initiate integration of release 5 software. Delivery of new prototype Powerpack/Drive Train. Continue Survivability Risk Reduction Tasks. Continue component Maturation/Weight reduction initiatives. Continue configuring turret and Resupply Test Stands and demonstrate system performance/performance growth.
- 38257 Support and Management: Continue project management efforts; to include engineering analysis, product development team support and engineering management activities. Continue coordination and development of MSII activities in accordance with new program approach.
- 12711 Test and Evaluation: Continue testing of SPH 1 Emulator at YPG. Initiate PDRR Performance T&E of Powerpack/Drive Train. Continue Survivability Risk Reduction Testing. Purchase of ammunition and propellant for program testing.

Total 447949

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603854A - ARTILLERY SYSTEMS - DEMVAL**

PROJECT  
**505**

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	266158	355309	446674	0
Appropriated Value	268137	355309	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-7006	0	0	0
c. Omnibus or Other Above Threshold Reductions	-1072	0	0	0
d. Below Threshold Reprogramming	3000	0	0	0
e. Rescissions	-907	-3258	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	1275	0
New Army Transformation Adjustment	0	0	0	0
Current Budget Submit (FY 2002/2003 PB )	262152	352051	447949	0

<b><u>C. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, BA5, Army, PE 0604854, D503	0	0	39449	0	0	0	0	0	0	0
Procurement, WTCV, Army, G83500	0	0	0	0	0	0	0	0	0	0
Procurement, WTCV, Army, G83600	0	0	0	0	0	0	0	0	0	0
RDTE, BA5, Army, PE 0604854, D2KT	0	225	199	0	0	0	0	0	0	0
Procurement, Ammo, Army, ER 8021	42601	39565	87413	0	0	0	0	0	0	0
RDTE, BA5, Army, PE 0604645, D175	2800	2180	0	0	0	0	0	0	0	0
Procurement, Ammo, Army, ER 8017	13951	45215	37548	0	0	0	0	0	0	0
Procurement, OPA, Army, D16500*	0	0	0	0	0	0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603854A - ARTILLERY SYSTEMS - DEMVAL**

PROJECT  
**505**

**C. Other Program Funding Summary (continued)**

FY 2000   FY 2001   FY 2002   FY 2003   FY 2004   FY 2005   FY 2006   FY 2007 To Compl Total Cost

**C. Other Program Funding Summary:** \*Funding summary represents a portion of the overall funding in D16500, Other Procurement, Army.

**D. Acquisition Strategy:** On 29 December 1994, a Sole Source-CPIF contract award was made selecting United Defense, Limited Partnership (UDLP) as the prime contractor for the PDRR phase of Crusader. General Dynamics Land Systems (Warren, MI) and General Dynamics Armament Systems (Burlington, VT) are the major sub-contractors in the areas of mobility and resupply respectively. On 19 March 1996, the Army changed the armament system for Crusader from liquid propellant (LP) to solid propellant (SP) as a consequence of cost and persistent technical problems. In June 1996, UDLP selected the government's Advanced Solid Propellant Armament System (XM297 cannon and Modular Artillery Charge System (MACS) as the basis for SP Crusader). On 6 November 1996, TACOM-ARDEC signed a Memorandum of Agreement (MOA) with UDLP establishing a unique teaming arrangement for the Government to provide engineering services to UDLP for the development of the SP armament system. Delay in the decision to switch from LP to SP and alignment of program activities to match fiscal profile required an adjustment in the schedule portion of the Acquisition Program Baseline (APB). On 23 October 1997, the Office of the Secretary of Defense approved Crusader's revised APB. The revised APB leveraged acquisition reform initiatives and featured a single continuous objective development path. The seamless transition from PDRR to EMD eliminated inefficiencies in ramping down/up during the milestone decision. In accordance with the Transformation Plan dated December 1999, Crusader went through a redefinition effort for reduced weight and increased transportability. A revised program schedule and budget was developed to support this effort. Additionally, in June 2000, a revision to the Crusader Acquisition Strategy was signed to support this path forward. The FY01 President's Budget reflected this change. Due to this restructure of both cost and schedule an adjustment to the Acquisition Program Baseline (APB) was required. On 18 December 2000, the Office of the Secretary of Defense approved Crusader's revised APB. The strategy for development of the lightweight Crusader is to build on the successful development to date on major subsystems; e.g. continue development and testing of the XM297 cannon, exercise the resupply subsystem and software in the Systems Integration Facility (SIF), and continue electronics and software development. The strategy is to continue these efforts, without a break, develop weight reduction technologies and initiatives, and re-design the system with the current contractor team.

**E. Schedule Profile**

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Delivery of SPH I Emulator & initiate testing *	2Q			0	0	0	0	0
Select Powerpack/Drivetrain Developer *	4Q			0	0	0	0	0
Delivery of prototype Powerpack/Drivetrain			4Q	0	0	0	0	0
Delivery of Gen I Electronics		3Q		0	0	0	0	0
Milestone II				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
4 - DEM/VAL

PE NUMBER AND TITLE  
0603854A - ARTILLERY SYSTEMS - DEMVAL

PROJECT  
505

**E. Schedule Profile (continued)**

FY 2000 FY 2001 FY 2002 FY 2003 FY 2004 FY 2005 FY 2006 FY 2007

\*Milestone completed

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603854A - ARTILLERY SYSTEMS - DEMVAL**

**PROJECT**  
**505**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Systems Contractor	SS/CPIF	UDLP, Minneapolis, MN	855971	222070	1Q	368331	1Q	0	0	0	0	0
b . Systems Development Engineering	PO	ARDEC, Picatinny Arsenal, NJ	64768	13629	1Q	8404	1Q	0	0	0	0	0
c . Systems Development Engineering	PO	TACOM, Warren, MI	3004	650	1Q	898	1Q	0	0	0	0	0
d . Systems Development Engineering	PO	ARL, Adelphi, MD	6532	2668	1Q	2542	1Q	0	0	0	0	0
e . Systems Development Engineering	PO	Various OGAs	9573	4933	1Q	1306	1Q	0	0	0	0	0
f . Systems Development Engineering	Various	Various contracts	15699	46422	1-2Q	15500	1-2Q	0	0	0	0	0
Subtotal:			955547	290372		396981		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603854A - ARTILLERY SYSTEMS - DEMVAL**

**PROJECT**  
**505**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Support	PO	PM Crusader, Picatinny Arsenal, NJ	25434	8177	1Q	8606	1Q	0	0	0	0	0
b . Development Support	PO	ARDEC, Picatinny Arsenal, NJ	37577	10254	1Q	9821	1Q	0	0	0	0	0
c . Integrated Logistics Support	PO	RIA, Rock Island, IL	911	179	1Q	236	1Q	0	0	0	0	0
d . Development Support	PO	TACOM, Warren, MI	7875	2027	1-2Q	2264	1-2Q	0	0	0	0	0
e . Development Support	PO	ARL, Adelphi, MD	3275	710	1-2Q	1144	1-2Q	0	0	0	0	0
f . Development Support	PO	Various OGAs	4815	1923	1-3Q	1846	1-3Q	0	0	0	0	0
g . Development Support	Various	Various contracts	11795	7209	1-3Q	10430	1-3Q	0	0	0	0	0
Subtotal:			91682	30479		34347		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603854A - ARTILLERY SYSTEMS - DEMVAL**

**PROJECT  
505**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Test and Evaluation	PO	TECOM (YPG, AZ; CSTA, APG, MD)	10005	7482	1-3Q	4718	1-3Q	0	0	0	0	0
b . Ammunition and propellant	PO	Various	22981	9765	1-3Q	7993	1-3Q	0	0	0	0	0
Subtotal:			32986	17247		12711		0		0	0	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management Support	SS/FP	Vector Research, Inc., MI	1722	600	1-2Q	600	1-2Q	0	0	0	0	0
b . Project Management Support	SS/FP	System Research & Integration, Inc., VA	405	150	1-2Q	156	1-2Q	0	0	0	0	0
c . Project Management Support	SS/FP	GSA, VA	130	0		0		0	0	0	0	0
d . Project Management Support	SS/FP	Camber, Inc., NJ	440	223	1-2Q	125	1-2Q	0	0	0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603854A - ARTILLERY SYSTEMS - DEMVAL**

**PROJECT  
505**

IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
e . Project Management Support	SS/FP	SAIC, VA	2113	864	1-2Q	773	1-2Q	0	0	0	0	0
f . Project Management Support	SS/FP	Robbins Gioia, VA	253	0		0		0	0	0	0	0
g . Project Management Support	SS/FP	Genisys, TX	191	105	1-2Q	110	1-2Q	0	0	0	0	0
h . Systems Engineering Support	SS/FP	PRC, VA	402	110	1Q	120	1Q	0	0	0	0	0
i . Systems Engineering Support	SS/FP	LMI, VA	458	0		140	1Q	0	0	0	0	0
j . Systems Engineering Support	SS/FP	SAIC, VA	81	0		0		0	0	0	0	0
k . Systems Engineering Support	SS/FP	Camber Inc, NJ	142	243	2Q	243	1-2Q	0	0	0	0	0
l . Systems Engineering Support	SS/FP	TBD	0	340	1-2Q	148	1-2Q	0	0	0	0	0
m . Software Development Support	SS/FP	Mitre Corporation, VA	1549	182	1Q	250	1Q	0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603854A - ARTILLERY SYSTEMS - DEMVAL**

**PROJECT  
505**

IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
n . Software Development Support	SS/FP	SAIC, VA	753	250	1-2Q	760	1-2Q	0	0	0	0	0
o . Software Development Support	SS/FP	High Performance Technology Inc (HPT- I), VA	236	394	1-2Q	332	1-2Q	0	0	0	0	0
p . Software Development Support	SS/FP	Averstar Inc, OK	0	206	2Q	153	1-2Q	0	0	0	0	0
q . Software Development Support	SS/FP	Camber Inc, NJ	291	0		0		0	0	0	0	0
r . SBIR/STTR	N/A	N/A	0	10286		0		0	0	0	0	0
Subtotal:			9166	13953		3910		0		0	0	0
Project Total Cost:			1089381	352051		447949		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603856A - Single Channel Anti-Jam Manportable (SCAMP)**

PROJECT  
**389**

COST (In Thousands)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
389 SCAMP BLK II	10336	20135	9895	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

The Single Channel Anti-Jam Manpackable (SCAMP) Block II Program has been restructured to support the Pathfinder decision to accelerate the Advanced Extremely High Frequency (AEHF) Satellite Program. The restructured SCAMP Block II program consists of two terminals, the SCAMP Manportable System Enhancement Program (SEP) terminal and the SCAMP Manpackable terminal. Each terminal supports the requirements in the Joint AEHF Operational Requirements Document (ORD) and provides worldwide anti-jam, low probability of intercept and detection and assured voice and data communications for the joint warfighter. Both terminals will transmit in the Extremely High Frequency (EHF) band and receive in the Super High Frequency (SHF) band and will operate over MILSTAR, other MIL-STD-1582 compatible payloads, and the future AEHF payload, providing secure voice and data services. The terminals will transmit and receive intelligence, situational awareness, as well as command and control traffic.

Under the restructured program, the existing SCAMP Block I terminal will be upgraded to support the AEHF Satellite Program. In support of the Joint AEHF ORD dated 1 Aug 00, the Manportable SEP will provide up to 64 Kbps Uplink (narrowband) and up to 128 Kbps Downlink AEHF capability to units, Division Headquarters and Above, and Special Operations Forces, that require increased data rates for range extended command and control communications.

The SCAMP Manpackable terminal supports the Joint ORD requirements for a Manpackable AEHF terminal which is lightweight (12 - 15 lbs) and provides for increased data rates and extended battery life. The Manpackable terminal will support lower echelon battalions and below, and priority ground tactical users, including Special Operations Forces.

This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 380 Restructured the program to support the Pathfinder and AEHF systems
- 8438 Continued development/testing of Baseline 1 Manpackable prototype Medium Data Rate (MDR) components for technology migration to AEHF
- 1168 Tested and evaluated Baseline 1 Manpackable MDR prototype components
- 350 Funded DARPA/US Army Simulation, Training and Instrumentation Command (STRICOM) sponsored efforts for power supply technology

Total 10336

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**4 - DEM/VAL**

PE NUMBER AND TITLE

**0603856A - Single Channel Anti-Jam Manportable  
(SCAMP)**

PROJECT

**389**

**FY 2001 Planned Program**

- 10672 Initiate development of modification kits for AEHF Manportable SEP Terminal
- 458 Procure 6 Government Furnished Equipment Articles for SCAMP SEP development testing
- 6500 Continue development and test of prototype components for the AEHF Manpackable Terminal: RDTE Test Qty - 2
- 1807 Support Joint AEHF Satellite Program, Baseband Working Groups, Technical Interchange Meetings and SEP acquisition documentation
- 100 Army Battle Command System (ABCS) system engineering and integration efforts
- 598 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)

Total 20135

**FY 2002 Planned Program**

- 6622 Continue AEHF Manportable SEP modification kit development
- 2976 Continue development, test and evaluation of prototype components for the AEHF Manpackable Terminal
- 297 Continue support to AEHF Satellite Program and Baseband Working Groups and Technical Interchange Meetings

Total 9895

**B. Program Change Summary**

	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	10622	20277	19867	0
Appropriated Value	10703	20277	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-286	0	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-81	-142	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	-9972	0
Current Budget Submit (FY 2002/2003 PB )	10336	20135	9895	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603856A - Single Channel Anti-Jam Manportable (SCAMP)**

PROJECT  
**389**

**Change Summary Explanation:**

Funding FY02/03: The funding decrease to Project D389 (FY02 -9,972; FY03 -10,057) are to realign project funding with current estimates and program priorities.

<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Other Procurement Army 2 - SSN: BC 4110	0	0	0	0	0	0	0	0	0	0

**D. Acquisition Strategy:** The SCAMP Block II acquisition strategy is based upon an evolutionary development approach which allows for the incremental design, development and test of system requirements.

Manportable SEP Terminal: The SCAMP Manportable SEP acquisition strategy will recapitalize the legacy Block I SCAMP to meet the Manportable AEHF requirement in the Joint AEHF ORD. A development modification to the existing Rockwell Collins contract was awarded on 28 Feb 01 to implement AEHF capability.

Manpackable Terminal: Throughout Engineering Feasibility, Lincoln Labs is designing, developing and testing prototype components for the Manpackable SCAMP. Lincoln Labs design data is also provided to industry through the distribution of CD ROMs. This design information is provided to encourage industry participation in the bidding process for System Development Demonstration (SDD). Following Milestone B, one contractor will be selected to develop and test SDD terminals. Lincoln Labs will continue to work with industry during SDD. Following Operational Testing, Full Rate Production of Manpackable SCAMPs will begin.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
MANPORTABLE (SEP) TERMINAL:				0	0	0	0	0
Decision Brief		1Q		0	0	0	0	0
Award Development Contract		2Q	2Q	0	0	0	0	0
Complete System Development/Test/Integration				0	0	0	0	0
Build Prototype Kits - AEHF				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603856A - Single Channel Anti-Jam Manportable  
(SCAMP)**

PROJECT  
**389**

<b><u>E. Schedule Profile (continued)</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Limited User Test - AEHF				0	0	0	0	0
Complete Retrofit Prototype Kits - AEHF				0	0	0	0	0
Award Production Contract				0	0	0	0	0
Complete Multi-Service Operational Test & Evaluation (MOTE)				0	0	0	0	0
Complete Retrofit Production Kits				0	0	0	0	0
MANPACKABLE TERMINAL:				0	0	0	0	0
Complete MDR Component Development	4Q			0	0	0	0	0
Initiate AEHF Component Development		1Q	1-4Q	0	0	0	0	0
Complete AEHF Prototype				0	0	0	0	0
Milestone B Decision				0	0	0	0	0
Award Development Contract				0	0	0	0	0
Complete Development of Terminals				0	0	0	0	0
Complete IOT&E				0	0	0	0	0
Milestone C - Full Rate Production				0	0	0	0	0
Award Production Contract				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603856A - Single Channel Anti-Jam Manportable**  
**(SCAMP)**

**PROJECT**  
**389**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Development	MIPR	Lincoln Labs Lexington, MA	13831	5093	1Q	1703	2Q	0	0	0	0	0
b . Other Contracts	Various	Various	2470	342		150		0	0	0	0	0
c . Govt Eng Support	MIPR	Various	1961	725		501		0	0	0	0	0
d . Major Contract	SS/CPAF	Rockwell Collins, Cedar Rapids, IA	0	9892	2Q	5196	2Q	0	0	0	0	0
e . GFE	MIPR	PM MILSATCOM	0	458	2Q	0		0	0	0	0	0
f . ABCS SE&I	PWD	TRW Carson, CA	0	100	2Q	0		0	0	0	0	0
Subtotal:			18262	16610		7550		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603856A - Single Channel Anti-Jam Manportable**  
**(SCAMP)**

**PROJECT**  
**389**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labs/OGAs	MIPR	Various	396	17		0		0		0	0	0
b . Support Contracts	Various	Various	1906	338		280		0		0	0	0
<b>Subtotal:</b>			2302	355		280		0		0	0	0
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Demonstration	MIPR	Lincoln Labs Lexington, MA	1525	0		0		0		0	0	0
b . DT&E	Various	Various	397	0		0		0		0	0	0
c . Major Contracts	SS/CPAF	Rockwell Collins Cedar Rapids, IA	0	0		0		0		0	0	0
d . LL DT&E	MIPR	Lincoln Labs Lexington, MA	964	763	1Q	1037	2Q	0		0	0	0
<b>Subtotal:</b>			2886	763		1037		0		0	0	0



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603856A - Single Channel Anti-Jam Manportable**  
**(SCAMP)**

**PROJECT**  
**389**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Govt Program Support	MIPR	Various	1733	1660		858		0	0	0	0	0
b . Support Contracts	Various	Various	872	149		170		0	0	0	0	0
c . SBIR/STTR			0	598		0		0	0	0	0	0
Subtotal:			2605	2407		1028		0		0	0	0
<b>Project Total Cost:</b>			26055	20135		9895		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>4 - DEM/VAL</b>			PE NUMBER AND TITLE <b>0603869A - MEADS</b>					PROJECT <b>01B</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
01B MEDIUM EXTENDED AIR DEFENSE SYSTEM (MEADS)	0	0	73645	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

The Medium Extended Air Defense System (MEADS) is an objective force system. It is an international cooperative program essential to fulfill the requirements of the U.S. Army and the U.S. Marine Corps for a low-medium air defense system in the 21st century. MEADS will offer a significant improvement in tactical mobility and strategic deployability over comparable missile systems. It will defend the maneuver force and other critical forward-deployed assets against short and medium range Theater Ballistic Missiles (TBMs), cruise missiles and other air-breathing threats throughout all phases of tactical operations. MEADS will operate both in an enclave with upper-tier systems in areas of debarkation and assembly and provide continuous coverage alone or with SHORAD systems in the division area of the battlefield during movement to contact and decisive operations. MEADS will be interoperable with other airborne and ground-based sensors and utilize a netted and distributed architecture and modularly-configurable battle elements to provide a robust, 360-degree defense against short and medium range TBMs, cruise missiles, unmanned-aerial-vehicles, tactical air to surface missiles, rotary-wing and fixed-wing threats.

The MEADS program has been restructured to leverage the interceptor from the PATRIOT Advanced Capability-3 (PAC-3) program and to extend the Program Definition/Validation (PD/V) phase with a three-year Risk Reduction Effort (RRE) that focuses on developing the critical technologies required for maneuver force protection and overall risk reduction. U.S. funded bridging effort commenced on 14 August 2000 to begin work on the highest risk and long-lead items in the RRE Scope of Work. International Memorandum of Understanding (MOU) was signed 27 Jun 2001, the RRE contract will be awarded 4th Qtr FY01.

There remains a critical void in maneuver force defense against short and medium range TBMs, cruise missiles, and low-to-medium altitude advanced air-breathing threats. This program will meet this challenge by integrating the PAC-3 missile and developing the critical technologies required for maneuver force protection, including development of a prototype lightweight launcher, 360-degree radar and tactical operation center. Concepts will be validated through proof-of-principle testing capitalizing on the already programmed Air-Directed Surface-to-Air Missile (ADSAM) demonstration efforts. The PAC-3 missile is the baseline interceptor for MEADS. Sensor and battle management software technology from both U.S. and international programs will be examined to enhance and augment organic-equipment functions, reducing development cost and risk. Improvements will be balanced against costs and the projected threat to develop a U.S. and allied capability to counter the maneuver force threat. The approach emphasizes prototyping of system-specific and surrogate hardware in key areas of Battle Management/Command, Control, Communications, Computers, and Intelligence (BM/C4I), fire control radar, and light weight launcher to satisfy mobility, strategic deployability and interoperability requirements. Cost as an Independent Variable (CAIV) analysis will be applied to the currently defined requirements. This is the first submission under the Army.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603869A - MEADS**

PROJECT  
**01B**

**FY 2002 Planned Program**

- 54195 Continue U.S. contribution to the NAMEADSMA International Program Office operational and administrative budgets for the MEADS RRE contract and continued development of digital-end simulation, continue development of prototype launcher, fire control and BMC4I hardware and associated software and test planning.
- 6740 Conduct program integration efforts that will examine DOD Joint Vision and Army transformation objective force mix and integration issues; support MEADS in the test and evaluation of AMD task force interoperability and BMDO family-of-system requirements; support development and maintenance of Joint Data Network interface requirements and planning and appropriate planning of MEADS manpower, training, human factors and safety issues.
- 7450 Continue funding for government agencies and support contracts to provide technical analysis and tools in specialty areas of lethality, BMC4I and system simulations, as well as support of conducting independent evaluations of contractor trades and analysis.
- 5260 Continue MEADS program management, support and salaries for both the national and international program offices. Includes U.S. efforts tied to national support of executing the replanned program and preparing for the Milestone B review.

Total 73645

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
President's Previous Budget (FY 2001 PB)	0	0	0	0
Appropriated Value	0	0	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	0	0	0	0
Adjustments to Budget Years Since (FY 2001 PB)	0	0	73645	0
Current Budget Submit (FY 2002/2003 PB )	0	0	73645	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**4 - DEM/VAL**

PE NUMBER AND TITLE  
**0603869A - MEADS**

PROJECT  
**01B**

FY 2002 (+73645): Transfer of funding to Army to continue MEADS development

<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
N/A	0	0	0	0	0	0	0	0	0	0

**D. Acquisition Strategy:** The MEADS acquisition strategy included competition between two transatlantic industrial teams in the PD-V phase. These two international entities prepared and competed for the Design, Development and Production (PD/V) phases. As the Department of Defense and partner nations restructured the program, the PD/V phase was extended with the selection of a single contractor team to conduct a three-year risk reduction effort (RRE). In August 2000, the Defense Acquisition Executive (DAE) approved entry in the RRE. In this phase, technology from Germany, Italy and the United States, including the PAC-3 missile, will be leveraged to define the most cost-effective solution to meet the MEADS operational requirements. The MEADS Product Office is also pursuing integration of MEADS BMC4I with the Project Manager, Air & Missile Defense Command and Control Systems (AMDCCS), to take advantage of other Army developments that can be incorporated into the MEADS program. Pending formal approval of the International MOU, the RRE contract will be awarded in 4th quarter FY01. A U.S.funded bridging effort commenced on 14 August 2000 to work on the the high-risk areas and long-lead items within the scope of the RRE effort. At the 18th Steering Committee (SC) meeting, the participant nations agreed that in future consideration of RRE cost share the value of this effort should be recognized as applicable services.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Component demonstration completed				0	0	0	0	0
Demonstrate MEADS functionality				0	0	0	0	0
Program review			2Q	0	0	0	0	0
Milestone B				0	0	0	0	0
Design and development phase contract award				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY  
4 - DEM/VAL**

**PE NUMBER AND TITLE  
0603869A - MEADS**

**PROJECT  
01B**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Risk Reduction	TBD	NAMEADSMA	0	0		52695	2Q	0	0	0	0	0
Subtotal:			0	0		52695		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Int'l Program Office	LOE	NAMEADSMA	0	0		1500	2Q	0	0	0	0	0
b . Program Integration	LOE	PEO AMD/BMDO	0	0		6740	2Q	0	0	0	0	0
c . U.S. Contracts	LOE	MEADS Prod Ofc	0	0		2980	2Q	0	0	0	0	0
d . U.S. OGAs	MIPR	MEADS Prod Ofc	0	0		4470	2Q	0	0	0	0	0
Subtotal:			0	0		15690		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**4 - DEM/VAL**

**PE NUMBER AND TITLE**  
**0603869A - MEADS**

**PROJECT**  
**01B**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Internal Operating	In-House	MEADS Prod Ofc/NAMEADSMA	0	0		5260	2Q	0	0	0	0	0
Subtotal:			0	0		5260		0		0	0	0

Project Total Cost:			0	0		73645		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> 5 - ENG MANUFACTURING DEV				<b>PE NUMBER AND TITLE</b> 0604865A - Patriot PAC-3 Theater Missile Defense Acquisition				<b>PROJECT</b> 01C		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
01C PATRIOT ADVANCED CAPABILITY (PAC) - 3	0	0	107100	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

PATRIOT is a long range, mobile, field Army and Corps air defense system, using guided missiles to simultaneously engage and destroy multiple target types at varying ranges. The PATRIOT Advanced Capability 3 (PAC-3) Upgrade Program is the latest evolution of the phased materiel change improvement program to PATRIOT. The materiel changes will provide improved performance across the spectrum for system and threat intercept performance. In addition to modernization of the ground support equipment, funding resources a new missile design providing a high velocity, hit to kill, surface to air missile with the range, accuracy, and lethality necessary to effectively intercept and destroy tactical missiles with Nuclear Biological Chemical/High Explosive (NBC/HE) warheads and air breathing threats. The full capability will provide defense against short to medium range theater ballistic missiles (TBM's), cruise missiles (CM's), unmanned aerial vehicles (UAVs) and other air breathing threats as part of the Theater Missile Defense (TMD) family of systems, a multi-layered Theater Air and Missile Defense Architecture. PATRIOT is pursuing integration of PATRIOT Battle Management Command, Control, Communications and Intelligence (BMC3I) with the Project Manager, Air Defense Command and Control Systems to take advantage of previous U.S. Army developments that can be incorporated into the PATRIOT program. As a preliminary result of the strategy review, this program transferred from BMDO to Army starting in FY02.

**FY 2002 Planned Program**

- 42787 Complete PAC-3 missile Engineering and Manufacturing Development (EMD) program.
- 11000 Initiate follow-on test program with Lockheed Martin Missiles & Fire Control (LMMFC)-Dallas and Raytheon.
- 31923 Continue Operational Test & Evaluation.
- 6390 Continue PAC-3 Target and Test Support
- 15000 Evolutionary Development

Total 107100

\*FY00/01 funding is included in the Ballistic Missile Defense Organization (BMDO) budget

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604865A - Patriot PAC-3 Theater Missile Defense Acquisition**

PROJECT  
**01C**

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY 2001 PB)	0	0	0	0
Congressional Adjustments	0	0	0	0
Appropriated Value	0	0	0	0
a. Congressional Reductions (FFRDC, Inflation, etc.)	0	0	0	0
b. OSD Reductions	0	0	0	0
c. Congressional Reprogramming	0	0	0	0
d. Emergency Supplemental	0	0	0	0
e. Below Threshold Reprogramming	0	0	0	0
Adjustments to Budget Years Since FY 2001 PB	0	0	107100	0
Current Budget Submit (FY 2002/2003 PB )	0	0	107100	0

Funding:  
FY 2002 (+107100): Program transferred from the Ballistic Missile Defense Organization starting in FY02. Funds will support completion of the EMD program, start the follow on test program, and initiate evolutionary development.

<b><u>C. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PAC-3, SSN C49200	0	0	676574	0	0	0	0	0	0	0



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604865A - Patriot PAC-3 Theater Missile Defense Acquisition**

PROJECT

**01C**

**D. Acquisition Strategy:** The design objective of the PATRIOT system is to provide a system capable of being modified to cope with the evolving threat. This strategy minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems. The PATRIOT program consists of two interrelated acquisition programs - the PATRIOT PAC-3 Growth Program and the PAC-3 Missile Program. Growth Program modifications are grouped into configurations which are scheduled to be fielded in the same time frame. Configuration groupings are a convenience for managing block changes and are not a performance related grouping. However, incremental increases in performance are determined for each configuration in order to provide benchmarks for configuration testing and for the development of user doctrine and tactics. The PAC-3 Missile Program focuses on developing, fabricating and testing the high velocity, hit to kill, surface to air missile and associated ground support equipment to provide essential increases in battle space, accuracy, lethality and firepower to counter and destroy evolving air defense threats. The missile performance is demonstrated through a series of flight tests and modeling and simulation activities. A PAC-3 Follow-on Test Program will supplement EMD by demonstrating system and missile improvements and capabilities not verified during EMD flight tests. Evolutionary development efforts will further improve system capabilities against emerging and reactive threats.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Configuration 3 Initial Operational Test & Evaluation (IOT&E)			1-4Q	0	0	0	0	0
PAC-3 FUE		4Q		0	0	0	0	0
Milestone III			4Q	0	0	0	0	0
IOC				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604865A - Patriot PAC-3 Theater Missile Defense**  
**Acquisition**

**PROJECT**  
**01C**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PAC-3 Missile EMD	SS-CPIF	LMMFC, TX	0	0		12000	1-4Q	0	0	0	0	0
b . PAC-3 Missile Integration	SS-CPIF	Raytheon, MA	0	0		6000	1-4Q	0	0	0	0	0
c . RDEC	MIPR	MRDEC, AL	0	0		1490	1Q	0	0	0	0	0
d . PAC-3 Missile FOT	SS-CPIF	LMMFC, TX	0	0		6000	1Q	0	0	0	0	0
e . RSC Integration	SS-CPIF	Raytheon, MA	0	0		5000	1Q	0	0	0	0	0
f . PAC-3 Evolutionary Development			0	0		15000	1-4Q	0	0	0	0	0
Subtotal:			0	0		45490		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604865A - Patriot PAC-3 Theater Missile Defense Acquisition</b>	<b>PROJECT</b> <b>01C</b>
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . SETA	C-CPAF	CAS, AL	0	0		4690	1Q	0	0	0	0	0
b . OGA/In-House	PO		0	0		10407	1Q	0	0	0	0	0
c . Engineering Support	SS-CPIF	Raytheon, MA	0	0		2300	1-4Q	0	0	0	0	0
Subtotal:			0	0		17397		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . White Sands Missile Range	MIPR	WSMR, NM	0	0		5900	1Q	0	0	0	0	0
b . Operational Test Support	MIPR		0	0		31923	1Q	0	0	0	0	0
c . Targets	MIPR	SMDC, AL	0	0		6390	1Q	0	0	0	0	0
Subtotal:			0	0		44213		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604865A - Patriot PAC-3 Theater Missile Defense Acquisition</b>	PROJECT <b>01C</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			0	0		107100		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>			PE NUMBER AND TITLE <b>0604201A - Aircraft Avionics</b>						PROJECT <b>C97</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C97 ACFT AVIONICS	10053	41893	57474	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This Program Element (PE) funds the development of avionics systems required to horizontally and vertically integrate the battlefield. Tasks in this PE support research efforts in the engineering and manufacturing development phases of these systems. All of these systems support the Legacy-to-Objective transition path of the Transformation Campaign Plan.

The Army Airborne Command and Control System (A2C2S) is the Army's only airborne C2 system supporting corps, division and brigade commanders. This system is critical to enhance the Battle Command Group's ability to effectively perform combat unit operations and serve as a force multiplier in Army XXI. It provides the capability to access the tactical internet to manipulate, store, manage, and analyze situational awareness information, intelligence data, mission plans, and mission progress data to support the command and control decision making process. The A2C2S will provide situational awareness and command & control hosting Army Battle Command System (ABCS) such as Maneuver Control Systems (MCS), All Source Analysis System (ASAS), Advanced Field Artillery Tactical Data System (AFATDS), and Force XXI Battle Command Brigade and Below (FBCB2). The A2C2S provides communication capability that supports deep operations with non-line-of-sight communications such as High Frequency (HF) and Demand Assigned Multiple Access (DAMA), and Satellite Communications System Satellite Command (SATCOM). In addition, the system has the potential to improve the ability of state, local, and federal agencies to communicate and coordinate in a crisis environment such as hurricanes, forest fires, or terrorist incidents using weapons of mass destruction.

The Improved Data Modem (IDM) is the key link to joining Army Aviation with the digital battlefield and provides digital communication interoperability and flexibility on a fluid battlefield. Developed as an open system architecture, the IDM takes advantage of commercially available software and hardware solutions to enforce common communications protocols and the Joint Variable Message Format (JVMF). IDM improves Army Aviation's lethality and operational tempo through the exchange of fast and accurate data-burst communications through the Army's Fire Support and Tactical Internet (TI), providing seamless communications across the digital battlefield. These RDT&E funds are required to develop and integrate IDM hardware and software interfaces for the CH-47F, UH-60M, and S/W Development for RAH-66 embodying the Embedded Battlefield Command (EBC) software. The IDM provides a flexible, software-driven digital messaging system interoperable with existing Battlefield Operating Systems and the Joint Forces.

The Joint Tactical Radio System (JTRS) aircraft installation lays the foundation for achieving network connectivity across the radio frequency (RF) spectrum and provides the means for digital information exchanges, both vertically and horizontally, between joint warfighting elements, while enabling connectivity to civil and national authorities. The JTRS will provide affordable, high-capacity, tactical radios to meet the interoperability requirements with all DOD services. The JTRS will provide an internal capability through an open systems architecture approach in compliance with

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)****June 2001**

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**C97**

the joint technical architecture which improves system performance at minimal cost and effort. These RDT&E funds are required to design, develop, integrate, and qualify the aircraft installation kits (A Kits) to accommodate the JTRS in Army rotary wing aircraft. Installed A Kits and JTRS will provide the AH-64D, CH-47F, UH-60M/Q, and Special Operations Aircraft the capability to transmit receive, bridge and gateway between similar and diverse waveforms over multiple communications media & networks.

**FY 2000 Accomplishments**

- 2985 Continued Limited System Development and Evaluation BLK I (A2C2S)
- 3762 Continued Limited A2C2S Prototype Fabrication and Platform Integration
- 1440 Continued Limited Systems Engineering and Logistics (A2C2S)
- 644 Integrated Development of IDM into CH-47F Systems Integration Lab in Support of IDM Integration
- 1126 Initiated Development of CH-47F Detail Design Data for Wiring in Support of IDM Integration
- 96 Initiated Program Management Support for the IDM-CH-47F Integration Effort

Total 10053

**FY 2001 Planned Program**

- 3740 Continue System Development and Evaluation BLK I (A2C2S)
- 6250 Develop, Fabricate, & Deploy Prototype Systems 1&2, Initiate System 3 (A2C2S)
- 3805 Continue Systems Engineering, Logistics, and Software Integration (A2C2S)
- 212 ABCS System Engineering and Integration Efforts (A2C2S)
- 1245 Initiate Test Planning, Developmental Testing, and Prepare for DCX II (A2C2S)
- 477 Deploy System 1 to 4ID (A2C2S)
- 4600 Initiate effort to integrate IDM/EBC software into the UH-60M
- 10615 Complete CH-47F Test Plans, Software Development, and B-Kit Integration in Support (IDM)
- 835 Initiate Information Assurance Efforts (IDM)
- 1000 Initiate software development for the RAH-66 (IDM)

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)****June 2001**

BUDGET ACTIVITY

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PROJECT

**C97****FY 2001 Planned Program (Continued)**

- 897 Continue Program Management Support (IDM)
- 1500 Initiate development of JTRS A-Kit for AH-64D, CH-47F, and UH-60M/Q
- 2372 Initiate Systems Engineering and Logistics efforts (JTRS)
- 349 Initiate Program Management support (JTRS)
- 1000 Initiate ICNIA compliance for JTRS requirements/architecture
- 175 Initiate IDE Development (JTRS)
- 1576 Initiate contractual effort to support AH-64D, CH-47F, and UH-60M/Q (JTRS)
- 1245 Small Business Innovative Research (SBIR)/ Small Business Technology Transfer Program (STTR)

Total 41893

**FY 2002 Planned Program**

- 5820 Continue System Development and Evaluation BLK I and Initiate BLK II (A2C2S)
- 3151 Award Demonstration Contract (Leader Follower Concept) (A2C2S)
- 11132 Complete and Deploy System 3, Develop, Fabricate, and Deploy Systems 4 & 5, Initiate Systems 6 & 7 (A2C2S)
- 3124 Retrofit Systems 1 & 2 (A2C2S)
- 1228 Initiate Development and Fabrication on UH-60M (A2C2S)
- 5646 Continue Systems Engineering, Logistics, and Software Integration (A2C2S)
- 280 ABCS System Engineering and Integration (A2C2S)
- 4196 Continue Developmental Testing, Participate in DCX II, and Prepare for LUT (A2C2S)
- 775 Support System 3 Deployment to SFOR with 101st (A2C2S)
- 4347 Continue effort to integrate IDM/EBC software into the CH-47F.
- 229 Continue Program Management Support (IDM)
- 8663 Continue development of JTRS A-Kit, CH-47F, and UH60-M/Q and procure prototypes for AH-64D
- 3452 Continue Systems Engineering and Logistics efforts (JTRS)
- 877 Continue program management support for the A-Kit development

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604201A - Aircraft Avionics**

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**C97**

**FY 2002 Planned Program (Continued)**

- 2061 Initiate development of JTRS A-Kit for SOA
- 2308 Continue ICNIA compliance to JTRS requirements/architecture
- 185 Continue IDE development

Total 57474

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	6324	42280	33411	0
Appropriated Value	6372	42280	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-171	0	0	0
c. Omnibus or Other Above Threshold Reductions	-26	0	0	0
d. Below Threshold Reprogramming	3900	0	0	0
e. Rescissions	-22	-387	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	24063	0
Current Budget Submit (FY 2002/2003 PB )	10053	41893	57474	0

Adjustments to FY 2002 and FY 2003 are for development, demonstration and integration of A2C2S on the UH-60M, and integration and other efforts related to the JTRS program.



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604201A - Aircraft Avionics</b>	PROJECT <b>C97</b>
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<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Airborne Command and Control SSN AA0710 (A2C2S)	0	0	0	0	0	0	0	0	0	0
Aircraft Avionics SSN AA0700 (IDM)	14733	32194	42900	0	0	0	0	0	0	0
Joint Tactical Radio System SSN AA0702 (JTRS)	0	0	0	0	0	0	0	0	0	0

**D. Acquisition Strategy:** This project is comprised of multiple systems:

- 1)The A2C2S is being developed by the Government with the Aircraft OEM as a consultant. A competitive contract will be awarded in FY02 with options.
- 2)The IDM/EBC nonrecurring engineering and software development will be performed by Rockwell/Boeing for CH-47F, by Sikorsky for UH-60M, and by TRW/ICI for RAH-66. The B-kits will be procured and installed during CH-47F and UH-60M production.
- 3)Initial JTRS A-Kit hardware development, installation and integration will be procured via host platform vendor. Full production contract will be competitively awarded.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Continue System Development and Evaluation BLK I and BLK II (Initiate BLK II in FY02) (A2C2S)	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Continue/Complete A2C2S Prototype Fabrication and Platform Integration (Systems 1 to 7) (A2C2S)	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Continue Software Engineering, Software Integration, and Logistics Planning for A2C2S	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Initiate/Complete Demonstration Contract (Leader Follower Concept) (A2C2S)			3-4Q	0	0	0	0	0
Deploy System 1 to 4ID (A2C2S)		3Q		0	0	0	0	0
Support System 3 Deployment to SFOR with 101st AASLT DIV (A2C2S)			2-4Q	0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604201A - Aircraft Avionics</b>	PROJECT <b>C97</b>
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<b>E. Schedule Profile (continued)</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Continue Developmental Testing (A2C2S)		2-4Q	1-4Q	0	0	0	0	0
DCX II (A2C2S)			1Q	0	0	0	0	0
LUT (A2C2S)				0	0	0	0	0
Integrated development of IDM into CH-47F Systems Integration Lab in support of IDM integration	2Q			0	0	0	0	0
Initiated development of CH-47F detail design data for wiring in support of IDM integration	2Q			0	0	0	0	0
Initiated/Continue effort to Integrate IDM/EBC software into the UH-60M and CH-47F		2Q	2Q	0	0	0	0	0
Complete CH-47F test plans, software development, and B-Kits in support of IDM		1-2Q		0	0	0	0	0
Initiate RAH-66 Software Development(IDM)		2Q		0	0	0	0	0
Initiate/Continue Program Management support for IDM		1-4Q	1-4Q	0	0	0	0	0
Conduct Information Assurance Certification effort for IDM		3Q		0	0	0	0	0
Receive JTRS MDAP decision		1Q		0	0	0	0	0
Initiate development of JTRS A-Kit for AH-64D, CH-47F, and UH-60M/Q		3Q		0	0	0	0	0
Initiate development of JTRS A-Kit for SOA			1Q	0	0	0	0	0
Initiate/Continue Systems Eng/Log Efforts for JTRS		1-4Q	1-4Q	0	0	0	0	0
Initiate/Continue Prog Mgmt Support for JTRS A-Kit		1-4Q	1-4Q	0	0	0	0	0
Initiate system level testing for AH-64D, CH-47F, UH-60M/Q, and SOA for JTRS				0	0	0	0	0
ICNIA Efforts for JTRS		2Q	1-4Q	0	0	0	0	0
Integrated Digital Environment (IDE) for JTRS		2Q	1-4Q	0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604201A - Aircraft Avionics**

**PROJECT**  
**C97**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Dev and Eval (BLK I and BLK II) (A2C2S)	Various	Various	43133	3740	1Q	5821	1Q	0	0	0	0	Continue
b . Prototype Integration (Sys 1-7 & UH-60M)(A2C2S)	MIPR/CPAF	Army Aviation TD Ft. Eustis, VA/TBD	7732	6250	1Q	12361	1Q	0	0	0	0	Continue
c . Demonstration Contract (Leader Follower Concept) (A2C2S)	CPAF/C	TBD	0	0		6275	2Q	0	0	0	0	Continue
d . Systems Engineering (A2C2S)	Various	Various	20387	943	1Q	1946	1Q	0	0	0	0	Continue
e . GFE (A2C2S)	MIPR	Naval Research Lab, Wash, D.C.	578	0		0		0	0	0	0	0
f . Integrated Development of IDM into CH47-F SIL (IDM)	MIPR	AMCOM, AL	644	0		0		0	0	0	0	0
g . Initiated development of CH-47F wiring design (IDM)	MIPR	AMCOM, AL	1126	0		0		0	0	0	0	0
h . UH-60M and CH-47F Integration of B-Kit (IDM)	MIPR	AMCOM,AL	0	4600	2-3Q	4346	2Q	0	0	0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604201A - Aircraft Avionics**

**PROJECT**  
**C97**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
i . CH-47F Test Plans, software development and B-Kit Integration in support of the IDM	MIPR	Various	0	10615	1-2Q	0		0	0	0	0	0
j . RAH-66 Software Development(IDM)	MIPR	Naval Research Lab, Wash, D.C.	0	1000	2Q	0		0	0	0	0	0
k . A-Kit AH-64D , CH-47F, and UH-60M/Q R&D Contract (JTRS)	CPFF	Boeing, Mesa, AZ, Boeing, Philadelphia, PA and Sikorsky, Stratford, CT	0	1500	3Q	8663	2Q	0	0	0	0	Continue
l . Systems Engineering, Logistics Efforts (JTRS)	MIPR	Various	0	2372	1-4Q	3452	1-4Q	0	0	0	0	Continue
m . A-Kit SOA R&D Contract (JTRS)	CPFF	TBD	0	0		2061	1Q	0	0	0	0	Continue
n . Contractual efforts to support platforms (JTRS)	MIPR	Various	0	1575	2-3Q	0		0	0	0	0	0
Subtotal:			73600	32595		44925		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604201A - Aircraft Avionics**

**PROJECT**  
**C97**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Software Integration(A2C2S)	CPFF	TBD	0	250	1Q	980	1Q	0	0	0	0	Continue
b . Systems Logistics Support (ILS,NET,Tech)(A2C2S)	Various	Various	1219	1455	1Q	1474	1Q	0	0	0	0	Continue
c . System 1 Deployment to 4ID (A2C2S)	Various	Various	0	477	3Q	0		0	0	0	0	0
d . System 3 Deployment to SFOR with 101st (A2C2S)	Various	Various	0	0		775	1Q	0	0	0	0	0
e . ABCS System Engineering and Integration Efforts	MIPR	Various	0	212	1Q	280	1Q	0	0	0	0	Continue
f . Software Development (A2C2S)	MIPR	Naval Research Labs, Wash, D.C.	18209	0		0		0	0	0	0	0
g . Training Development (A2C2S)	CPFF	CAS, AL	90	0		0		0	0	0	0	0
h . Configuration Management/Technical Data (A2C2S)	MIPR	Naval Research Lab Wash, D.C.	1449	0		0		0	0	0	0	0
i . Technical Data (A2C2S)	CPFF/SS	Dynamics Research Corp, Andover, MA NRL, Wash D.C.	772	0		0		0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

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**0604201A - Aircraft Avionics**

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**C97**

II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . ICNIA compliance to JTRS requirements (JTRS)	MIPR	TRW, CA	0	1000	2Q	2308	1-4Q	0	0	0	0	0
k . Integrated Digital Environment for JTRS	CPFF	ARINC, NJ	0	175	2Q	185	2Q	0	0	0	0	0
Subtotal:			21739	3569		6002		0		0	0	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Developmental Test & Evaluation (A2C2S)	MIPR	ATEC/RTTC/AATD/ AED	0	1245	1Q	2516	1Q	0	0	0	0	Continue
b . DCX II (FY02) and LUT (FY03) (A2C2S)	Various	Various	351	0		1680	1Q	0	0	0	0	Continue
c . Operational Test & Evaluation (A2C2S)	MIPR	TEXCOM FT. Hood, TX	250	0		0		0	0	0	0	0
d . IA Certification (IDM)	MIPR	AMCOM, AL	0	835	3Q	0		0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604201A - Aircraft Avionics</b>						PROJECT <b>C97</b>		
III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			601	2080		4196		0		0	0	Continue
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Operations (A2C2S)	Various	Various	5503	1157	1Q	1245	1Q	0	0	0	0	Continue
b . Government Engineering Support (A2C2S)	MIPR	AMCOM, AL	742	0		0		0	0	0	0	0
c . PM Spt (Digitization)	CPFF/C MIPR	AMCOM PATS, AL	215	0		0		0	0	0	0	0
d . PM Spt (IDM)	MIPR	AMCOM, AL	96	897	1-4Q	229	1-4Q	0	0	0	0	Continue
e . PM Spt (JTRS)	MIPR	AMCOM, AL	0	350	1-4Q	877	1-4Q	0	0	0	0	Continue
f . SBIR/STTR			0	1245		0		0	0	0	0	0
Subtotal:			6556	3649		2351		0		0	0	Continue
Project Total Cost:			102496	41893		57474		0		0	0	Continue

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604220A - Armed, Deployable OH-58D</b>					PROJECT <b>538</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
538      KIOWA WARRIOR LFTE	0	528	2345	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE:** This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

Program funding provides static and dynamic Live Fire Test and Evaluation (LFT&E) for the Kiowa Warrior Mast Mounted Sight (MMS) and Main Rotor Blades (MRB). There will be additional quasi-static testing performed on the MRBs. The ballistic testing, required by Title X, US Code 2366, was documented in the Kiowa Warrior Live Fire Independent Evaluation Plan/Test Design Plan (IEP/TDP) dated February 1999, and approved by the Deputy Under Secretary of the Army, Operations Research (DUSA (OR)) and the Director, Operational Test and Evaluation (DOTE). LFT&E has not been conducted on the Kiowa Warrior to date because it had predated the statutory requirements. To complete the dynamic portion of the LFT&E, a ground test vehicle (GTV) will be assembled. The GTV will consist of fully functional but non-flightworthy airframe and engine parts. No radios, or working mission equipment will be installed. Only essential flight instruments will be installed for safe ground operations. Plywood mock-ups or empty black boxes will be used in place of mission equipment. The MMS static testing will be conducted with the MMS attached to a maintenance stand. The dynamic testing will be conducted with the MMS fastened on the GTV operating at 100% rotor speed. The quasi-static MRB testing will be conducted while various loads are applied to the blade specimens. Each test shot defined in the IEP/TDP will vary from caliber 7.62mm to 30 mm. All testing will occur on a controlled range at Aberdeen Proving Grounds, MD.

This system supports the Legacy transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

Project not funded in FY 2000.



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604220A - Armed, Deployable OH-58D**

PROJECT  
**538**

**FY 2001 Planned Program**

- 468 Developmental/Operational Test & Analysis
  - 11 Battle Damage Assessment
  - 33 Government Furnished Equipment (GFE)
  - 16 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)
- Total 528

**FY 2002 Planned Program**

- 1106 Development/Operational Test & Analysis
  - 11 Battle Damage Assessment
  - 1228 Mock-up Cost
- Total 2345

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	0	532	2335	0
Appropriated Value	0	532	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	0	-4	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	10	0
Current Budget Submit (FY 2002/2003 PB )	0	528	2345	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604220A - Armed, Deployable OH-58D</b>	PROJECT <b>538</b>
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<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
APA AZ2200 - Kiowa Warrior	41940	41531	42600	0	0	0	0	0	0	0

**D. Acquisition Strategy:** Test planning and actual testing will be conducted by Army Research Laboratories (ARL) and by Bell Helicopter Textron, Inc. Test results will be analyzed by ARL, the Army Test and Evaluation Center (ATEC), the Evaluation Analysis Center (EAC), and contractors. The US Army Aviation Logistics School (USAALS) will perform battle damage assessment and both Bell Helicopter and Boeing will provide support for the planning, testing and analysis efforts.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Test - Phase I (Static shots)		1-4Q	1-4Q	0	0	0	0	0
Test - Phase II (Dynamic shots)			4Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604220A - Armed, Deployable OH-58D**

**PROJECT**  
**538**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Planning & Analysis	MIPR	ARL OPTEC/EAC, ABERDEEN, MD	0	314	1-2Q	167	1Q	0	0	0	0	0
b . Hardware Cost Assembly	MIPR	OLR, KILLEEN, TX	0	33	1Q	1228	1Q	0	0	0	0	0
c . Bell Helicopter	SS/CPFF	FORT WORTH, TX	0	0		950	1Q	0	0	0	0	0
d . Boeing	SS/CPFF	Annaheim, CA	0	181	1Q	0		0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604220A - Armed, Deployable OH-58D**

**PROJECT**  
**538**

III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	528		2345		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

<b>Project Total Cost:</b>			0	528		2345		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604223A - COMANCHE**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	448702	608410	787866	0	0	0	0	0	0	0
2LT COMANCHE OPER TEST	48	19	166	0	0	0	0	0	0	0
327 COMANCHE	423795	570126	732890	0	0	0	0	0	0	0
C72 T-800 ENGINE ED (LH)	24859	38265	54810	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element provides for the development and operational testing and evaluation of the RAH-66 Comanche and the T800-801 growth engine. The Comanche is a multi-mission aircraft optimized for the critical battlefield mission of tactical armed reconnaissance. It provides a globally self-deployable attack platform for light/contingency forces. Comanche provides the solution to reconnaissance deficiencies of no night/adverse weather/high/hot/stand-off capability and is a key component on the digitized battlefield in winning the information war. The Comanche is the Army's technology leader and provides significant horizontal technology transfer within the Army and DoD. Project C72 provides for continued development and qualification of the T800-801 growth engine and air vehicle support for integration into the Comanche aircraft. Project 2LT includes funding for the operational testing of Comanche to include modeling and simulation accreditation for Early User Test, Limited User Test and Initial Operational Test and Evaluation. Project 327 provides for development of the airframe, mission equipment package, integration and qualification of the complete system to include logistic support, training, and training devices.

This system supports the Objective transition path of the Transformation Campaign Plan.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604223A - COMANCHE**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	463124	614041	764621	0
Appropriated Value	467069	614041	0	
Adjustments to Appropriated Value		0	0	
a. Congressional General Reductions		0	0	
b. SBIR / STTR	-12322	0	0	
c. Omnibus or Other Above Threshold Reductions	-1887	0	0	
d. Below Threshold Reprogramming	-2100	0	0	
e. Rescissions	-2058	-5631	0	
Adjustments to Budget Years Since FY2001 PB		0	23245	
Current Budget Submit (FY 2002/2003 PB )	448702	608410	787866	0

Adjustments to FY 2002 and FY 2003 are for the hot bench program, and other risk reduction efforts.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604223A - COMANCHE</b>					PROJECT <b>2LT</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2LT COMANCHE OPER TEST	48	19	166	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project provides for progressive test requirements in support of the test and fielding of the RAH-66 Comanche helicopter. Requisite activities include Force Development Test and Experimentation (FDTE) I, II, III and IV dedicated to tactics, techniques and procedures, and Limited User Test (LUT) that provide operational input early in the system's life cycle, the Army Training Evaluation Program (ARTEP) and Initial Operational Test and Evaluation (IOT&E) in support of a Milestone III production decision.

**FY 2000 Accomplishments**

- 29 Independent evaluation at contractor test facility in support of LUT
  - 9 Support Comanche Portable Cockpit for Customer Test I
  - 10 Independent evaluation assessment of Mission Equipment Package (MEP) subcomponents at contractor sites
- Total 48

**FY 2001 Planned Program**

- 18 Independent evaluation at contractor test facility in support of LUT
  - 1 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) programs.
- Total 19

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604223A - COMANCHE**

PROJECT  
**2LT**

**FY 2002 Planned Program**

- 66 Independent evaluation at contractor test facility in support of LUT
  - 50 Validate four crew station simulators (Comanche Portable Cockpits) in support of FDTE II
  - 50 Instrumentation and Targets to support FDTE III
- Total 166

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
A08300 Comanche	0	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** This project is for test and evaluation effort to support Comanche acquisition.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Prepare for Customer Test I	2Q			0	0	0	0	0
Conduct Customer Test I	3Q			0	0	0	0	0
Conduct independent evaluation at contractor test facility supporting LUT	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Prepare for LUT			4Q	0	0	0	0	0
Prepare for FDTE II			4Q	0	0	0	0	0
Conduct FDTE II				0	0	0	0	0
Conduct LUT				0	0	0	0	0
Prepare for FDTE III			4Q	0	0	0	0	0
Conduct FDTE III				0	0	0	0	0
Prepare for FDTE IV and ARTEP				0	0	0	0	0
Conduct FDTE IV, ARTEP & IOT&E				0	0	0	0	0



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604223A - COMANCHE</b>					PROJECT <b>327</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
327 COMANCHE	423795	570126	732890	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Comanche helicopter is a highly sustainable and operationally flexible armed reconnaissance light helicopter, incorporating significant reductions in personnel and support equipment, capturing the latest combat technologies and capable of accepting upgrades to meet ever-changing threats. It will dominate the battlefield in the close, deep and rear operations and provide a decisive air cavalry capability in day, night, and adverse weather. It will be operationally tailorable to regional conflicts and provide the battle commander with timely, detailed reconnaissance information and an unprecedented level of lethality.

**FY 2000 Accomplishments**

- 169280 Continued Mission Equipment Package (MEP) development
- 153241 Completed Program Definition and Risk Reduction (PDDR) and began Engineering and Manufacturing Development (EMD) engineering development
  
- 73489 Continued development testing and flight test program for prototypes #1 and #2
- 27785 Material procurement for EMD MEP upgrades to update aircraft #1 and #2

Total 423795

**FY 2001 Planned Program**

- 215777 Continue MEP development
- 206565 Continue EMD engineering development
- 78914 Continue component development testing and flight test program for prototypes #1 and #2
- 52097 Begin material procurement/manufacture of thirteen EMD aircraft (test articles), five development test, eight operational test aircraft
  
- 16773 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) programs.

Total 570126

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604223A - COMANCHE**

PROJECT  
**327**

**FY 2002 Planned Program**

- 248616 Continue MEP development
  - 273245 Continue EMD engineering development
  - 107267 Continue component development testing and flight test program for prototypes #1 and #2
  - 103762 Continue material procurement/manufacture of 13 EMD aircraft (test articles), 5 development test, 8 operational test aircraft
- Total 732890

**B. Other Program Funding Summary**

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
A08300 Comanche	0	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Continue work with current contractor leading to production.

**D. Schedule Profile**

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Continue MEP development	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Continue EMD Program engineering development	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Continue development testing / update of prototypes 1 & 2 to support flight test	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Material procurement for upgrades to acft #1 & #2	1-4Q			0	0	0	0	0
Begin material procurement/manufacture of EMD aircraft		1-4Q		0	0	0	0	0
Continue manufacturing of EMD aircraft			1-4Q	0	0	0	0	0
Conduct development testing and flight test of acft #3 thru 6				0	0	0	0	0
Delivery of EMD aircraft				0	0	0	0	0
Conduct flight test of acft #7 thru 15 and conduct IOT&E				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604223A - COMANCHE</b>	PROJECT <b>327</b>
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<u>D. Schedule Profile (continued)</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Milestone III/Initial Operating Capability (IOC)				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604223A - COMANCHE**

**PROJECT**  
**327**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DAAJ23-00-C-A001	C/PAF	Boeing Sikorsky, PA	147479	532408	1-2Q	692803	1-2Q	0	0	0	0	0
b . DAAJ09-91-C-A004	C/CPIF	Boeing Sikorsky, PA	2930631	0		0		0	0	0	0	0
c . DAAJ09-87-D-A022	C/FFP	Veridian, VA	61995	6474	1-2Q	6180	1-2Q	0	0	0	0	Continue
d . Other Contracts	C/T&M		2272	1416	1-3Q	2010	1-3Q	0	0	0	0	Continue
e . Completed Contracts			370288	0		0		0	0	0	0	0
f . Gov't Agencies	MIPR		3482	2500	1-4Q	3750	1-4Q	0	0	0	0	Continue
Subtotal:			3516147	542798		704743		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604223A - COMANCHE**

**PROJECT**  
**327**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Other Contracts	C/T&M		38258	906	1-3Q	933	1-3Q	0	0	0	0	Continue
b . Completed Contracts	C/FFP		15556	0		0		0	0	0	0	0
c . Gov't Agencies	MIPR		127230	16645	1-4Q	17144	1-4Q	0	0	0	0	Continue
Subtotal:			181044	17551		18077		0		0	0	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Government Agencies	MIPR		26025	1540	1-4Q	1586	1-4Q	0	0	0	0	Continue
Subtotal:			26025	1540		1586		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604223A - COMANCHE</b>	<b>PROJECT</b> <b>327</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Other Contracts	C/T&M		5690	878	1-3Q	904	1-3Q	0	0	0	0	Continue
b . PMO/Gov't Agencies	MIPR		14411	7359	1-4Q	7580	1-4Q	0	0	0	0	Continue
Subtotal:			20101	8237		8484		0		0	0	Continue
Project Total Cost:			3743317	570126		732890		0		0	0	Continue

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604223A - COMANCHE</b>					<b>PROJECT</b> <b>C72</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C72 T-800 ENGINE ED (LH)	24859	38265	54810	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project includes tasks to design, develop and qualify an advanced technology engine. It provides for the continued development and qualification of the T800-801 growth engines and air vehicle support for integration of same into the Comanche aircraft. The growth engine is for the Army's RAH-66 Comanche and other applications.

**FY 2000 Accomplishments**

- 5701 Continue engine program air vehicle support of Comanche EMD
- 17974 Continued contractor development/qualification testing
- 1184 Completed manufacturing of growth engines for flight test. Seven test articles procured to be delivered (two in FY 00 and five in FY 01)

Total 24859

**FY 2001 Planned Program**

- 4876 Continue engine air vehicle support
- 29980 Continue contractor development/qualification testing
- 2272 Begin EMD program engine material procurement/manufacturing. Thirty-four engines (test articles) being procured to be delivered in FY 03 and FY 04 for Comanche EMD aircraft
- 1137 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) programs

Total 38265

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604223A - COMANCHE**

**PROJECT**  
**C72**

**FY 2002 Planned Program**

- 4952 Continue engine air vehicle support
- 35090 Continue contractor development/qualification testing
- 14768 Continue EMD program engine manufacturing. Thirty-four engines (test articles) to be delivered in FY 03 and FY 04 for Comanche EMD aircraft

Total 54810

<b><u>B. Other Program Funding Summary</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>
A08300 Comanche	0	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Continue work with current contractor leading to FAA certification, military qualification and production.

<b><u>D. Schedule Profile</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Complete mfg of growth engines for flight test	4Q	1Q		0	0	0	0	0
Continue contractor development/qualification of T801 engine design	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Continue engine air vehicle support of Comanche EMD	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Begin EMD engine material procurement/manufacturing		3-4Q		0	0	0	0	0
Continue EMD engine manufacturing			1-4Q	0	0	0	0	0
Deliveries of EMD engines				0	0	0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604223A - COMANCHE**

**PROJECT**  
**C72**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DAAH23-01-C0021	C/CPAF	LHTEC, Indiana	0	32572	3Q	54510	1-2Q	0	0	0	0	Continue
b . DAAJ09-92-C-0453	C/CPFF	LHTEC, Indiana	327802	5318	1Q	0		0	0	0	0	0
c . DAAJ09-85-C-B017	C/FFP	LHTEC, Indiana	276821	0		0		0	0	0	0	0
d . DAAJ09-93-C-0518	C/CPFF	LHTEC, Indiana	460	0		0		0	0	0	0	0
e . DAAJ09-85-C-B019	C/FFP	AVCO/PW, Connecticut	128526	0		0		0	0	0	0	0
f . Gov't Agencies	MIPR		14227	225	1-4Q	200	1-4Q	0	0	0	0	0
Subtotal:			747836	38115		54710		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604223A - COMANCHE**

**PROJECT**  
**C72**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PATS contracts	C/FFP		96	0		0		0	0	0	0	0
b . Rail	C/FFP		2806	0		0		0	0	0	0	0
c . Other Contracts	Agreement		400	0		0		0	0	0	0	0
Subtotal:			3302	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Government Agencies	MIPR		23681	150	1-4Q	100	1-4Q	0	0	0	0	Continue
b . Contracts			2	0		0		0	0	0	0	0
Subtotal:			23683	150		100		0		0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604223A - COMANCHE</b>	<b>PROJECT</b> <b>C72</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: None

Project Total Cost:			774821	38265		54810		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604270A - EW Development**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	77510	69413	57010	0	0	0	0	0	0	0
2VT ATIRCM/CMWS OPERATIONAL TEST	806	0	0	0	0	0	0	0	0	0
665 A/C SURV EQUIP DEV	12256	23514	8148	0	0	0	0	0	0	0
L12 SIGNALS WARFARE DEVELOPMENT (TIARA)	16998	4939	1747	0	0	0	0	0	0	0
L15 ARAT-TSS	0	0	1908	0	0	0	0	0	0	0
L16 TROJAN DEVELOPMENT	0	0	1406	0	0	0	0	0	0	0
L20 ATIRCM/CMWS	47450	40960	43801	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element encompasses engineering and manufacturing development for tactical electronic warfare (EW), signals warfare (SW), aircraft survivability equipment (ASE), battlefield deception, rapid software reprogramming and protection of personnel and equipment from hostile artillery. EW encompasses the development of tactical EW equipment and systems mounted in both ground and air vehicles. The systems under this program provide the Army with the capability to degrade or deny hostile forces the effective use of their communications, countermortar/counterbattery radars, surveillance radars, infrared/optical battlefield surveillance systems and electronically fused munitions. Existing Army EW systems must be replaced or upgraded to maintain their capability in the face of threat technical advancements. This program element satisfies requirements for brigade, division, corps and higher commanders to conduct electronic warfare to meet tactical and Special Electronic Mission Aircraft (SEMA) requirements, attack/scout, and assault/cargo mission requirements. Prophet provides for development of multifunction ground based and airborne intelligence and electronic warfare systems. Trojan developments will complete Proof-of-Principle R&D for specific Trojan applications in advanced threat signals processing and prototype software upgrades; high frequency (HF) algorithms for compact antenna array technology (CAAT) configured into small aperture antenna arrays; search and acquisition capabilities for unattended signal collectors; and new digital intelligence collection, processing and dissemination technology. The ARAT Project will develop, test and equip an Army-wide infrastructure capable of rapidly reprogramming electronic combat software embedded in offensive and defensive weapon systems. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Path (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604270A - EW Development**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	78603	61056	37121	0
Appropriated Value	80603	70056	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-1437	0	0	
c. Omnibus or Other Above Threshold Reprogrammings	0	0	0	
d. Below Threshold Reprogramming	-1376	0	0	
e. Rescissions	-280	-643	0	
Adjustments to Budget Years Since FY2001 PB	0	0	19889	
Current Budget Submit (FY 2002/2003 PB )	77510	69413	57010	0

Change Summary Explanation:  
 FY02/03 Realign funds to higher Army priority.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604270A - EW Development</b>					PROJECT <b>665</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
665     A/C SURV EQUIP DEV	12256	23514	8148	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Aircraft Survivability Equipment Development provides for the development and system integration of Radio Frequency (RF) Countermeasures Aircraft Survivability Equipment (ASE) to achieve survivability, reduce vulnerability, and enhance combat effectiveness required to fulfill all Army aircraft mission requirements. Equipment will increase combat effectiveness and potential for mission accomplishment by reducing or eliminating the ability of threat air defense systems to detect, hit, track, damage or destroy Army aircraft. Developments respond to the approved requirement documents, test and type classification for production and fielding of RF systems to integrate with infrared, radar, laser and optical/electro-optical and other on-board sensors. Efforts in development include new or upgraded systems to counter monopulse, millimeter wave, pulse doppler and continuous wave radars. Continual adjustments are made to this program to meet the changing and evolutionary nature of technology and threat. This program has joint service applications that are coordinated through the Joint Technical Coordinating Group for Aircraft Survivability (JTTCG/AS), as well as NATO applications coordinated through DOD. This project also provides the technical base for electronic warfare equipment for Apache, Blackhawk, Chinook, Comanche and Special Operations Aircraft. The Suite of Integrated Radio Frequency Countermeasures (SIRFC) system is necessary to the survival of the AH-64, MH-47E, MH-60K, RC-12K, EH-60, UH-60 and CH-47D aircraft. It is an Office of the Secretary of Defense (OSD) oversight program with high joint interest. The Air Force Special Operations Command (AFSOC) selected SIRFC as CV-22 EW bus controller and sensor fusion processor. The SIRFC EMD schedule is connected to the CV-22 development and test schedule and is monitored closely by U.S. Special Operations Command (SOCOM) and it has application to both Air Force and Navy aircraft. The SIRFC system key capabilities include advanced threat radar warning, advanced threat radar jammer, sensor data fusion and lightweight modular design. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 11791     Continued EMD of SIRFC
- 233        Initiated Technology Insertion program/P3I
- 232        Continued in-house and program management administration

Total 12256

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)****June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604270A - EW Development**

PROJECT

**665****FY 2001 Planned Program**

- 9000 Conduct Production Engineering Planning/Technology Insertion/Obsolescence
- 8795 Complete EMD
- 4807 Conduct Testing
- 281 Continue in-house and program management administration
- 631 Small Business Innovative Research/Small Business Technology Transfer

Total 23514

**FY 2002 Planned Program**

- 4917 Continue Technology Insertion Program/Obsolescence/P3I
- 3000 Conduct IOT&E
- 231 Continue in-house and program management administration

Total 8148

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604270A - EW Development**

PROJECT  
**665**

<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
APA, BA 4 AZ3508 ASE	3027	0	32780	0	0	0	0	0	0	0
APA, BA 2 AA0720 ASE Modifications	8793	4446	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The SIRFC LRIP decision is scheduled for the 2nd Quarter of FY02. Milestone III is scheduled for the 2nd Quarter of FY03. Both contractual actions will be sole-source.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete EMD		4Q		0	0	0	0	0
Complete Limited User Test (LUT)			1Q	0	0	0	0	0
Low Rate Initial Production (LRIP)			2Q	0	0	0	0	0
Complete IOT&E			4Q	0	0	0	0	0
Milestone III Decision				0	0	0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604270A - EW Development</b>						PROJECT <b>665</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . SIRFC EMD Contract - ITT Corp	C/CPAF	CECOM, Ft. Monmouth, NJ	95042	8625	2Q	0		0	0	0	0	0
b . EMD Support	MIPR	CECOM, Ft. Monmouth, NJ	0	170	1Q	0		0	0	0	0	0
Subtotal:			95042	8795		0		0		0	0	0
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Initiate Technology Insertion/P3I - ITT	C/CPFF	CECOM, Ft. Monmouth, NJ	233	0		0		0	0	0	0	0
b . Conduct PEP/Technology Insertion/Obsolescence - ITT	C/CPFF	CECOM, Ft. Monmouth, NJ	0	9000	2Q	0		0	0	0	0	0
c . Continue Technology Insertion Program/Obsolescence/P3I	C/CPFF	CECOM, Ft. Monmouth, NJ	0	0		4917	2Q	0	0	0	0	0
d . Continue Technology Insertion Program/P3I	C/CPFF	CECOM, Ft. Monmouth, NJ	0	0		0		0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**665**

II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			233	9000		4917		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Conduct Testing	MIPR	Multiple	1216	2609	2Q	0		0	0	0	0	0
b . Radio Frequency Simulation System Test - ITT	C/CPFF	CECOM, Ft. Monmouth, NJ	212	300	2Q	0		0	0	0	0	0
c . Longbow Apache Testing	C/CPFF	AMCOM, Redstone Arsenal, AL	75	1898	2Q	0		0	0	0	0	0
d . IOT&E	MIPR	Multiple	0	0		3000	2Q	0	0	0	0	0
Subtotal:			1503	4807		3000		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**665**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management	MIPR	Various	232	281	1Q	231	1Q	0	0	0	0	0
b . SBIR/STTR			0	631	1Q	0		0	0	0	0	0
Subtotal:			232	912		231		0		0	0	0
Project Total Cost:			97010	23514		8148		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604270A - EW Development</b>					PROJECT <b>L12</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L12 SIGNALS WARFARE DEVELOPMENT (TIARA)	16998	4939	1747	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Within Product Manager Prophet's domain are two programs PROPHET and the Division TUAV SIGINT Payload (DTSP).

PROPHET primary mission is to provide 24-hour Force Protection (FP) to the maneuver brigade. It will be the echelons Division and below tactical commanders sole organic Multi-Sensor Signals Intelligence system. Prophet (in it's final configuration) will provide the tactical commander the next generation Signals Intelligence /Electronic Warfare (SIGINT/EW), Measurement and Signature Intelligence (MASINT) and Ground Surveillance capability. PROPHET will operate in direct support (DS) to the maneuver brigade at Division, Brigade Combat Team (BCT), Armored Cavalry Regiments (ACR) and Separate Infantry Brigade (SIB). PROPHET provides for replacement of the legacy Trailblazer, Traffic Jam and Teammate systems. These systems are currently deployed as divisional assets and will be replaced with the Prophet systems. It is being designed to support the Army Transformation and is an integral force multiplier supporting the Brigade Commander's scheme of maneuver for the Interim and Objective forces. Prophet will provide the Tactical Commander with an enhanced capability for situational awareness, electronic Intelligence Preparation of the Battlefield (IPB), battlespace visualization, target development, and force protection throughout the division's width and depths in the Objective Force. Prophet will interface with the division and armored cavalry Analysis Control Element's (ACE) All Source Analysis System (ASAS) as well as the maneuver brigade Analysis Control Team's (ACT) Common Ground Station (CGS) and/or ASAS-Remote Work Stations (ASAS-RWS) providing near-real-time (NRT) digital inputs to the common operating picture (COP). Tactical Commanders will receive added force protection through Prophet's capability of providing reports of intercepted voice communications to the supported units from the Prophet assets. Prophet will be developed in a Block approach and will include Block I - Electronic Support (ES) (COMINT), Block II - Electronic Attack (EA), Block III - Low Probability of Intercept (LPI), Block IV - SIGINT/MASINT Fusion and Block V - Micro-Sensors and Robotics capabilities.

The Division TUAV SIGINT Payload (DTSP) program is the division and Armored Cavalry Regiment (ACR) commanders Signals Intelligence /Electronic Warfare (SIGINT/EW) system. DTSP will provide the Tactical commander more flexible, responsive airborne reconnaissance and battle management capabilities. DTSP components will include a ground-sensor, an unmanned aerial vehicle (UAV) and a ground control/processing facility, the Army's future Distributed Common Ground System - Army (DCGS-A). Once implemented DCGS-A will allow Prophet and DTSP to operate in a networked environment. DTSP will also include the remote control of airborne sensors and electronically map the enemy's communications and radar systems in the Divisions' Area of Operations.

The DTSP Component Advanced Development Phase is funded under PE 63774/Project 131. This PE/Project funds the Prophet development efforts and the DTSP System Development and Demonstration Phase (SDDP) efforts.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604270A - EW Development**

PROJECT

**L12**

FY02 funds provide for continued Risk Mitigation for Prophet Block III LPI and for the DT/IOTE of Prophet Block II EA. FY03 funds begin the Prophet Block III LPI SDDP and initiates the DTSP SDDP. The Prophet System supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP). The DTSP supports the Objective transition path of the Transformation Campaign Plan (TCP).

## FY 2000 Accomplishments

- 4787 Awarded EMD contract for Prophet Block II Electronic Attack (EA)
- 5850 Prepared for and conduct Prophet Block I (ES) Developmental Test (DT) and IOT&E
- 1551 Conducted Risk Mitigation for Division TUAV SIGINT Payload Design Approaches and Prophet Block III, Low Probability of Intercept (LPI)
- 1551 Performed integration required for Prophet Block I/II in support of the Army Transformation Strategy
- 3259 Continued development of Prophet Block I ES (COMINT)

Total 16998

## FY 2001 Planned Program

- 1241 Complete Prophet Block I ES (COMINT) DT/IOT&E and Block II EA Characterization Test
- 2272 Award Block II EA Follow-On SDDP Contract
- 156 Continue Risk Mitigation for Prophet Block III LPI
- 270 Conduct SSEB for Prophet Block II EA Follow-On Contract
- 1000 Risk Mitigation & Demonstration of Data Transport Capabilities between Prophet, DTSP and DCGS-A

Total 4939

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604270A - EW Development**

PROJECT  
**L12**

**FY 2002 Planned Program**

- 1200 Conduct DT/IOT&E for Prophet Block II EA
  - 275 Complete Risk Mitigation for Prophet Block III LPI
  - 272 Prepare for and conduct Milestone B IPR for Prophet Block III LPI Contract and Begin SSEB efforts
- Total 1747

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA (SSN BZ9750)	10651	218	0	0	0	0	0	0	0	0
OPA (SSN BZ7326)	0	11159	15734	0	0	0	0	0	0	0
RDTE (PE 63774 131) - Division TUAV SIGINTProgram only	0	6936	8000	0	0	0	0	0	0	0
RDTE PROPHET DCP (030885G)	11735	7775	3916	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The Prophet and the Division TUAV SIGINT Program (DTSP) Acquisition Strategies are structured to optimize system capability while reducing risk and streamlining business and engineering processes. Prophet is being developed using a Block Approach consisting of: Block I, Electronic Support (ES) COMINT; Block II, Electronic Attack (EA); Block III, Low Probability of Intercept (LPI); Block IV, SIGINT/MASINT Fusion; and Block V, Micro-Sensors and Robotics. Block I ES (COMINT) Engineering and Manufacturing Development (EMD) was a sole source effort which leveraged off existing COTS equipment. The Block I Production will be a competitive FFP contract. Block II EA EMD was awarded as a competitive contract in 3Q FY00. Block III LPI, will be a competitive award in FY03. Blocks IV and V will also be competitively awarded. The DTSP System Development and Demonstration Phase contract is currently planned to be competitively awarded.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**L12**

<b>D. Schedule Profile</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Begin Prophet Block II EA EMD	3Q			0	0	0	0	0
Conduct Prophet Block I ES (COMINT) IOTE	4Q	1Q		0	0	0	0	0
Conduct Prophet Block II EA Characterization Test		2Q		0	0	0	0	0
FRP Decision for Prophet Block I ES (COMINT)		2Q		0	0	0	0	0
Award Prophet Block I ES (COMINT) Production Contract		3Q		0	0	0	0	0
Award Prophet Block II EA Follow-On SDDP Contract		4Q		0	0	0	0	0
Conduct Prophet Block II EA DT/IOTE			2-3Q	0	0	0	0	0
FRP Decision for Prophet Block II EA			4Q	0	0	0	0	0
Milestone B Decision for Prophet Block III LPI			4Q	0	0	0	0	0
Award Prophet Block II EA Production Contract				0	0	0	0	0
Award Prophet Block III LPI SDDP Contract				0	0	0	0	0
Begin Division TUA V SIGINT Program (DTSP) SDDP				0	0	0	0	0
Conduct Prophet Block III LPI IOT&E				0	0	0	0	0
Milestone B for Prophet Block IV SIGINT/MASINT Fusion				0	0	0	0	0
Award Prophet Block IV SIGINT/MASINT Fusion SDDP Contract				0	0	0	0	0
Milestone C Decision for Prophet Block III LPI				0	0	0	0	0
Award Prophet Block III LPI Production Contract				0	0	0	0	0
Conduct Prophet Block IV SIGINT/MASINT Fusion IOT&E				0	0	0	0	0
Milestone MS C for Prophet Block IV SIGINT/MASINT Fusion				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**L12**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Y2K for GBCS/MEWSS	C-CPFF	LMFS, Owego, NY	250	0		0		0	0	0	0	0
b . Refurbish HMMWV for Prophet	MIPR	Tobyhanna Army Depot, PA	1384	0		0		0	0	0	0	0
c . EA Study	C-CPFF	Rockwell Collins, Cedar Rapids, IA	315	0		0		0	0	0	0	0
d . Prophet Blocks I/II integration efforts to support the Army Transformation Strategy	C-CPFF	Delfin Sys Corp, Santa Clara, CA	1551	0		0		0	0	0	0	0
e . Prophet Block I ES (COMINT) Contract	C-CPFF	Delfin Sys Corp, Santa Clara, CA	3140	0		0		0	0	0	0	0
f . Prophet Block II EA Contract	C-FFP	Rockwell Collins, Cedar Rapids, IA	3767	0		0		0	0	0	0	0
g . Risk Mitigation UAV	T&M	BAE, Landsdale, PA	809	0		0		0	0	0	0	0
h . Risk Mitigation UAV	MIPR	PM UAV	742	0		0		0	0	0	0	0
i . Prophet Block II EA Follow-On SDDP Contract	C-CPFF	TBD	0	1950	4Q	0		0	0	0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**L12**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . Risk Mitigation & Demonstration of Data Transport Capabilities	SS-CPFF	L3Comm, Salt Lake City, Utah	0	1000	2Q	0		0	0	0	0	0
k . Prophet Block III LPI SDDP Contract	C-CPXF	TBD	0	0		0		0	0	0	0	Continue
l . Division TUAV SIGINT Program SDDP Contract	C-CPXF	TBD	0	0		0		0	0	0	0	Continue
m . Prophet Block III Risk Mitigation	MIPRs	Various	0	156	3Q	275	1Q	0	0	0	0	0
n . Prophet Studies & Analysis	MIPR	EPG/I2WD	1490	0		0		0	0	0	0	0
o . Other			4353	0		0		0	0	0	0	0
Subtotal:			17801	3106		275		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**L12**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	HQ, CECOM	1320	433	1Q	150	1Q	0	0	0	0	Continue
b . Contractor Eng & Spt	FFP	Sytex; Doylestown PA	303	0		0		0	0	0	0	0
c . Contractor Eng & Spt	FFP	CACI; Falls Church VA	325	0		0		0	0	0	0	0
d . ASARC Spt	T&M	Computer Science Corp, Falls Church, VA	86	0		0		0	0	0	0	0
e . TSM/NSTO	MIPR	TSM, Ft Huachuaca, AZ	100	50	3Q	0		0	0	0	0	0
f . SSEB Support	MIPR	Various CECOM Matrix Organizations	0	0		170	3-4Q	0	0	0	0	0
g . Contractor Eng & Spt	TBD	TBD	0	0		0		0	0	0	0	Continue
Subtotal:			2134	483		320		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**L12**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Demonstrate COMINT & EA subsystems for Prophet	MIPR	EPG/other Gov	1015	0		0		0	0	0	0	0
b . Conduct Prophet Block I DT/IOT&E and Characterzation Test	MIPR	EPG	3594	0		0		0	0	0	0	0
c . Conduct Prophet Block II DT/IOT&E	MIPRs	EPG & AEC	0	0		800	1Q	0	0	0	0	0
d . Conduct Prophet Block I/II DT/IOT&E	MIPR	AEC/OTC/Misc.	2033	42	2Q	0		0	0	0	0	0
e . Prepare for Prophet Block III DT	MIPR	AEC/OTC	0	0		0		0	0	0	0	Continue
f . Prophet Block I ES (COMINT) DT/IOTE	T&M	Delfin Systems Corp, Santa Clara, CA	323	0		0		0	0	0	0	0
Subtotal:			6965	42		800		0		0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**L12**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management		PM, Signals Warfare	1766	1308	1Q	352	1Q	0	0	0	0	Continue
Subtotal:			1766	1308		352		0		0	0	Continue
Project Total Cost:			28666	4939		1747		0		0	0	Continue

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604270A - EW Development</b>					PROJECT <b>L15</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L15 ARAT-TSS	0	0	1908	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Army Reprogramming Analysis Team (ARAT) Target Sensing System (TSS) supports the tactical Commander by providing timely/rapid reprogramming of any Army supported, joint, allied service, Army Electronic Warfare (EW) Integrated Reprogramming (EWIR) or Measurement Intelligence (MASINT) based target acquisition, target engagement, or vehicle/aircraft survivability equipment (ASE). ARAT provides software changes not readily possible by operator input, to respond to rapid deployments or changes in the threat environment. The ARAT Software Engineering (SE) Project Office coordinates the development of ARAT infrastructure to support the needs of all TSS developers and users; develops the capability to conduct real-time hardware and software technical enhancements of validated threat changes; examines and identifies the best technical approaches for development of field reprogramming capabilities of ATSS with commonality at a desired end-state; supports the developments of flagging models; participates in the operational and developmental test design of ATSS; and supports Service and JCS Reprogramming Exercises.

**FY 2002 Planned Program**

- 350 Engineering Development (TSS Survey): Initiate a Target Sensing System (TSS) Survey requiring support in Army Battlefield Functional Area (BFAs) with a focus on operational, technical, and intelligence aspects. This would include technical information about the actual TSS and their near and far term support requirements for intelligence collection, flagging, and threat analysis, Mission Data Set (MDS), communications, and filed support.
- 450 Intelligence Support (Platform Intelligence Integration): Analyze capability of using data from US Army Aviation Platform systems to increase tactical situational awareness as well as providing additional intelligence collection data. This would include evaluation of system modifications.
- 200 Database Support (Flagging Model): Work jointly with the USAF at Kelly AFB, TX to initiate the conversion of the current flagging database structure shared by the US Army and USAF flagging models to a more modern database structure.
- 200 Dissemination (EWOSS/MLV): Complete an upgrade of EWOSS 2000 communications tool for the field user by improving the classified connection capability and integrating all aspects of current MLV software as modules within the basic structure. In addition, develop training aids to facilitate the field user being able to successfully use this software without attending a formal training course.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604270A - EW Development**

PROJECT  
**L15**

**FY 2002 Planned Program (Continued)**

- 708 Engineering Development, Intelligence Support, Database Support, & Dissemination (Common Intel Database): Define requirements for a common intelligence database analysis and MDS tool for use by ARAT-TA (Kelly and Eglin AFBs) and ARAT-SE. The functionality must include common user interface, intelligence inputs, modular threat analysis and MDS generator tools, and output formats to support intelligence reporting, RF scenarios inputs, and MDS inputs for EWOSS/MLV. leverage the use of existing tools such as the Major Radar Database (MRDB) as much as practical.

Total 1908

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

**C. Acquisition Strategy:** The efforts to be funded in this project will require a combination of systems specific and high-tech knowledge. The contractual services portion for the project will be obtained from both the CECOM SEC competitive omnibus and the RDEC High Tech contracts.

<b><u>D. Schedule Profile</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Engineering Development			1-4Q	0	0	0	0	0
Intelligence Support			3-4Q	0	0	0	0	0
Database Support			3-4Q	0	0	0	0	0
Dissemination			3-4Q	0	0	0	0	0
Engineering Development, Intelligence Support, Database Support, & Dissemination			1-4Q	0	0	0	0	0
Develop Relational DB for new threats to include Blue Signals				0	0	0	0	0
Transmission Paths.				0	0	0	0	0
Support Army and Joint Contingencies and Exercises in the area of Rapid reprogramming of TSS			1-4Q	0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**L15**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labor (internal Gov't)		CECOM, Fort Monmouth, NJ	0	0		550		0	0	0	0	0
b . Travel			0	0		49		0	0	0	0	0
Subtotal:			0	0		599		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Support (CECOM SEC Omnibus)	TBD	TBD/Various sites	0	0		300		0	0	0	0	0
b . Development Support (CECOM RDEC T&E)	TBD	TBD/Various sites	0	0		600		0	0	0	0	0
Subtotal:			0	0		900		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**L15**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labor (Int and Contact)		CECOM and ARAT-TA/LIWA	0	0		409		0	0	0	0	0
Subtotal:			0	0		409		0		0	0	0

<b>Project Total Cost:</b>			0	0		1908		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>			<b>PE NUMBER AND TITLE</b> <b>0604270A - EW Development</b>						<b>PROJECT</b> <b>L16</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L16 TROJAN DEVELOPMENT	0	0	1406	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project is a Tactical Intelligence and Related Activities (TIARA) program. A key factor in modern warfare is the ability to collect, process and use information about an adversary while preventing him from obtaining similar information. TROJAN is a combined operational and readiness mission system which uses advanced networking technology to provide seamless rapid radio relay, secure communications to include voice, data, facsimile, and electronic reconnaissance support to U.S. forces throughout the world. TROJAN operations may be easily tailored to fit military intelligence unit training schedules and surged during specific events to involve every aspect of the tactical intelligence collection, processing, analysis and reporting systems. This project engineers, tests and evaluates new digital intelligence collection, processing and dissemination technology using the fielded TROJAN systems, prior to the acquisition of those technologies. The process that will enable the United States to win the battlefield information war is referred to as digitization. This capability will allow us to process and disseminate real-time intelligence data from various sources; it forms the intelligence needed to issue orders inside the threat decision cycle. To that end, it is imperative the TROJAN system keep pace with digitization initiatives in order to respond aggressively to the emerging intelligence communication threats.

**FY 2002 Planned Program**

- 500 Integrate and test specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms.
  - 650 Develop prototype QRC Receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP technologies.
  - 256 Investigate compression/processing technologies to reduce communications bandwidth requirements for remoted TROJAN systems.
- Total 1406

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604270A - EW Development**

PROJECT  
**L16**

<u><b>B. Other Program Funding Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA BA0331	7726	4235	4876	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Not applicable for this item.

**D. Schedule Profile:** Not applicable for this item.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**L16**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Develop Prototype QRC Receiver packages	MIPR	CECOM I2WD Ft Monmouth	0	0		650		0	0	0	0	0
b . Develop DF Capabilities for TROJAN RRG	MIPR	CECOM I2WD Ft Monmouth	0	0		0		0	0	0	0	0
c . Investigate Compression /processing technologies	MIPR		0	0		256		0	0	0	0	0
Subtotal:			0	0		906		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Acquire & Apply muliti bandwidth compr Algorithm	MIPR	CECOM I2WD FT Monmouth	0	0		0		0	0	0	0	0
Subtotal:			0	0		0		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**L16**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Integrate/test hardware/software	MIPR	CECOM I2WD FT Monmouth	0	0		500		0	0	0	0	0
b . Operational test/eval of enhanced SIG Processing	MIPR		0	0		0		0	0	0	0	0
Subtotal:			0	0		500		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

<b>Project Total Cost:</b>			0	0		1406		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604270A - EW Development</b>					PROJECT <b>L20</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L20 ATIRCM/CMWS	47450	40960	43801	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Advanced Threat Infrared Countermeasure/Common Missile Warning System (ATIRCM/CMWS) is a U. S. Army program to develop, test and integrate defensive infrared (IR) countermeasures capabilities into existing, current generation host platforms for more effective protection against a greater number of IR guided missile threats than afforded by currently fielded IR countermeasures. The CMWS component system is a joint U.S. Navy and U.S. Army program to integrate common missile warning on tactical aircraft and rotorcraft for IR guided missile threat warning. Effective November 28, 2000, the Air Force officially withdrew from the production program. The ATIRCM/CMWS is the core systems of the U. S. Army's modular Suite of Integrated Infrared Countermeasures (SIIRCM). The current configuration for the Army's fleet helicopters consist of the AN/ALQ-144A for the AH-64 and the UH/MH-60, the AN/ALQ-156 missile detector and M-130 flare/chaff dispenser for the CH/MH-47 and the AN/AAR-47 for the MH-47E and the MH-60. The ATIRCM/CMWS will selectively replace the AN/ALQ-144A, AN/ALQ-156 or AN/AAR-47, and the M-130. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 22211 Continue EMD contract for ATIRCM/CMWS
- 7504 EMD contract T&M efforts for ATIRCM/CMWS
- 8201 Continue Development Testing for ATIRCM/CMWS
- 1427 Complete EMD for Advanced Infrared Countermeasures Munitions (AIRCMM)
- 400 Complete EMD for Advanced Visual Electro-optical Signature Suppression & Analysis (AVESSA)
- 1750 Continue Modeling & Simulation efforts for ATIRCM/CMWS
- 2619 Continue Support costs for ATIRCM/CMWS
- 2042 Program management administration
- 1296 Continue in-house support

Total 47450

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)****June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604270A - EW Development**

PROJECT

**L20****FY 2001 Planned Program**

- 1363 Complete EMD contract for ATIRCM/CMWS
- 9919 Continue EMD contract T&M efforts for Modeling & Simulation Testing, and Producibility in support of the ATIRCM/CMWS.
- 5100 Continue Modeling & Simulation efforts for ATIRCM/CMWS
- 1400 Initiate AIRCMM P3I
- 12680 Continue developmental testing for the ATIRCM/CMWS
- 7322 Continue Support costs for ATIRCM/CMWS
- 1993 Continue in-house and program management administration
- 1183 Small Business Innovative Research / Small Business Technology Transfer Program

Total 40960

**FY 2002 Planned Program**

- 19585 Continue EMD contract T&M efforts for Testing and Producibility in support of the ATIRCM/CMWS.
- 2000 Continue Modeling & Simulation efforts for ATIRCM/CMWS
- 1200 Continue AIRCMM P3I
- 10820 Continue testing for the ATIRCM/CMWS
- 8513 Continue support costs for ATIRCM/CMWS
- 1683 Continue in-house and program management administration

Total 43801

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**L20**

<b>B. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
APA, BA 4 AZ3507 ASE Infrared CM	0	0	36653	0	0	0	0	0	0	0
APA, BA 2 AA0722 ATIRCM Modifications	4901	0	0	0	0	0	0	0	0	0
APA, BA 4 AA0980 INITIAL SPARES	0	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** EMD contract competitively awarded in FY 1995 with a LRIP decision and LRIP Lot I production contract award scheduled for Jan 02. Follow on Milestone III Lot II production contract award scheduled for Mar 03.

<b>D. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Continue/complete ATIRCM/CMWS EMD basic contract	1-4Q	1-4Q	1Q	0	0	0	0	0
Continue/complete EMD contract T&M efforts for ATIRCM/CMWS	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Continue/complete ATIRCM/CMWS modeling & simulation	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Complete AVESSA EMD phase	1-4Q	1-4Q		0	0	0	0	0
Complete AIRCMM EMD phase	1-4Q			0	0	0	0	0
Initiate/continue ATIRCM and AIRCMM P3I effort		1-4Q	1-4Q	0	0	0	0	0
Continue Project Management Administration	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Start/complete ATIRCM/CMWS developmental testing		1-4Q	1-2Q	0	0	0	0	0
Start/complete ATIRCM/CMWS operational testing			2-3Q	0	0	0	0	0
ATIRCM/CMWS LRIP decision			2Q	0	0	0	0	0
ATIRCM/CMWS Lot I production contract award			2Q	0	0	0	0	0
ATIRCM/CMWS Milestone III Decision				0	0	0	0	0
ATIRCM/CMWS Lot II production contract award				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**L20**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Thiokol (AIRCMM)	C/CPIF	Picatinny Arsenal, NJ	763	1043	2Q	1200	3Q	0	0	0	0	0
b . BAE Systems (Sanders) (ATIRCM) EMD basic contract	C/CPAF	CECOM, NJ	22211	1363	2Q	0		0	0	0	0	0
c . BAE Systems (Sanders) (ATIRCM) T&M efforts	C/CPFF	CECOM, NJ	7504	12579	1-4Q	19585	1-4Q	0	0	0	0	0
d . Cowley (ATIRCM)	C/CPFF	CECOM, NJ	0	100	2Q	0		0	0	0	0	0
Subtotal:			30478	15085		20785		0		0	0	0

Remarks: FY99 funding and prior funding in Project 665

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Contractor Support	C/FFP	AMCOM, AL	4142	6448	1-4Q	6875	1-4Q	0	0	0	0	0
b . Matrix Support	MIPR	CECOM, NJ; AMCOM, AL	1296	1366	1-3Q	1500	1-3Q	0	0	0	0	0
Subtotal:			5438	7814		8375		0		0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**L20**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . EPG support	MIPR	Ft. Huachuca, AZ	1478	4447	1Q	5541	1Q	0	0	0	0	0
b . ATEC support	MIPR	Various	4109	2323	1-2Q	3404	1Q	0	0	0	0	0
c . ATTC test support	MIPR	Fort Rucker, AL	1659	845	1Q	0		0	0	0	0	0
d . Neer/Thomsen, Inc test support	C/FFP	AMCOM, AL	396	0		0		0	0	0	0	0
e . Westar test support	C/FFP	AMCOM, AL	559	0		0		0	0	0	0	0
f . PM ITTS	MIPR	Huntsville, AL	0	2600	3Q	0		0	0	0	0	0
g . RTTC	MIPR	Huntsville, AL	0	1000	3Q	0		0	0	0	0	0
h . Other	MIPR		0	584	2-3Q	0		0	0	0	0	0
Subtotal:			8201	11799		8945		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604270A - EW Development**

**PROJECT**  
**L20**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management		PEO Aviation, AL	2042	1993	1-4Q	1683	1-4Q	0	0	0	0	0
b . In house support	MIPR	CECOM, NJ; AMCOM, AL	1291	3086	1-3Q	4013	1-3Q	0	0	0	0	0
c . SBIR/STTR			0	1183		0		0	0	0	0	0
Subtotal:			3333	6262		5696		0		0	0	0
Project Total Cost:			47450	40960		43801		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>			<b>PE NUMBER AND TITLE</b> <b>0604280A - Joint Tactical Radio System</b>						<b>PROJECT</b> <b>162</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
162 JOINT TACTICAL RADIO SYSTEM	35537	61648	80449	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

The mission of the Joint Tactical Radio System (JTRS) Joint Program Office (JPO) is to develop an open standard Software Communications Architecture (SCA) and software waveforms that will enable the Services to acquire a family of affordable, scaleable, high-capacity, interoperable Line of Sight (LOS) and Beyond Line of Sight (BLOS) radios. The Army is the Executive Service for this joint program. The singular functionality of current stovepipe systems lacks the connectivity and throughput capacity to support required simultaneous networked voice, video, and data operations with low probability of intercept over multiple frequency bands. Each unique current radio system requires significant allocation of space, weight, power, and cooling on weapons systems platforms, and has a costly logistics infrastructure. These inadequacies are addressed in the revised JTRS Operational Requirements Document (ORD), dated 30 January 2001. The JROC validated the revised ORD on 01 March 2001. In addition to addressing the problems associated with stovepipe radios, the JTRS program will provide a significant increase in capability while providing a solid foundation for interoperability, and for achieving network connectivity across the RF spectrum. This program element is continuing to incorporate Industry-recommended, validated changes to the evolving SCA through hardware prototypes and software waveforms developed by multiple vendors. This program element will also develop a set of software-based waveforms, as described in the ORD, and provide a certification infrastructure for compliance testing of all hardware and software products. The program element also provides a path for advancing technology, including software crypto algorithms, and resolving problems unique to the military environment. The open standards based SCA will provide the path for future hardware and software growth of delivered systems by allowing the Services to take advantage of advances in technology being driven by the commercial wireless communications marketplace. The overall JTRS program will provide software programmable and hardware configurable digital radio systems that demonstrate increased interoperability, flexibility and adaptability. JTRS will provide the operational forces with an upgraded communications capability for more effective battlespace management and interoperability among Command, Control, Communications, Computers and Intelligence (C4I) Systems supporting the warfighters' goal of realizing a fully digitized battlespace. A Defense Acquisition Executive Memorandum dated February 12, 2001 also tasks the JTRS JPO with responsibility for oversight of all DoD radio acquisitions to ensure JTRS interoperability, and with pursuing the goal of SCA acceptance as an international standard.

This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604280A - Joint Tactical Radio System**

PROJECT

**162**

## FY 2000 Accomplishments (Continued)

- 28257 Validated SCA, through Step 2A Consortium and Step 2B third-party validation efforts (see Acquisition Strategy, paragraph D), using prototype hardware and software waveforms built to SCA documentation. Initiated architecture disputes resolution process. Planned for post-Defense Acquisition Executive (DAE) review program implementation. Conducted market survey.
- 4788 Continued JPO technical support, including systems engineering, spectrum allocation and approval for use, and systems security engineering, in support of SCA activities.
- 2492 Continued JPO program support, including administration, program management, legal, contracting, budget execution and cost estimating activities.

Total 35537

## FY 2001 Planned Program

- 9987 Maintain and evolve the SCA (see Acquisition Strategy, paragraph D).
- 31486 Begin acquisition of waveforms listed in JTRS ORD. Initiate waveform testing; develop crypto algorithm software.
- 5711 Provide for technology advancement and problem resolution, to include areas such as multiple independent levels of security (MILS), multilevel security (MLS), and network security.
- 5845 Implement hardware and software waveform certification process (SCA compliance testing).
- 4170 Continue JPO technical support, including waveform development, systems engineering, spectrum allocation and approval for use, systems security engineering and problem resolution and support of SCA activities. Provide technical guidance to Service program management offices (PMOs). Provide oversight for all DoD radio acquisitions and international cooperative efforts to ensure JTRS interoperability.
- 2616 Continue JPO program support, including administration, program management, legal, contracting, budget execution and cost estimating activities.
- 1833 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program.

Total 61648

## FY 2002 Planned Program

- 3900 Maintain and evolve the SCA.
- 53030 Continue acquisition of waveforms listed in JTRS ORD, including significant efforts associated with development of complex waveforms initiated in FY01. Continue waveform testing and development of crypto algorithm software. Begin waveform sustainment engineering activities.
- 7500 Continue technology advancement and problem resolution, to include areas such as multiple independent levels of security (MILS), multilevel security (MLS), and network security.
- 6300 Continue hardware and software waveform certification process (SCA compliance testing).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604280A - Joint Tactical Radio System**

PROJECT  
**162**

**FY 2002 Planned Program (Continued)**

- 6289 Continue JPO technical support, including waveform development, systems engineering, spectrum allocation and approval for use, systems security engineering and problem resolution and support of SCA activities. Provide technical guidance to Service PMOs. Provide oversight for all DoD radio acquisitions and international cooperative efforts to ensure JTRS interoperability.
  - 3430 Continue JPO program support, including administration, program management, legal, contracting, budget execution, and cost estimating activities.
- Total 80449

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	36520	62218	80065	0
Appropriated Value	36797	62218	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-983	0	0	0
c. Omnibus or Other Above Threshold Reductions	-150	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-127	-570	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	384	0
Current Budget Submit (FY 2002/2003 PB )	35260	61648	80449	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604280A - Joint Tactical Radio System</b>	PROJECT <b>162</b>
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<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, 0604805A, D615 JTRS Ground Domain	5836	28281	79034	0	0	0	0	0	0	0
RDTE, 0603713A, D370, JTRS Army, Block I PJH-PLRS/JTIDS HYB	3724	17	0	0	0	0	0	0	0	0
OPA, Army, Army Data Distribution System (ADDS), BU 1400/JTRS	0	0	0	0	0	0	0	0	0	0

**D. Acquisition Strategy:** The JTRS development strategy consists of a three-step process. Step 1 resulted in a baseline architecture definition. Step 2 includes Step 2A, Step 2B, and Step 2C. Step 3 requires the Services perform acquisition, integration, testing, fielding and training activities. Step 3 activities have begun following the successful DAE review. The Services will perform acquisition, integration, testing, fielding and training activities.

In Step 2A, a four-company Consortium (Raytheon, ITT, Rockwell-Collins, and BAE) developed the architecture and validated it as the Software Communications Architecture (SCA). SCA Version 2.0 was finalized and published on the JTRS JPO Webpage in December 2000. In Step 2B, other companies are providing additional third-party validation. The validation process uses hardware prototypes and an initial set of software-based waveforms. Step 2C, which is funded and managed by PM TRCS, also is a prototyping activity to validate the SCA. Step 2C will demonstrate that the SCA supports JTRS networking requirements. Concurrently with validation activities, the Joint Program Office (JPO) also conducted a market survey, which benchmarked industry capabilities with respect to the architecture.

A Defense Acquisition Executive (DAE) review was held on October 30, 2000. On February 12, 2001, the DAE signed a memorandum that approved the proposed JTRS management concept and acquisition approach, including the concept of independent but cohesive waveform application development (by the JPO) and hardware development (by the Services). The memo also directed the JPO to provide oversight for all radio acquisitions to ensure JTRS interoperability, and directed that individual radio programs will be grouped in "clusters" based on their similarity of application and the timeframe required for fielding.

The JPO will continue to maintain and evolve the SCA, acquire waveforms listed in the ORD, and address technology advancement and problem resolution issues. The JPO will provide certification of JTRS SCA compliance for acquired systems and waveforms.

The SCA is expected to become the government and industry standard for software radios.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

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As such, it will be the basis for acquiring future Department of Defense (DoD) software radios. In late FY01, the SCA initially will be submitted to an international standards body. During FY02/03, the JPO will manage the acceptance process for the government, while continuing configuration management and evolution of the SCA. After acceptance of the SCA as the software radio standard, the JPO's role will be to participate in the standards body activities and maintain the military addenda to the SCA.

<u>E. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Begin Architecture Development and Validation	1Q			0	0	0	0	0
Deliver Version 1.0 of SCA	3Q			0	0	0	0	0
Consortium Prototypes and Required Waveforms Available to Begin Validation Process	3Q			0	0	0	0	0
Conduct Market Survey	4Q			0	0	0	0	0
Complete Step 2A Consortium SCA Validation with Waveforms and Prototypes		1Q		0	0	0	0	0
Deliver Version 2.0 of SCA		1Q		0	0	0	0	0
DAE Review		1Q		0	0	0	0	0
Acquire ORD Waveforms		3-4Q	1-4Q	0	0	0	0	0
Maintain and Evolve SCA		1-4Q	1-4Q	0	0	0	0	0
Address Technology Advancement Issues and Problem Resolution		3-4Q	1-4Q	0	0	0	0	0
Provide Certification of JTRS SCA Compliance for Acquired Systems and Waveforms		2-4Q	1-4Q	0	0	0	0	0
Provide Waveform Sustainment Engineering			1-4Q	0	0	0	0	0

NOTE: All milestones scheduled through 1Q FY2001 have been accomplished.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604280A - Joint Tactical Radio System**

**PROJECT**  
**162**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Architecture Development and Validation; Maintain & Evolve SCA*	Other Trans Agreements (OTA); Various	Step 1: Various (3 Consortia) ; Step 2A: Raytheon Consortium ; Step 2B: Various (7 OTAs)	43257	9987	1Q	3900	2Q	0	0	0	0	Continue
b . Waveform Development, Test; Crypto S/W; Waveform Sustainment Engineering	Waveform Dev: TBD; Test, Crypto: OTA	Waveform Dev: TBD; Test SW: Aeronix; Crypto: Raytheon; Other: TBD	0	31486	2-3Q	53030	1-3Q	0	0	0	0	Continue
c . Certification Infrastructure (SCA Compliance Testing)	Initial contracts: OTA; Others:TBD	Initial contracts: Raytheon; Others: TBD	0	5845	2Q	6300	1Q	0	0	0	0	Continue
d . Technology Advancement/Problem Resolution	TBD	TBD	0	5711	3Q	7500	1Q	0	0	0	0	Continue
Subtotal:			43257	53029		70730		0		0	0	Continue

Remarks: \* Step 2C activities funded in Army Program Element 0604805A; Managed by PM TRCS.



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604280A - Joint Tactical Radio System</b>	<b>PROJECT</b> <b>162</b>
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . FFRDC - MITRE and Other contracted Technical Support	FFP	Various	10540	4170	1-3Q	6289	1-3Q	0	0	0	0	Continue
<b>Subtotal:</b>			10540	4170		6289		0		0	0	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . N/A*	N/A	N/A	0	0		0		0	0	0	0	0
<b>Subtotal:</b>			0	0		0		0		0	0	0

Remarks: \*System and operational testing performed by the Services; funded in Service appropriations.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604280A - Joint Tactical Radio System</b>	<b>PROJECT</b> <b>162</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Support	Various	Various	6145	2616	1-3Q	3430	1-3Q	0	0	0	0	Continue
b . Other (SBIR/STTR)			0	1833		0		0	0	0	0	Continue
Subtotal:			6145	4449		3430		0		0	0	Continue

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Project Total Cost:			59942	61648		80449		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604321A - All Source Analysis System**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	54397	43680	42166	0	0	0	0	0	0	0
2FT ASAS OPERATIONAL TEST	2313	0	0	0	0	0	0	0	0	0
B19 ASAS EVOLUTIONARY ACQ (TIARA)	48438	41864	39811	0	0	0	0	0	0	0
B41 CI/HUMINT SOFTWARE PRODUCTS (TIARA)	3646	1816	2355	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element funds the development of the All Source Analysis System (ASAS) and Counterintelligence/Human Intelligence (CI/HUMINT) products. The Project Manager Intelligence Fusion provides management oversight of PM ASAS software. ASAS is the automated support system for the intelligence and electronic warfare (IEW) functional area of the Army Battle Command System (ABCS). It is a tactically deployable Automated Data Processing (ADP) system designed to support management of IEW operations and target development in battalions, brigades, armored cavalry regiments, separate brigades, divisions, corps, and echelons above corps. Counterintelligence/Human Intelligence software products are a subsystem to the ASAS and are designed to facilitate the collection, management and dissemination of Counterintelligence and Human Intelligence information to the Warfighters. These systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604321A - All Source Analysis System**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	53248	44084	43281	0
Appropriated Value	53684	44084	0	
Adjustments to Appropriated Value		0	0	
a. Congressional General Reductions	-436	-308	0	
b. SBIR / STTR	0	0	0	
c. Omnibus or Other Above Threshold Reductions	0	0	0	
d. Below Threshold Reprogramming	1100	0	0	
e. Rescissions	0	-96	0	
Adjustments to Budget Years Since FY2001 PB	0	0	-1115	
Current Budget Submit (FY 2002/2003 PB )	54348	43680	42166	0

FY00 Dollar increase as result of Below Threshold Reprogramming for Joint Contingency Force (JCF).  
 FY02 Adjustments to Budget years since FY2001 PB, decrease due to Program Budget Decision 703.  
 FY03 Adjustments to Budget years since FY2001, PB increase due to internal transfer from OPA to RDTE to align with Life Cycle Cost Estimate (LCCE).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604321A - All Source Analysis System</b>					PROJECT <b>B19</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
B19 ASAS EVOLUTIONARY ACQ (TIARA)	48438	41864	39811	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The successful execution of military operations requires a flexible and modular intelligence and targeting system that will provide tactical commanders a common view of the battlefield and a means for gaining a timely and comprehensive understanding of enemy force deployments, capabilities, and potential courses of action. The All Source Analysis System (ASAS) is a ground based, mobile, command and control, intelligence processing system. ASAS provides automated support to the combat commander in the areas of intelligence collection management, all-source fusion (signals intelligence, imagery intelligence, human intelligence, open source intelligence and measurements and signatures intelligence), target development and situation analysis, single source and multi-source processing, intelligence reporting, electronic warfare/countermeasures, and operational security as well as "digitized Army" automation support to the Army Battle Command System (ABCS). ASAS is providing incremental prototype software for military intelligence operations in the 4th Infantry Division and is part of the Army Transformation.

**FY 2000 Accomplishments**

- 41774 Continued ASAS Block II Evolutionary Acquisition EMD
    - Refined Block II Analysis Control Element (ACE) architecture and continue development
    - Completed development of ASAS Light V 4
    - Supported warfighter tests and exercises including FBCB2 Customer Test and provided CTSF on-site field support for ABCS
    - Continued development of ABCS V 6 RWS
    - Participated in ABCS Synchronization Event Testing
    - Continued enhancements to Communications Control Set (CCS)
  - 915 Procure 39 workstations for engineering development and testing
  - 4000 Continued Army Tactical Light Analysis Software (ATLAS) foundation development
  - 420 Conducted ASAS-Light V 4 Developmental Test (DT)
  - 1329 Supported ABCS SE&I efforts
- Total 48438

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604321A - All Source Analysis System**

PROJECT

**B19**

## FY 2001 Planned Program

- 39119 Continue Block II ASAS EMD
  - Extend ASAS Block II contract to align with ABCS milestones
  - Participate in ABCS Digital Capstone Exercise
  - Initiate development of ABCS V 7 RWS
  - Develop ASAS-Light V 6
  - Complete development ABCS V 6 RWS
  - Continue Block II ACE development
- 25 Conduct Developmental Testing of ABCS V 6 RWS
- 25 Initiate ASAS-Light V 6 Demonstration
- 1347 Develop IMI for ABCS V 6 RWS
- 1348 Support ABCS SE&I

Total 41864

## FY 2002 Planned Program

- 36536 Continue Block II ASAS EMD
  - Participate in ABCS Digital Capstone Exercise
  - Complete development of ABCS V 7 RWS
  - Initiate development of ABCS V 8 RWS
  - Develop of ASAS-Light V 7
  - Initiate development of ASAS-Light V 8
  - Continue development of Block II Analysis Control Element (ACE)
- 525 Complete ABCS V 6 RWS Developmental Test
- 100 Conduct ABCS V 7 RWS Demonstration

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604321A - All Source Analysis System**

PROJECT  
**B19**

**FY 2002 Planned Program (Continued)**

- 2500 Conduct ACE Developmental Test
- 50 Complete ASAS Light V 6 Demonstration
- 100 Conduct ASAS-Light V 7 Demonstration

Total 39811

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA (K28801) ASAS Modules	56271	71515	46931	0	0	0	0	0	0	0
Spares (BS9704)	611	750	806	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The ASAS development program will build upon and expand the capabilities and functionality developed and produced in the ASAS Block I System including conversion to the Army Common Hardware/Software and the OSD directed Defense Information Infrastructure Common Operating Environment (DII COE) and Modernized Integrated Database (MIDB). Additional software capabilities include enhanced intelligence and command and control functionality, jump and degraded mode operations, enhanced communications, and improved reliability, supportability and survivability. Emphasizes multiple prototype deliveries and integrated test and continuous evaluation opportunities. Builds upon experience and feedback gained from the fielded ASAS and other tactical prototypes.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
ABCS V 6 RWS Development	1-4Q	1-4Q		0	0	0	0	0
ABCS V 6 RWS Test (DT )		4Q	1-3Q	0	0	0	0	0
ACT-E Test (DT)	1-2Q			0	0	0	0	0
ASAS-Light V 4 Development	1-3Q			0	0	0	0	0
ASAS-Light V 4 DT	3-4Q			0	0	0	0	0
ASAS-Light V 6 Development and Demonstration		1-4Q	1Q	0	0	0	0	0
ASAS-Light V 7 Development and Demonstration			2-4Q	0	0	0	0	0
ASAS-Light V 8 Development and Demonstration			3-4Q	0	0	0	0	0
ABCS V 7 RWS Development and Demonstration		4Q	1-4Q	0	0	0	0	0
ABCS V 8 RWS Development and Demonstration			3-4Q	0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604321A - All Source Analysis System**

**PROJECT**  
**B19**

<b><u>D. Schedule Profile (continued)</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Block II ACE Development	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Block II ACE Development Test			3-4Q	0	0	0	0	0
Block II ASAS Milestone III				0	0	0	0	0
Block III EMD				0	0	0	0	0
Block IV EMD				0	0	0	0	0



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604321A - All Source Analysis System**

**PROJECT**  
**B19**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. System Development	CPAF	Lockheed Martin	165035	28942	1Q	24831	1Q	0	0	0	0	0
b. Subsystem Development	CPFF	EWA	9795	0		0		0	0	0	0	0
c. Subsystem Development	GSA D.O.	AIS	4000	4200	1Q	4425	1Q	0	0	0	0	0
d. IMI Development	MIPR	Army Training Support Center, Ft. Eustis VA	0	1347	2Q	0		0	0	0	0	0
e. Test Hardware	MIPR	CHS (GFE)	5686	0		0		0	0	0	0	0
<b>Subtotal:</b>			184516	34489		29256		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Facility Support	MIPR		200	250		250		0	0	0	0	0
<b>Subtotal:</b>			200	250		250		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604321A - All Source Analysis System**

**PROJECT**  
**B19**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ASAS DT	MIPR	EPG, Ft Huachuca, AZ	2962	100	4Q	3275	1Q	0	0	0	0	0
Subtotal:			2962	100		3275		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . FFRDC	MIPR	MITRE	6832	1025	1Q	1030	1Q	0	0	0	0	0
b . Contractor Spt	BPA	SYTEX, Inc. Vienna, VA	14442	4500	1-4Q	4500	1-4Q	0	0	0	0	0
c . Govt In House			13447	1500	1-4Q	1500	1-4Q	0	0	0	0	0
Subtotal:			34721	7025		7030		0		0	0	0

<b>Project Total Cost:</b>			222399	41864		39811		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604321A - All Source Analysis System</b>					<b>PROJECT</b> <b>B41</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
B41 CI/HUMINT SOFTWARE PRODUCTS (TIARA)	3646	1816	2355	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Counter Intelligence/Human Intelligence (CI/HUMINT) Management System (CHIMS) is the tactical CI/HUMINT subsystem of the All Source Analysis System (ASAS). It meets the automation requirements for Army tactical CI/HUMINT information collection, investigation, interrogation, operations, document exploitation, and force protection. The total CHIMS automation architecture extends from the ASAS Division and Corps Analysis and Control Element (ACE) to the individual agent/collector. Products under development by the Product Manager CHIMS: 1) ASAS CI/HUMINT Single Source (CI/HUMINT SS) workstation software to provide single source analysis and processing capability at the Corps and Division level. HUMINT and CI information will be processed to produce intelligence products and to maintain CI/HUMINT intelligence databases and the Common Operational Picture (COP); 2) The AN/PYQ-7 Counter Intelligence Operations/Interrogation Operations (CI & I OPS) workstation provides automation and analysis capabilities to Military Intelligence units and CI Staff Officers (CISO) at Division and Corps; 3) CI/HUMINT teams require two types of automation support. The first, a Team Leader device, is the AN/PYQ-3 CI/HUMINT Automated Tool Set (CHATS). It interfaces with the ASAS Remote Workstation (RWS), CI & I OPS workstation and individual CI/HUMINT agents/collectors device. The second, the AN/PYQ-8 Individual Tactical Reporting Tool (ITRT) provides a hand held automated collection device for agent operations. It provides automation capabilities to collect, manage, receive, store and export text, electronic data, and digital imagery information. It is also capable of preparing, processing and disseminating standard messages. CI/HUMINT Automated Management Software (CHAMS) is a common software baseline for use on CHATS, ITRT and CI & I OPS workstation.

**FY 2000 Accomplishments**

- 785 Continued development of CHATS V3.
  - 1215 Continued development of CI/HUMINT Automated Management Software (CHAMS).
  - 224 Continue CI & I OPS workstation hardware development.
  - 383 Conducted developmental and operational testing.
  - 20 Provided 10 ITRT Test Articles.
  - 1019 Provided management services and program support for development of products.
- Total 3646

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604321A - All Source Analysis System**

PROJECT

**B41**

## FY 2001 Planned Program

- 250 Continue development of CHATS V3.
- 200 Continue development of CI/HUMINT Automated Management Software (CHAMS).
- 100 Continue development of ITRT.
- 177 Continue CI & I OPS workstation hardware development.
- 50 Conduct developmental and operational testing support.
- 50 Provide 10 ITRT and 2 CI & I OPS WS Test Articles.
- 989 Provide management services and program support for development of products.

Total 1816

## FY 2002 Planned Program

- 225 Complete development of CHATS V3.
- 600 Continue development of CHAMS software.
- 200 Complete CI & I OPS WS development and conduct MS III.
- 100 Complete ITRT development and conduct MS III.
- 50 Mature, test and hand-off ASAS CI/HUMINT Single Source (SS) workstation software.
- 50 Provide 3 CI & I OPS WS and 4 CHATS Test Articles.
- 451 Conduct developmental and operational testing.
- 679 Provide management services and program support for development of products.

Total 2355

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604321A - All Source Analysis System**

PROJECT  
**B41**

<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA (BK5275) CHIMS (TIARA)	4079	3005	1492	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The CI/HUMINT Automated Management Software (CHAMS), a common software baseline, is being developed, tested and integrated into three of the CI/HUMINT product lines (CHATS, ITRT, and CI & I OPS workstation). CHAMS will continually be enhanced to keep pace with unfolding requirements. The hardware for all product lines is either procured from PM CHS or is an integration of commercial off-the-shelf (COTS) hardware.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
CHAMS Development and Testing	2-4Q	1-4Q	1-4Q	0	0	0	0	0
CHATS V3 Development and Testing	1-4Q	1-4Q	1-4Q	0	0	0	0	0
CI & I OPS Development and Testing	1-4Q	1-4Q	1-3Q	0	0	0	0	0
CI & I OPS Workstation Milestone III			4Q	0	0	0	0	0
ITRT Development and Testing		1-4Q	1-3Q	0	0	0	0	0
ITRT Milestone III			4Q	0	0	0	0	0
SS Workstation Software Development and Delivery to PM ASAS			1-4Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604321A - All Source Analysis System**

**PROJECT**  
**B41**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CHATS V3 Development	IDIQ	Computer Associates, Sierra Vista, AZ	1501	250	2Q	225	1Q	0	0	0	0	0
b . CHAMS Software	IDIQ	Computer Associates, Sierra Vista, AZ	1215	200	3Q	600	2Q	0	0	0	0	0
c . CI/HUMINT SS SW Development	IDIQ	Computer Associates, Sierra Vista, AZ	0	0		50	1Q	0	0	0	0	0
d . CI & I OPS WS Development	GSA	ESS, Fredrick, MD	1150	177	2Q	200	2Q	0	0	0	0	0
e . ITRT Development	GSA	ESS, Fredrick, MD	244	100	2Q	100	2Q	0	0	0	0	0
f . Refugee Management System	CPFF	EWA, Fairmount, WV	3000	0		0		0	0	0	0	0
Subtotal:			7110	727		1175		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604321A - All Source Analysis System**

**PROJECT**  
**B41**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Facility Support	MIPR	PM Intel Fusion, Ft. Belvoir, VA	305	209		109		0	0	0	0	0
Subtotal:			305	209		109		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Developmental Test	MIPR	PRC, McLean, VA	0	50	2Q	20	2Q	0	0	0	0	0
b . Developmental Test	MIPR	EPG, Ft. Huachuca, AZ	304	0		0		0	0	0	0	0
c . Operational Test	MIPR	IEWTD, Ft. Huachuca, AZ	79	0		431	2Q	0	0	0	0	0
d . Test Articles	MIPR	CHS, Ft. Monmouth, NJ	0	0		0		0	0	0	0	0
e . Test Articles	MIPR	ESS, Fredrick, MD	20	50	2Q	50	2Q	0	0	0	0	0
f . Security Accreditation	MIPR	CECOM, Ft. Monmouth, NJ	30	0		0		0	0	0	0	0
Subtotal:			433	100		501		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604321A - All Source Analysis System**

**PROJECT**  
**B41**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Contractor Support	BPA	Logicon/Sytex, Ft. Belvoir, VA	1012	670	1Q	455	1Q	0	0	0	0	0
b . Government In House	MIPR	PMO Intel Fusion, Ft. Belvoir, VA	342	110	1Q	115	1Q	0	0	0	0	0
Subtotal:			1354	780		570		0		0	0	0
<b>Project Total Cost:</b>			9202	1816		2355		0		0	0	0



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604329A - Common Missile</b>					PROJECT <b>013</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
013 AIR TO GROUND COMMON MISSILE	0	4923	16731	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

Evolutionary improvements are required to maintain the effectiveness of both Army ground and air combat units given the recent expansion of regional power threats, coupled with the expiration of the current stockpiles. A single missile to accomplish both ground and air missions provides flexibility during combat operations and makes the best use of limited development funds. The Common Missile will provide Bradley equipped forces, the Apache Attack Helicopter (AH-64), the Commanche Reconnaissance Helicopter (RAH-66), and the Future Combat System (FCS) with an enhanced fire and forget (F&F) capability, greatly increasing weapon system effectiveness and soldier and aircraft survivability. The Common Missile will effectively engage and destroy advanced armor on the digital battlefield well into the future. Additionally, the Common Missile will provide increased range and its modularity will provide for future technology-based enhancements. Funding through FY03 will be utilized to reduce and mitigate the risk factor in the Common Missile development. This will be accomplished using SMART (Simulation, Modeling and Acquisition for Requirements and Training), coupled with technology efforts concentrated on seekers, propulsion, warhead group and platform integration. In FY04, the Common Missile will enter the System Development and Demonstration (SDD) Phase with production of 73,000 missiles (Army requirements) commencing in FY08. Government cooperative development of the Common Missile is being actively pursued with the United Kingdom. A Memorandum of Understanding (MOU) is expected to be signed in the 4th Quarter FY01 timeframe. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

Project not funded in FY 2000.

**FY 2001 Planned Program**

- 4566 Product Development - Risk Reduction
- 211 Management Services - Risk Reduction
- 146 Small Business Innovation Research/Small Business Technology Transfer

Total 4923

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604329A - Common Missile**

PROJECT

**013**

**FY 2002 Planned Program**

- 15051 Product Development - Risk Reduction
- 1680 Management Services - Risk Reduction

Total 16731

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	0	4969	6951	0
Appropriated Value	0	4969	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. Omnibus or Other Above Threshold Reductions	0	0	0	0
c. Below Threshold Reprogramming	0	0	0	0
d. Rescissions	0	-46	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	9780	0
Current Budget Submit (FY 2002/2003 PB )	0	4923	16731	0

Change Summary Explanation:

FY 02/03: Increases (FY02-\$9.7M and FY03-\$19.6M) fund the risk reduction and mitigation efforts necessary for the Common Missile, ensuring the effective transition of promising science and technology concepts to the System Development and Demonstration (SDD) phase.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604329A - Common Missile</b>	PROJECT <b>013</b>
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<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
C70300 Longbow Hellfire/LBHF	292851	282745	234911	0	0	0	0	0	0	0
C70100 Laser Hellfire Msl	1010	0	6900	0	0	0	0	0	0	0

**D. Acquisition Strategy:** The Common Missile risk reduction effort will use full and open competition. U.S. Army Aviation and Missile Command (AMCOM) labs will provide assistance and technical expertise during the risk reduction effort.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
<b>RISK REDUCTION</b>				0	0	0	0	0
Contract Award Initial Designs		3Q		0	0	0	0	0
Baseline Design Review			3Q	0	0	0	0	0
Complete Performance Modeling				0	0	0	0	0
Complete Virtual Prototypes				0	0	0	0	0
Complete Initial Design CAD/CAE				0	0	0	0	0
Complete Simulation of System in Battlefield				0	0	0	0	0
<b>SYSTEM DEVELOPMENT AND DEMONSTRATION</b>				0	0	0	0	0
Contract Award				0	0	0	0	0
Integration and Testing				0	0	0	0	0
Design/Test/Qual				0	0	0	0	0
System Qualification				0	0	0	0	0
IOTE				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604329A - Common Missile**

**PROJECT**  
**013**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prime Contracts (Risk Reduction)	TBD	TBD	0	1000	3Q	8714	2Q	0	0	0	0	0
b . Support Contracts (Risk Reduction)	Various	Various	0	3402	1-4Q	5745	1-4Q	0	0	0	0	0
c . Development Engineering (Risk Reduction/SDD)	Various	Various	0	164	1-4Q	592	1-4Q	0	0	0	0	0
d . Prime Contracts (SDD)	TBD	TBD	0	0		0		0	0	0	0	0
Subtotal:			0	4566		15051		0		0	0	0

Remarks: Includes requirements/threat definition, preliminary/detailed design, testing, and hardware-in-the-loop.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604329A - Common Missile**

**PROJECT**  
**013**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Engineering/Proj Mgt (Risk Reduction/SDD)	Various	Various	0	357	1-4Q	1680	1-4Q	0	0	0	0	0
Subtotal:			0	357		1680		0		0	0	0

Remarks: Includes salaries and travel for collocated and core personnel.

Project Total Cost:			0	4923		16731		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604604A - MEDIUM TACTICAL VEHICLES</b>				PROJECT <b>H07</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
H07 FAMILY OF MED TAC VEH	1905	1942	1962	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element supports continued modernization of the Army's medium truck fleet. The Family of Medium Tactical Vehicles (FMTV) replaces aging M44 Series 2 1/2 ton trucks and M39 and M809 Series 5 ton trucks that are beyond their average useful life of 20-22 years. FMTV also provides a follow-on to the M939/A2 Series 5 ton truck. FMTV is required to fill 2 1/2 (LMTV) and 5 ton truck (MTV) requirements, resolve operational deficiencies and operate throughout the theater as multi-purpose transportation vehicles used by combat, combat support and combat service support units. This system is designed to be rapidly deployable worldwide and operate on primary and secondary roads, trails, and cross-country terrain in all climatic conditions. The funds will support continuous product improvements, technological upgrades and new capabilities for FMTV. Funding will be used to develop a lighter dump body with improved wear characteristics; develop an improved survivability cab for the safety of the soldier; study/analyze and build/test prototype of an alternative Load Handling System (LHS); insert electrical power management/technology; improve corrosion prevention; develop an alternative propulsion system; develop active suspension system and further vehicle component improvement.

This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP)

**FY 2000 Accomplishments**

- 1184 Power Management/Technology Insertion - Next Generation Electrical Architecture
- 393 Load Handling System Development (LHS)
- 255 Dump Bed Design Initiatives
- 73 Cab Survivability Improvement

Total 1905

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)****June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604604A - MEDIUM TACTICAL VEHICLES**

PROJECT

**H07****FY 2001 Planned Program**

- 350 Power Management/Technology Insertion - Next Generation Electrical Architecture
- 717 Load Handling System (LHS)
- 250 Dump Bed Design Initiatives
- 250 Cab Survivability Improvement (CSI) - Cargo Bed Protection
- 144 Vehicle Component Improvements
- 73 Trailer CAMEL Testing
- 100 Corrosion Prevention Initiatives
- 58 SBIR/STTR

Total 1942

**FY 2002 Planned Program**

- 50 Power Management/Technology Insertion - Next Generation Electrical Architecture
- 1250 Load Handling System (LHS)
- 100 Dump Bed Design Initiatives
- 300 Cab Survivability Improvement (CSI) - Cargo Bed Protection
- 200 Vehicle Component Improvements
- 62 Corrosion Prevention Initiatives

Total 1962

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604604A - MEDIUM TACTICAL VEHICLES**

PROJECT  
**H07**

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	1958	1959	1953	0
Appropriated Value	1973	1959	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-53	0	0	0
c. Omnibus or Other Above Threshold Reduction	-8	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-7	-17	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	9	0
Current Budget Submit (FY 2002/2003 PB )	1905	1942	1962	0

<b><u>C. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA1 Family of Medium Tactical Vehicles (D15500)	423614	471199	467386	0	0	0	0	0	0	0



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604604A - MEDIUM TACTICAL VEHICLES**

**PROJECT**  
**H07**

**D. Acquisition Strategy:** The contractual efforts will option to current contracts that are based on Time and Material (T&M).

<b><u>E. Schedule Profile</u></b>	<b><u>FY 2000</u></b>	<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>
Ballistic/Mine Protection (Ballistic Testing)				0	0	0	0	0
FMTV - Load Handling System (LHS) - Developmental Testing and Evaluation			2-3Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604604A - MEDIUM TACTICAL VEHICLES**

**PROJECT**  
**H07**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Power Management/Technology Insertion	PO	TACOM, Warren, MI	1005	100	2-3Q	50	2-3Q	0	0	0	0	0
b . Load Handling System (LHS)	C-T&M	S&S, Sealy, TX	393	717	2-3Q	670	1-3Q	0	0	0	0	0
c . Dump Bed Design Initiatives/Load Sensor	PO	TACOM, Warren, MI	255	250	2-3Q	100	2Q	0	0	0	0	0
d . Cab Survivability Impr. (FMTV)	PO	TACOM, Warren MI	0	250	3Q	300	2Q	0	0	0	0	0
e . Corrosion Prevention Initiatives	C-T&M	S&S, Sealy, TX	0	100	2-3Q	62	2-3Q	0	0	0	0	0
f . Vehicle Component Improvements	C-T&M	TBD	0	144	2-3Q	200	2Q	0	0	0	0	0
g . Trailer CAMEL Modeling	C-T&M	S&S, Sealy, TX	0	73	2Q	0		0	0	0	0	0
h . Active Suspension System	PO	TACOM, Warren MI	0	0		0		0	0	0	0	0
i . Alternative Propulsion System	PO	TACOM, Warren MI	0	0		0		0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604604A - MEDIUM TACTICAL VEHICLES**

**PROJECT**  
**H07**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			1653	1634		1382		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Cab Survivability Improvements (FMTV)		TACOM, Warren, MI	73	0		0		0	0	0	0	0
b . Power Management/Technology Insertion		TACOM, Warren, MI	179	0		0		0	0	0	0	0
Subtotal:			252	0		0		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604604A - MEDIUM TACTICAL VEHICLES**

**PROJECT**  
**H07**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Load Handling System	PO	Aberdeen Proving Grounds, MD	0	0		580	1-3Q	0	0	0	0	0
b . Power Management/Technology Insertion	C-T&M	Camber, Warren, MI	0	308	2-3Q	0		0	0	0	0	0
c . Cab Survivability Impr. (FMTV)	PO	Aberdeen Proving Grounds, MD	0	0		0		0	0	0	0	0
Subtotal:			0	308		580		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			1905	1942		1962		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604609A - Smoke, Obscurant and Target Defeating Sys ED**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	896	3428	7920	0	0	0	0	0	0	0
198 TARGET DEFEATING SYSTEM	0	0	332	0	0	0	0	0	0	0
200 SMOKE/OBSCURANT SYSTEM	896	3428	7588	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

U.S. Forces must be able to effectively neutralize and degrade enemy weapon systems and electro-optical systems/smart weapons that operate in the full range of the electromagnetic spectrum. This program element supports the conduct of Engineering and Manufacturing Development (EMD) of logistically supportable, high performance smoke and obscurant agents, munitions, and devices to improve the survivability of the combined armed force and complement combined weapons systems. Improvements are sought across the entire multi-spectral range from visual through infrared (IR) and millimeter wavelengths (MMW) radar for incorporation into self-protection large area and projected smoke systems. The smoke obscuration technologies supported by this program element enhance smoke systems as force multipliers. Program supports critical management studies and analyses that are conducted on a continuing basis to ensure that engineering and manufacturing development efforts are targeted against the emerging threat. Also supports the conduct of EMD in smoke and obscurant agents, munitions, and devices to improve the survivability of the combined armed force, complement combined weapons systems, and enhance force effectiveness and combat power. Systems developed in this PE primarily support the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604609A - Smoke, Obscurant and Target Defeating Sys ED**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
President's Previous Budget (FY 2001 PB)	918	3461	4621	0
Appropriated Value	918	3461	0	
Adjustments to Appropriated Value (Inflation)		0	0	
a. Congressional General Reductions		0	0	
b. SBIR / STTR	-17	0	0	
c. Omnibus or Other Above Threshold Reductions	-3		0	
d. Below Threshold Reprogramming			0	
e. Rescissions	-2	-33	0	
Adjustments to Budget Years Since FY2001 PB		0	3299	
Current Budget Submit (FY 2002/2003 PB )	896	3428	7920	0

FY02: Increase of \$3.299K supports the program to integrate Millimeter Wave (MMW) obscuration into the M56 Smoke Generator System.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604609A - Smoke, Obscurant and Target Defeating Sys ED</b>					PROJECT <b>200</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
200 SMOKE/OBSCURANT SYSTEM	896	3428	7588	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Project 200, smoke, obscurant systems supports the conduct of Engineering and Manufacturing Development (EMD) in smoke and obscurant agents, munitions, and devices to improve survivability of the combined arms force, complement combined weapons systems, and enhance force effectiveness and combat power. Funding supports the development of millimeter wavelength (MMW) radar obscuration for installation on the M56 and any other required vehicle platforms. The MMW obscuration can obscure a target from emerging threat systems which use x-ray type sensors. It can also create decoy signals to confuse these threat systems. This developmental effort supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 151 MMW - Prepared IPR package and conducted a successful Milestone I/II program review.
  - 145 MMW - Prepared contract package, issued solicitation, and awarded full and open, competitive contract.
  - 283 MMW - Conducted field trials and an evaluation of prototype obscurant materials against threat radar systems.
  - 317 MMW - Initiated contract for prototype designs and integration with vehicle platforms.
- Total 896

**FY 2001 Planned Program**

- 1600 MMW - Continues engineering design program, including logistical requirement studies and cost alternative studies.
  - 1061 MMW - Initiates assembly of engineering development and test prototype obscurant systems onto the M56 smoke system.
  - 300 MMW - Conducts analyses of alternative methods for the production and storage of MMW materials.
  - 374 MMW - Initiates toxicological and environmental studies required for materiel release of MMW materials.
  - 93 SBIR/STTR
- Total 3428

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604609A - Smoke, Obscurant and Target Defeating                  Sys ED</b>	PROJECT <b>200</b>
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**FY 2002 Planned Program**

- 2700 MMW - Continues engineering design program including any necessary redesign following engineering design test, logistics program evaluation, and material evaluation.
- 1300 MMW - Conducts contractor engineering design test on components and system.
- 1300 MMW - Fabricates and installs two MMW systems on two M56 smoke systems for conducting Government engineering design tests. (Estimated value \$150K each MMW prototype)
- 1000 MMW - Procures necessary MMW material for contractor and Government tests.
- 525 MMW - Continues toxicological and environmental studies.
- 763 MMW - Initiates planning efforts for integration of MMW components into candidate armored vehicle and other Transformation Campaign vehicle platforms.

Total 7588



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604609A - Smoke, Obscurant and Target Defeating**  
**Sys ED**

**PROJECT**  
**200**

<b><u>B. Other Program Funding Summary</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>To Compl</b>	<b>Total Cost</b>
RDTE, A Budget Activity 2, PE 0602622A, Project A552 Smoke/Novel Munitions	3573	3497	3561	0	0	0	0	0	0	0
RDTE,A Budget Activity 4, PE 0603627A, Smoke. Obscurant and Target Defeat	0	0	0	0	0	0	0	0	0	0
Other Procurement Army, OPA3, M99103, M56 Smoke Generator	12303	14287	23547	0	0	0	0	0	0	0
Other Procurement Army, OPA3, M99107, M58 Smoke System	3405	5534	0	0	0	0	0	0	0	0
Other Procurement Army, OPA3, G71300, M6 Discharger	2225	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:**Project D200 - Smoke/Obscurants: The Millimeter Wave smoke generation system began engineering development in FY2000 with a full and open competitive contract for engineering design, construction, and test of prototype systems mounted on the M56 smoke system. In FY2002, a new effort may be initiated to design and test the integration of obscurant systems into other desired armored platforms. This effort will be guided solely by the selection of the specific vehicle platforms required to meet changing Army requirements and the Transformation Campaign Plan.

<b><u>D. Schedule Profile</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
MMW - Milestone I/II, Program initiation	4Q			0	0	0	0	0
MMW - Initiate RDTE competitive contract	4Q			0	0	0	0	0
MMW - Conduct engineering design testing (Contractor)		4Q	1-4Q	0	0	0	0	0
MMW - Conduct engineering design testing (Government/User Jury)				0	0	0	0	0
MMW - Conduct Production Qualification Test (PQT)				0	0	0	0	0
MMW - Conduct Initial Operational Test and Evaluation (IOTE)				0	0	0	0	0
MMW - Conduct Milestone III and system acceptance				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604609A - Smoke, Obscurant and Target Defeating                  Sys ED</b>	PROJECT <b>200</b>
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<b><u>D. Schedule Profile (continued)</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
MMW - Initiate engineering modeling and design efforts on candidate armored vehicle platforms			1-2Q	0	0	0	0	0
MMW - Initiate construction of prototype systems on armored or robotic platforms				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604609A - Smoke, Obscurant and Target Defeating Sys**  
**ED**

**PROJECT**  
**200**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MMW - Hardware Development	C/CPFF	Titan Industries, Deland, Florida	301	2411	1Q	4418	1Q	0	0	0	0	0
b . MMW - Hardware design for armored platform	C/CPFF	Titan Industries, Deland, Florida	0	0		250	1Q	0	0	0	0	0
c . MMW - Armored or robotic system integration planning	In house	SBCCOM, APG, MD	0	0		300	1Q	0	0	0	0	0
Subtotal:			301	2411		4968		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MMW - Environmental and Toxicological studies	In house effort	SBCCOM, APG, MD	0	374	1Q	525	1Q	0	0	0	0	0
b . MMW - Human factors design efforts on other platforms	In house effort	SBCCOM, APG, MD	0	0		60	1Q	0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604609A - Smoke, Obscurant and Target Defeating Sys**  
**ED**

**PROJECT**  
**200**

II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	374		585		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MMW - Prototype evaluation	In house	SBCCOM, APG, MD	183	50	1Q	0		0	0	0	0	0
b . MMW - Engineering design testing - Contractor	C/CPFF	Titan Industries, Deland, Florida	100	0		1200	1Q	0	0	0	0	0
Subtotal:			283	50		1200		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604609A - Smoke, Obscurant and Target Defeating Sys ED</b>	PROJECT <b>200</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MMW - Project Management Personnel	In-house	SBCCOM, Edgewood, MD	312	593	1Q	707	1Q	0	0	0	0	0
b . MMW - Project Management Personnel for robotic or armored platforms	In-house	SBCCOM, Edgewood, MD	0	0		128	1Q	0	0	0	0	0
Subtotal:			312	593		835		0		0	0	0

<b>Project Total Cost:</b>			896	3428		7588		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>			<b>PE NUMBER AND TITLE</b> <b>0604611A - JAVELIN</b>						<b>PROJECT</b> <b>499</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
499 JAVELIN (AAWS-M)	1919	485	492	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

Javelin is a critical system to the operational design of the Army's Objective Force because it is man-portable, highly reliable, and capable of engaging multiple targets. Javelin enables key aspects of the Army's transformation to a more versatile, deployable, lethal, survivable, and sustainable force. This program continues the development and evolution of the Army's man-portable anti-tank system ensuring effectiveness in support of all three axes of Army Transformation. The Javelin, a replacement for the DRAGON, is a highly reliable, man-portable, fire-and-forget, anti-armor system that provides the individual soldier the capability of defeating multiple types of targets (tanks, APCs, bunkers, helicopter, walls, etc.). The system has a high kill rate against all known armor threats, at extended ranges, under all weather conditions, and in the presence of battlefield obscurants, advanced vehicle camouflage techniques and Active Protection Systems (APS). The system is hardened against countermeasures and does not require extensive training for effective employment. This system includes software improvements to maintain lethality against evolving targets and countermeasures, and increase the robustness of system performance in all environments. This effort includes warhead improvements, Counter Active Protection System (CAPS) improvements, training device improvements, and software development. These improvements provide for Command Launch Unit (CLU) enhancements to include embedded training, integration with Land Warrior and other launch platforms protecting objective force systems. These efforts will ensure Javelin maintains its overmatch capability well into the 21st Century (i.e., 2020). This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 1217 CAPS Generation 2.5 Integration & Assembly/Prototype Development (Includes 5 Generation 2.5 Prototypes)
- 159 Counter Active Protection System (CAPS) Testing
- 243 Counter Active Protection System (CAPS) Studies
- 300 Warhead Damage Assessment Tests (Includes 10 Grenades)

Total 1919

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604611A - JAVELIN**

PROJECT  
**499**

**FY 2001 Planned Program**

- 305 Counter Active Protection System/Countermeasures Software
- 165 Warhead Damage Assessment Testing
- 15 Small Business Innovative Research/Small Business Technology Transfer Program

Total 485

**FY 2002 Planned Program**

- 492 Counter Active Protection System/Countermeasures Software

Total 492

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	489	490	492	0
Appropriated Value	493	490	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-13	0	0	0
c. Omnibus or Other Above Threshold Reduction	-2	0	0	0
d. Below Threshold Reprogramming	1443	0	0	0
e. Recissions	-2	-5	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	0	0
Current Budget Submit (FY 2002/2003 PB )	1919	485	492	0

FY00: Reprogramming to increase CAPS funding to support CAPS Generation 2.5

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604611A - JAVELIN</b>	PROJECT <b>499</b>
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<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Missile Procurement, Army, CC0007, Javelin	344115	318300	414632	0	0	0	0	0	0	0
Missile Procurement, Army, CA0269, Javelin Initial Spares	4479	6554	2356	0	0	0	0	0	0	0

**D. Acquisition Strategy:** CAPS/Countermeasures software is in the research and development phase and is part of the PEO Tactical Missiles Horizontal Technology Insertion (HTI) initiative. This program has broad application to other tactical missile programs.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
CAPS Studies	1-4Q	1-2Q		0	0	0	0	0
CAPS Generation 3 Development	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Warhead Damage Assessment Testing	1Q	2Q		0	0	0	0	0



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> 5 - ENG MANUFACTURING DEV			<b>PE NUMBER AND TITLE</b> 0604619A - Landmine Warfare						<b>PROJECT</b> 088	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
088 WIDE AREA MINE ENG DEV	12862	15756	18938	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

The Wide Area Munition (WAM), a "smart," remotely-reprogrammable antitank weapon, provides unique control and offensive capability for a variety of missions. WAM will significantly reduce Army losses by using advanced smart munitions technology on the battlefield. The program provides for System Development and Demonstration of a pre-planned product improvement to Basic WAM which will provide a two-way command and control redeployment capability and enhancements to the sublet and ground platform, to include the Global Positioning System (GPS). This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 3250 Completed Platform Module Mechanical Testing
- 4112 Completed Ground Process Electronic Brassboards
- 5500 Continued Munition Receiver Transmitter, Control Station, and Antenna Development

Total 12862

**FY 2001 Planned Program**

- 4900 Complete Munition Receiver/Transmitter and Control Station Development
- 2635 Conduct Sublet Modifications
- 7752 Conduct Munition Integration
- 469 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)

Total 15756

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604619A - Landmine Warfare**

PROJECT  
**088**

**FY 2002 Planned Program**

- 5376 Complete Sublet Modifications
- 5158 Complete Munition Integration
- 2084 Complete System Software Development
- 670 Conduct Logistics Demonstration
- 3773 Conduct System Demonstration and Limited User Test
- 1877 Conduct Trainer Development

Total 18938

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	13218	15902	18853	0
Appropriated Value	13318	15902	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-356	0	0	0
c. Omnibus or Other Above Threshold Reduction	-54	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Recissions	-46	-146	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	85	0
Current Budget Submit (FY 2002/2003 PB )	12862	15756	18938	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604619A - Landmine Warfare**

PROJECT  
**088**

<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
WAM, E78100 (PAA)	15191	19108	2025	0	0	0	0	0	0	0
WAM Remote Control Unit, G01000 (OPA)	0	0	3317	0	0	0	0	0	0	0
WAM Individual Trainer, E78103 (PAA)	1775	1519	3822	0	0	0	0	0	0	0
WAM Collective Trainer, E78104 (PAA)	0	0	1954	0	0	0	0	0	0	0

**D. Acquisition Strategy:** The Basic WAM transitioned to Low Rate Production (LRP) in 3QFY96. A sole source Fixed Price Incentive Fee contract was awarded to the Engineering and Manufacturing Development (EMD) contractor for the LRP quantity. Production buys will be included under the LRP contract as Firm Fixed Price options. A sole source Cost Plus Incentive Fee contract for the System Development and Demonstration Phase of an improved WAM was awarded to the Basic WAM developer in FY 1996.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
WAM Basic - Material Release		2Q		0	0	0	0	0
WAM PIP - MS C (TC LRP)			3Q	0	0	0	0	0
WAM PIP - Full Rate Production Decisison Review (TC-Standard)				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604619A - Landmine Warfare</b>	<b>PROJECT</b> <b>088</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PIP Development & Demonstration	CPIF	Textron	51031	12097	1Q	10291	1Q	0	0	0	0	0
b . Basic EMD	CPIF	Textron	168381	0		0		0	0	0	0	0
Subtotal:			219412	12097		10291		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering Support		ARDEC	24764	1931	1Q	2900	1Q	0	0	0	0	0
b . Engineering Support		Other Government Agencies (misc)	5414	609	1Q	1803	1Q	0	0	0	0	0
Subtotal:			30178	2540		4703		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604619A - Landmine Warfare</b>	<b>PROJECT</b> <b>088</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Support		ATEC	11734	150	1Q	3444	1-2Q	0	0	0	0	0
<b>Subtotal:</b>			11734	150		3444		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management		PM-MCD, Picatinny Arsenal NJ	5979	500	1Q	500	1Q	0	0	0	0	0
b . SBIR/STTR			0	469		0		0	0	0	0	0
<b>Subtotal:</b>			5979	969		500		0		0	0	0

<b>Project Total Cost:</b>			267303	15756		18938		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>			PE NUMBER AND TITLE <b>0604633A - Air Traffic Control</b>						PROJECT <b>586</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
586 AIR TRAFFIC CONTROL	4786	2008	2197	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element (PE) funds continuous efforts in the development of modernized tactical and fixed base Air Traffic Control (ATC) systems that will enhance and ensure total aviation safety in both the tactical and strategic ATC domains. Funded in this program element is the development of the Mobile Tower System (MOTS), a tactical mobile tower designed to replace an antiquated and obsolete legacy system. Lack of modern deployable mobile towers require excessive deployment assets due to the size/weight, and do not have radio systems capable of compatibility with the latest army and joint aircraft. A Non-Developmental Item (NDI), MOTS will be equipped with modernized and secure avionics to ensure highly reliable and consistent tactical aircraft communications at semipermanent landing areas. MOTS will provide modern digital, secure, anti-jam communications that are compatible with Army, joint, and allied aircraft. The current fielded obsolete systems (AN/TSW-7A; AN/TSQ-70A) are extremely large for rapid deployment, require excessive transportation assets and cannot be airlifted with an organic helicopter, and have obsolete communication assets that limit the ability to control modern aircraft, creating a severe safety of flight environment. Funds are also included for the Mobile Expeditionary Accurate Night Vision Compatible Portable Airfield Lighting System (MEANPALS/PALS) which will allow the PM to continue the acquisition strategy to procure and evaluate prototype systems. MEANPALS/PALS is a mobile aircraft lighting system that provides all the necessary elements to establish a remote heli-pad/landing zone and a 10,000 foot runway. Currently, ATC units are utilizing primitive lighting capabilities, being restricted to nothing more than standard chemical light sticks or manually deployed bean bag lights. MEANPALS/PALS will provide a compatible visual precision approach landing system which is totally independent of aircraft systems and a lighted, virtual landing environment for aircraft arriving during periods of darkness and/or reduced low visibility. MEANPALS/PALS provides a significant force protection enhancement to the safety of Army, joint, and allied aircraft system operations at tactical airfields, forward area rearming and refueling points, landing and pick-up zones and other unimproved landing areas. This system will significantly enhance the safety of flight operations for aircraft arriving during periods of darkness, and marginal weather.

This PE also funds evaluation of the feasibility of alternatives for the Air Traffic Navigation, Integration, and Coordination System (ATNAVICS) and Tactical Airspace Integration System (TAIS) connectivity and interoperability with the National Airspace System (NAS) systems. Additionally, the Tactical Terminal Control System (TTCS) hardtop kit will be a product improvement and test effort to enhance the system's utility to the user and maximize the reliability of the communication suite of equipment by providing protection from environmental exposure.

New efforts will include the evaluation of alternative concepts for Non-Directional Beacons (NDB) replacement programs and radar target generators/simulators. Effort will include initial design and development of Combat Mission Simulator (CMS) to support the TAIS and ATNAVICS Systems. After the evaluation of the concepts, the most promising concepts/solutions for the NDB replacement and radar simulators will be determined. These efforts will significantly enhance aviation flight safety to preserve limited aviation resources. These systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604633A - Air Traffic Control**

PROJECT

**586**

## FY 2000 Accomplishments

- 20 Completed Market Analysis
- 75 Visual Instrument Display System (VIDS) Testing
- 200 Initiated the ATNAVICS/TPX-56 Certification
- 291 Developed System Engineering Documents and Competitive Requirements Analysis
- 1200 MOTS Procurement
- 15 Completed Market Analysis (MEANPALS/PALS)
- 1116 Initiated Procurement of NDI Prototypes (MEANPALS/PALS)
- 384 Developed Requirements & Conducted System Level Tradeoffs (MEANPALS/PALS)
- 355 Conducted System Risk Analysis and Evaluation (MEANPALS/PALS)
- 325 Initiated Demonstration and System Design Analysis (MEANPALS/PALS)
- 330 Conducted Design Verification and Iterative Trade Studies (MEANPALS/PALS)
- 475 Conducted Systems Engineering Compatibility Analysis (MEANPALS/PALS)

Total 4786

## FY 2001 Planned Program

- 1744 Complete EMD phase for MOTS
- 213 Conduct MOTS Developmental/Operational Test/Evaluation
- 51 Small Business Innovative Research (SBIR)/ Small Business Technology Transfer Program (STTR)

Total 2008

## FY 2002 Planned Program

- 200 TTCS Retrofit/Testing
- 700 NAS Interface with ATNAVICS
- 550 NAS Interface with TAIS
- 747 Concept Exploration for ATC Simulators (ATNAVICS/Fixed Base PAR/FPN-66 Radars)

Total 2197

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604633A - Air Traffic Control**

PROJECT  
**586**

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	4911	2026	2189	0
Appropriated Value	4981	2026	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-125	0	0	0
c. Omnibus or Other Above Threshold Reduction	-19	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-51	-18	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	8	0
Current Budget Submit (FY 2002/2003 PB )	4786	2008	2197	0

<b><u>C. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
APA AZ1710- Airfield Support Equipment	2645	0	0	0	0	0	0	0	0	0
APA AA0050 - Air Traffic Control	18410	73464	68887	0	0	0	0	0	0	0



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604633A - Air Traffic Control**

PROJECT  
**586**

**D. Acquisition Strategy:** Initiate a MOTS prototype for design, development, and testing. Initiate a MEANPALS system for demonstration/evaluation through a firm fixed price contract.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Completed Market Analysis for MOTS	1-2Q			0	0	0	0	0
Visual Instrument Display System (VIDS) Testing	2Q			0	0	0	0	0
Initiated the ATNAVICS/TPX-56 Certification		1Q		0	0	0	0	0
Develop System Engineering Documents and Competitive Requirements Analysis for MOTS	4Q			0	0	0	0	0
Completed Market Analysis for MEANPALS/PALS	1Q			0	0	0	0	0
Initiated Procurement of NDI Prototypes	4Q			0	0	0	0	0
Developed Requirements & Conducted System Level Tradeoffs	4Q			0	0	0	0	0
Conducted System Risk Analysis and Evaluation	4Q			0	0	0	0	0
Initiated Demonstration and System Design Analysis	4Q			0	0	0	0	0
Conducted Design Verification and Iterative Trade Studies	4Q			0	0	0	0	0
Conducted Systems Engineering Compatibility Study	4Q			0	0	0	0	0
Complete EMD phase for MOTS		3Q		0	0	0	0	0
Conduct MOTS Developmental/Operational Test/Evaluation		3-4Q		0	0	0	0	0
NAS Interface with ATNAVICS System			2Q	0	0	0	0	0
NAS Interface with TAIS System			2Q	0	0	0	0	0
Concept Exploration for ATC Simulators (ATNAVICS/Fixed BASE PAR/FPN-66 Radars)			2Q	0	0	0	0	0
TTCS Retrofit/Testing			2Q	0	0	0	0	0
Complete EMD Phase of NAS Interface with ATNAVICS				0	0	0	0	0
Complete EMD Phase of NAS Interface with TAIS				0	0	0	0	0
Complete EMD Phase for Air Traffic Radar Simulators				0	0	0	0	0
Testing for Air Traffic Radar Simulators				0	0	0	0	0
Concept Exploration for Replacement of Non Directional Beacons				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604633A - Air Traffic Control**

PROJECT

**586**

**E. Schedule Profile (continued)**

FY 2000 FY 2001 FY 2002 FY 2003 FY 2004 FY 2005 FY 2006 FY 2007

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604633A - Air Traffic Control**

**PROJECT**  
**586**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ATNAVICS	CPIFF	Raytheon, Boston, MA	26100	0		0		0	0	0	0	0
b . MOTS	TBD	TBD	2043	1442	3Q	0		0	0	0	0	0
c . ATNAVICS GFE	Reqn	Various	8	0		0		0	0	0	0	0
d . MEANPALS/PALS**	FFP	TBD*	2416	0		0		0	0	0	0	0
e . NAS/ATNAVICS INTERFACE	TBD	TBD	0	0		570	2Q	0	0	0	0	0
f . NAS/TAIS INTERFACE	TBD	TBD	0	0		485	2Q	0	0	0	0	0
g . ATC SIMULATORS	TBD	TBD	0	0		517	2Q	0	0	0	0	0
h . NDB BEACON	TBD	TBD	0	0		0		0	0	0	0	Continue
Subtotal:			30567	1442		1572		0		0	0	Continue

Remarks: \* Initial contract terminated for cause. Effort being reprocured.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604633A - Air Traffic Control**

**PROJECT**  
**586**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. ATNAVICS	MIPR	AMCOM, AL / CECOM, NJ	2688	0		0		0	0	0	0	0
b. MOTS	TBD	TBD	311	210	3Q	0		0	0	0	0	0
c. MEANPALS/PALS	Various	Various	1613	0		0		0	0	0	0	0
d. TTCS RETROFIT	TBD	TBD	0	0		125	2Q	0	0	0	0	0
e. ATC SIMULATORS	TBD	TBD	0	0		100	2Q	0	0	0	0	0
f. NDB BEACON	TBD	TBD	0	0		0		0	0	0	0	Continue
Subtotal:			4612	210		225		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604633A - Air Traffic Control**

**PROJECT**  
**586**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ATNAVICS	MIPR	TEXCOM, Ft Hood, TX / TECOM, APG, MD	1538	0		0		0	0	0	0	0
b . MOTS	MIPR	AATD, FT EUSTIS, VA	0	213	3Q	0		0	0	0	0	0
c . TTCS TESTING	TBD	TBD	0	0		75	2Q	0	0	0	0	0
d . VIDS	MIPR	HUNTER AAF, GA	75	0		0		0	0	0	0	0
e . ATC SIMULATORS	TBD	TBD	0	0		0		0	0	0	0	0
Subtotal:			1613	213		75		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ATNAVICS	T&M	Dynamic Rsch Corp, Madison, AL	1125	0		0		0	0	0	0	0
b . MOTS	CPFF	CAS, INC, HUNTSVILLE, AL	0	92	3Q	0		0	0	0	0	0
c . MEANPALS/PALS	Various	Various	271	0		0		0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604633A - Air Traffic Control**

**PROJECT**  
**586**

IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
d. NAS/ATNAVICS INTERFACE	TBD	TBD	0	0		130	2Q	0	0	0	0	0
e. NAS/-TAIS INTERFACE	TBD	TBD	0	0		65	2Q	0	0	0	0	0
f. ATC SIMULATORS	TBD	TBD	0	0		130	2Q	0	0	0	0	0
g. NDB BEACON	TBD	TBD	0	0		0		0	0	0	0	Continue
h. SBIR/STTR			0	51		0		0	0	0	0	0
Subtotal:			1396	143		325		0		0	0	Continue
Project Total Cost:			38188	2008		2197		0		0	0	Continue

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604642A - Light Tactical Wheeled Vehicle**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	6639	9802	2523	0	0	0	0	0	0	0
E40 LTV PROTOTYPE	6356	7375	2523	0	0	0	0	0	0	0
E46 HMMWV RECAP	283	2427	0	0	0	0	0	0	0	0
E57 LIGHT TACTICAL TRAILER	0	0	0	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This Program Element supports all Light Tactical Wheeled Vehicles such as the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV), HMMWV Recapitalization Program, Hybrid Electric HMMWV, and the Light Tactical Vehicle Trailers. In FY 2002 and FY 2003, this Program Element funds the RDT&E effort for a Block Improvement Program through technology integration into the HMMWV, Hybrid Electric HMMWV and the HMMWV Recapitalization Program. This project supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604642A - Light Tactical Wheeled Vehicle**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	7441	9893	979	0
Appropriated Value	7498	9893	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-200	0	0	
c. Omnibus or Other Above Threshold Reductions	-31	0	0	
d. Below Threshold Reprogramming	-602	0	0	
e. Rescissions	-26	-91	0	
Adjustments to Budget Years Since FY2001 PB	0	0	1544	
Current Budget Submit (FY 2002/2003 PB )	6639	9802	2523	0

FY 2002/2003 - Funding added to support HMMWV development.



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604642A - Light Tactical Wheeled Vehicle</b>				PROJECT <b>E40</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
E40 LTV PROTOTYPE	6356	7375	2523	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The HMMWV is a lightweight, high performance, four-wheel drive, air transportable and air droppable, high mobility tactical wheeled vehicle. The HMMWV consists of a basic design with several variants including Cargo/Utility, Armament Carrier, Ambulance, Shelter Carrier and Armored Armament Carrier. FY 2002 and FY 2003 funds HMMWV modernization effort as well as the development of a Hybrid Electric (HE) HMMWV. The modernization effort leverages advancement in commercial and military truck technology for insertion into the HMMWV. This effort will address changes to the Federal Motor Vehicle Safety Standards (FMVSS), including anti-lock brakes and changes to environmental requirements for the engine. New commercial technology, combined with greater achievement of user requirements, will result in an improved HMMWV. Developmental testing will begin in FY 2002. Testing will include reliability and maintainability (RAM), environmental, transportability, and automotive. The Hybrid Electric (HE) HMMWV is an Army initiative to reduce vehicle Operation and Sustainment (O&S) costs, fuel consumption, and the logistical footprint while providing the opportunity for enhanced electric power and silent watch operation. This initiative has a potential savings of 30% in O&S costs alone. JSTARS, STRIKER, THAAD, SENTINEL, and LOSAT PMs are potential users of the HE HMMWV. The HMMWV supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 5922 HMMWV Modernization Development Contract
  - 184 Support Costs (Engineering/Quality/Matrix)
  - 250 Test Start-up - HMMWV Modernization
- Total 6356

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604642A - Light Tactical Wheeled Vehicle**

PROJECT

**E40**

## FY 2001 Planned Program

- 6870 HMMWV Modernization Development Contract
- 286 Support Costs (Engineering/Quality/Matrix Support)
- 219 SBIR/STTR

Total 7375

## FY 2002 Planned Program

- 708 HMMWV Modernization Development Contract
- 450 Assemble and test up to ten prototype vehicles - HMMWV Modernization
- 562 Support Costs (Engineering/Quality/Matrix Support)
- 803 HE HMMWV Development Contract

Total 2523

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604642A - Light Tactical Wheeled Vehicle**

PROJECT  
**E40**

<b>B. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA1 Hi Mob Multi-Purp Whld Veh (D15400)	91302	136781	130821	0	0	0	0	0	0	0
OPA4 Initial Spares - TSV DS1030	72	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The acquisition strategy for the HMMWV Modernization Program is to award a block improvement engineering change proposal award to the production contract.  
Strategy for the Hybrid Electric HMMWV is to award a competitive development contract.

<b>D. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Award HMMWV Development Contract - Modernization Program	3Q			0	0	0	0	0
Developmental Test & Evaluation			1Q	0	0	0	0	0
IPR Decision - HMMWV Modernization Program			4Q	0	0	0	0	0
Award Production Contract - HMMWV Modernization				0	0	0	0	0
Award HE HMMWV Development Contract				0	0	0	0	0
Govt Testing - HE HMMWV				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604642A - Light Tactical Wheeled Vehicle**

**PROJECT**  
**E40**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Contract - HMMWV Modernization	SS/CPFF	AM General, Mishawaka, IN	5922	6870	2Q	708	2Q	0	0	0	0	0
b . Engineering Support - HMMWV Modernization	N/A	AMSAA, APG, MD	67	0		0		0	0	0	0	0
c . Engineering Support - HMMWV Modernization	N/A	WES, Vicksburg, MS	117	0		0		0	0	0	0	0
d . In-House Engineering (TACOM)	N/A	TACOM, Warren, MI	0	505	2-4Q	562	1-4Q	0	0	0	0	0
e . Development Contract - HE HMMWV	SS/CPFF	TBS	0	0		803	2Q	0	0	0	0	0
Subtotal:			6106	7375		2073		0		0	0	0

Remarks: Development Contract includes cost of a Technical Data Package (TDP) upon completion of the R&D Phase.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604642A - Light Tactical Wheeled Vehicle**

**PROJECT**  
**E40**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not applicable

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Developmental Testing - HMMWV Modernization	N/A	ATC, Aberdeen, MD	250	0		450	1Q	0	0	0	0	0
b . Developmental Testing - HE HMMWV	N/A	ATC, Aberdeen, MD	0	0		0		0	0	0	0	0
Subtotal:			250	0		450		0		0	0	0

Remarks: Testing will include RAM, environmental, transportability, and automotive testing.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604642A - Light Tactical Wheeled Vehicle</b>	PROJECT <b>E40</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not applicable

Project Total Cost:			6356	7375		2523		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604642A - Light Tactical Wheeled Vehicle</b>				PROJECT <b>E46</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
E46 HMMWV RECAP	283	2427	0	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The HMMWV Recapitalization Program is a remanufacture program to extend the life of the over age HMMWVs. The HMMWV fleet is experiencing increased Operation and Support (O&S) costs, excessive wear, and corrosion. These HMMWVs are in need of replacement/remanufacture. The HMMWV Recapitalization Program will provide operational and safety improvements to the current fleet of vehicles and will extend the useful service life by 21 years. The recapitalized HMMWVs may include enhanced performance capability such as anti-lock brakes, new engine, new transmission and improved diagnostic capability. These improvements will be achieved by a combination of component remanufacture and replacement to include over 50 mandatory replacement components that have been tested on previous versions of the HMMWV. Components, which have been improved during the evolution of the Commercially Based Tactical Truck (COMBATT) demonstration of commercial technology, will also be incorporated in the recapitalized vehicles where technically and economically feasible. The objective of the HMMWV Recapitalization Program is to extend the useful service life of the vehicles. In FY 2005, 60% of the HMMWV fleet will be over-aged. Technology insertion opportunities will be developed, targeted on reducing overall O&S costs and improving performance. Examples are corrosion protection, digitization requirements, Hybrid Electric (HE) kits and other O&S cost drivers. The HMMWV Remanufacture Program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 98 HE HMMWV Transportability Study
  - 100 Test Planning - HE Kits
  - 85 Support Costs (engineering/quality/matrix)
- Total 283

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604642A - Light Tactical Wheeled Vehicle**

PROJECT  
**E46**

**FY 2001 Planned Program**

- 1200 HE HMMWV Kit Development
  - 1000 Testing of HE HMMWV Kits (2 Kits)
  - 155 Support Costs (engineering/quality/matrix support)
  - 72 SBIR/STTR
- Total 2427

**B. Other Program Funding Summary**

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA-1 Hi Mob Multi-Purp Whld Veh (D15400)	91302	136781	130821	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The HMMWV Recapitalization strategy will consist of a competitively awarded R&D contract to determine the feasibility of incorporating technology insertion into the HMMWV platform. This technology insertion includes anti-lock brakes, a new engine and transmission and improved diagnostics. The selected contractor will provide hardware for government evaluation as well as a technical data package of the final vehicle configuration which will be suitable for a competitive production award. Hybrid Electric HMMWV Kits will be developed by the current HMMWV producer and procured through the HMMWV production contract.

**D. Schedule Profile**

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Award HE HMMWV Kit Development		2Q		0	0	0	0	0
Testing of HE Kits		3Q		0	0	0	0	0



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604642A - Light Tactical Wheeled Vehicle**

**PROJECT**  
**E46**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support	N/A	Warren, MI	85	227		0		0	0	0	0	0
b . HE C-130 Transportability Study	SS/FFP	AM General, Mishawaka, IN	98	0		0		0	0	0	0	0
c . HE Kit Development	SS/CPFF	AM General, Mishawaka, IN	0	1200	2Q	0		0	0	0	0	0
Subtotal:			183	1427		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not applicable

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604642A - Light Tactical Wheeled Vehicle</b>	<b>PROJECT</b> <b>E46</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Testing of HE Kits	SS/CPFF	NATC, Carson City, Nevada	100	1000	3Q	0		0	0	0	0	0
Subtotal:			100	1000		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not applicable												
<b>Project Total Cost:</b>			283	2427		0		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604649A - Engineer Mobility Equipment Development**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	45657	14862	9279	0	0	0	0	0	0	0
G25 M1 BREACHER DEV	45200	14862	0	0	0	0	0	0	0	0
G26 HEAVY ASSAULT BRIDGE	457	0	0	0	0	0	0	0	0	0
G29 ENGINEER VEHICLE UPGRADES	0	0	9279	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element supports the development of new, advanced combat engineer systems that will have mobility characteristics comparable to the maneuver forces supported. The programs included in this program element are the Grizzly (M1 Breacher), the Wolverine (Heavy Assault Bridge) and the legacy Armored Vehicle Launched Bridge (AVLB). The Grizzly base vehicle is an M1 Abrams Tank chassis whereas the Wolverine base vehicle is the M1A2 System Enhancement Package (SEP) Abrams Tank chassis. The Grizzly integrates a versatile/survivable full-width mine clearing blade with automatic depth control, a power driven arm, and an armored commander's control station on the chassis. The Wolverine integrates a Military Load Class (MLC) 70 bridge spanning a 24 meter gap (26 meter bridge) with computer controlled launching mechanism and is fully FBCB2 compliant. The Engineer Vehicle Upgrades (G29) project recapitalizes the M48/M60 based AVLB. The Engineer Vehicle Upgrades (DG29) support the Legacy transition path of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604649A - Engineer Mobility Equipment Development**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	57881	0	0	0
Appropriated Value	58321	15000		
Adjustments to Appropriated Value		0		
a. Congressional General Reductions		0		
b. SBIR / STTR	-1558	0		
c. Omnibus or Other Above Threshold Reductions	-239	0		
d. Reprogramming	-10665	0		
e. Rescissions	-202	-138		
Adjustments to Budget Years Since FY2001 PB		0	9279	
Current Budget Submit (FY 2002/2003 PB )	45657	14862	9279	0

**Change Summary Explanation:**

- FY 2000 Funds reprogrammed (-\$10665K) to higher priority requirements.
- FY 2002/2003 Funds reprogrammed to support the AVLB recapitalization effort.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604649A - Engineer Mobility Equipment Development</b>				PROJECT <b>G25</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
G25 M1 BREACHER DEV	45200	14862	0	0	0	0	0	0	0	0

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

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

**C. Acquisition Strategy:** Not applicable for this item.

**D. Schedule Profile:** Not applicable for this item.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604649A - Engineer Mobility Equipment Development</b>				PROJECT <b>G26</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
G26 HEAVY ASSAULT BRIDGE	457	0	0	0	0	0	0	0	0	0

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

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

**C. Acquisition Strategy:** Not applicable for this item.

**D. Schedule Profile:** Not applicable for this item.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604649A - Engineer Mobility Equipment Development</b>					PROJECT <b>G29</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
G29 ENGINEER VEHICLE UPGRADES	0	0	9279	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Recapitalization is the selected upgrade that renews the Armored Vehicle Launched Bridge (AVLB) Chassis and Bridge to near zero time/zero miles. Bridge is upgraded from Military Load Class (MLC) 60 to MLC 70 with complete repair of common parts. Chassis is upgraded by installing improved hydraulic, electrical, suspension and powertrain system. The MLC 70 bridge is required to safely cross the current combat fleet weighing between 60 and 70 tons. The Chassis upgrade provides maneuver force mobility, sustained operational readiness rates and logistics commonality with current/future maneuver force. AVLB recapitalization updates obsolete 1950's technology and eliminates associated supply and obsolescence issues. Recapitalization is fundamental to the Army Transformation Plan, improving mobility, operational readiness rates and controlling fleet Operation and Support (O&S) costs.

The 36 year old AVLB, which has never had a major upgrade, must complement the Wolverine to meet the assault bridging requirement of the Army Transformation Plan. Recapitalization of the AVLB ensures it is viable and supportable for another 20 years of service. It provides the capability for MLC 70 combat vehicles (Abrams Tank and HERCULES) to safely cross the full span. The current 81% AVLB readiness rate will improve to sustain the required 90% operational readiness.

**FY 2002 Planned Program**

- 8703 Developmental Contract
  - 576 Program Management
- Total 9279

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604649A - Engineer Mobility Equipment Development</b>	PROJECT <b>G29</b>
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<b>B. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PA, WTCV, GZ3050, AVLB SLEP	0	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The recapitalized vehicle incorporates proven current technology components to support a low risk effort. Depending on the results of a market survey this will be either a competitive contract or sole source to General Dynamics Land Systems (GDLS) who has produced the only demonstrator vehicle to date. A single development contract will be awarded to complete design integration, testing and logistics package. Testing will verify performance, durability and safety in a combined Developmental Test/Operational Test (DT/OT). In production, a contractor will be selected based on the results of a market survey. The selected contractor will integrate the procurement of hardware/kits for application at Anniston Army Depot.

<b>D. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Award Development Contract			2Q	0	0	0	0	0
Start Combined DT/OT				0	0	0	0	0
Complete Combined DT/OT				0	0	0	0	0
Production Readiness Review				0	0	0	0	0
Milestone III				0	0	0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604649A - Engineer Mobility Equipment Development**

**PROJECT**  
**G29**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Develop TDP, Proveout	CPFF	TBD	0	0		8703	2Q	0	0	0	0	0
Subtotal:			0	0		8703		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Other Gov't Agencies	MIPR	TACOM Warren, MI, Various Sup't Offices	0	0		180	1Q	0	0	0	0	0
Subtotal:			0	0		180		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604649A - Engineer Mobility Equipment Development**

**PROJECT**  
**G29**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DT/OT	TBD	TBD	0	0		0		0	0	0	0	0
Subtotal:			0	0		0		0		0	0	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PMO Support	NA	TACOM, Warren, MI	0	0		396	1Q	0	0	0	0	0
Subtotal:			0	0		396		0		0	0	0
<b>Project Total Cost:</b>			0	0		9279		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604710A - Night Vision Systems Engineering Development**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	31308	33764	24201	0	0	0	0	0	0	0
L69 HTI 2D GEN FLIR ED	10584	11839	0	0	0	0	0	0	0	0
L70 NIGHT VISION DEV ED	16184	15691	16379	0	0	0	0	0	0	0
L74 LRAS3	1490	1477	797	0	0	0	0	0	0	0
L75 PROFILER	3050	4757	6158	0	0	0	0	0	0	0
L76 LIGHTWEIGHT LASER DESIGNATOR RANGEFINDER UPGRADES	0	0	867	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element provides night vision technologies required for U. S. defense forces to engage enemy forces twenty-four hours a day under conditions with degraded visibility due to darkness, adverse weather and battlefield obscurants. These developments and improvements to high performance night vision electro-optics, radar, laser, and thermal systems and integration of related multi-sensor suites will enable near to long range target acquisition, identification and engagement to include significant fratricide reduction, which will improve battlefield command and control in "around-the-clock" combat operations. Project DL69 focuses on inserting key Horizontal Technology Integration Second Generation and beyond Forward Looking Infrared (FLIR) (HTI SGF) thermal sensor technology into common battle groups. Project DL70 focuses on night vision electro-optical, laser, and other target identification and location equipment for use by individual soldiers and a variety of platforms. In addition to the Lightweight Laser Designator Rangefinder (LLDR) (a Warfighter Rapid Acquisition Program), this project includes both mounted and dismounted HTI Laser evaluation and assessment, and integrates individual sensors into a common architecture for the infantry (including Long Range Surveillance) field artillery and other units. It also funds development and qualification of critical upgrades (e.g., dual wavelength target acquisition capabilities) for Thermal Weapon Sight and Driver's Vision Enhancer production programs, and funds activities associated with image and sensor fusion capabilities (e.g., image intensification and thermal). Project DL74 focuses on a long-range multi-sensor system utilizing HTI SGF thermal sensor and other technologies, for use by U. S. Army scouts at extended ranges beyond the Abrams and Bradley capabilities. The Long Range Advanced Scout Surveillance System (LRAS3) will provide the scouts with their first reconnaissance and surveillance system with a twenty-four hour, all weather capability that is mounted or man-portable. FY01/02 funds support the development and implementation of an LRAS3 interface with FBCB2 (Force XXI Battle Command Brigade and Below), enabling automated handoff of the digital target grid location. Project DL75 focuses on development of the Profiler, an upgrade of the capabilities of the current AN/TMQ-41 Meteorological Measuring Set. Profiler will employ remote and local sensing of the atmosphere, mesoscale modeling and enhanced computing capabilities to provide target area and more accurate meteorological data. These enhancements and new capabilities will increase the lethality of field artillery systems such as Crusader, Multiple Launched Rocket System (MLRS) and towed and self-propelled cannons. Project DL76 focuses on LLDR Upgrades that will increase the operational capability and survivability of Combat Observation Lasing (COLT) and Fire Support (FIST) teams, thereby

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604710A - Night Vision Systems Engineering Development**

yielding greater lethality for precision and area munitions through precise target location and designation. Upgrades developed under this project will be inserted either through ongoing production contracts or a Mod-in-Service line. These projects support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	38266	32574	33984	0
Appropriated Value	38644	34074	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-1014	0	0	
a. Omnibus or Other Above Threshold Reductions	0	0	0	
d. Below Threshold Reprogramming	-6099	0	0	
e. Rescissions	-223	-310	0	
Adjustments to Budget Years Since FY2001 PB	0	0	-9783	
Current Budget Submit (FY 2002/2003 PB )	31308	33764	24201	0

**Change Summary Explanation:**

FY 2000: \$3M Congressional increase for Combustion Eyesafe Laser was reprogrammed to 0602709A DH95. DL69 \$0.944M reprogrammed to Navy PE 0603879N. DL75 \$1.5M was reprogrammed to PE 02073744A D028. \$0.5M was reprogrammed to PE 06054817 D902.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604710A - Night Vision Systems Engineering Development**

FY 2001: Congressional mark of \$1.5M in DL70 for Eyesafe Laser, in process of reprogramming to 0602709A DH95.

FY 2002: DL69 \$13.674M was reprogrammed to 0203774A D508; DL75 \$3.785M was reprogrammed from the OPA2 K27900 Profiler account.

FY 2003: DL69 \$6.633M was reprogrammed to 0203774A D508; DL75 \$0.6M was reprogrammed from the OPA2 K27900 Profiler account.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>			<b>PE NUMBER AND TITLE</b> <b>0604710A - Night Vision Systems Engineering Development</b>						<b>PROJECT</b> <b>L70</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L70 NIGHT VISION DEV ED	16184	15691	16379	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project develops and improves high performance night vision electro-optics, thermal and laser systems, and systems integration of related multi-sensor suites to enable near to long range target acquisition and engagement as well as improve battlefield command and control in "around-the-clock" combat operations. The Lightweight Laser Designator Rangefinder (LLDR) entered a thirty month Engineering and Manufacturing Development Phase in FY 1997. LLDR is a day/night manportable modular target location and laser designator system. The target location system combines a thermal imager, a day camera, eye-safe laser rangefinder, compass, global positioning system, and digital data/image export capability. The laser designator provides pinpoint targeting for laser-guided munitions. LLDR gives the artillery forces the capability to observe, locate and designate targets for direct and indirect fire missions. The LLDR will also be used on the STRIKER vehicle. Improvements to the Thermal Weapon Sight (TWS) and the Driver's Vision Enhancer (DVE) are also developed under this project. TWS improvements are focused on the integration of target location and digital data transfer capabilities. DVE improvements focus on achieving a dual wavelength capability, leading to image fusion. Sensor fusion activities are planned for both vehicle mounted systems, such as DVE, and soldier carried systems, such as TWS. The DVE dual wavelength capabilities will be developed, evaluated and inserted incrementally into ongoing production efforts. The architecture for interoperability of sensors [Mini Eye-Safe Laser Infrared Observation Set (MELIOS), LLDR, Lightweight Video Reconnaissance System (LVRS), Multi-function laser, Long Range Advanced Scout Surveillance System (LRAS3), Forward Looking Infrared systems] on the digital battlefield will be developed through an integrated sensor suite program. This will facilitate the merging of existing sensor data for digital distribution within the Joint Technical Architecture-Army. Sensor data distribution activities include the development and promulgation of a common device architecture, and a computer-based system which will verify and validate the flow of data from the sensor, through a variety of computing devices and then out over the communications network. The Digital RSTA (Reconnaissance, Surveillance and Target Acquisition) effort digitizes Long Range Surveillance activities from the most forward deployed elements into ASAS (All Source Analysis System). MELIOS improvement efforts are digital connectivity to battlefield computers for precise and rapid fire support missions, an upgraded display that allows the operator to view self and target location grid coordinates, and interface with an Image Intensification device for 24-hour mission capability. Other efforts include evaluation of the suitability and technology supporting a common, HTI, laser system that could be used in a variety of ground and air platforms. The NVG programs will develop enhancements and improvements to be incorporated into ground and aviation Night Vision Goggle systems. These night vision devices are used by regular US Army and Special Forces units.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604710A - Night Vision Systems Engineering  
Development**

PROJECT

**L70**

## FY 2000 Accomplishments

- 5549 Continued LLDR EMD activities, to include technical and operational testing.
- 2240 Fabricated prototypes and evaluated Thermal Upgrade activities (TWS Target Location and displays (eight test units), DVE Dual Wavelength (six test units) and MANTECH improvements covering both systems).
- 1598 Continued integration and technical tests of the sensor architecture for FBCB2 and a variety of platforms such as Target Location, Designation and Hand-Off System (TLDHS) and Striker, and participated in the Joint Contingency Forces (JCF) Army Warfighting Experiment (AWE) with Digital RSTA prototypes.
- 553 Conducted modeling and simulation efforts in support of modular laser design for systems such as: FSCS, Apache, Kiowa Warrior, TUAV, LLDR and LRAS3; initiated dismounted multifunction application for the HTI tactical laser (i.e. reduced cost, size, weight and power consumption), to include initial prototype development for systems such as the M-4/M-16, MK-19 and TWS.
- 3000 Conducted analysis and preliminary detail design effort for meeting range requirements for Striker Vehicle application
- 1000 Designed and fabricated internal digital interface (MELIOS Digital RSTA, 3 test units) to support battlefield data dissemination
- 2244 Conducted analyses and preliminary design effort for Enhanced NVG to make lighter, smaller and increase individual movement techniques.

Total 16184

## FY 2001 Planned Program

- 4852 Continue Thermal Upgrade activities (prototype test and evaluation) to enhance combat effectiveness of TWS and DVE. (Includes head tracking system, Modular Ballistic Solution and TWS Heavy)
- 1249 Continue integration and technical tests of the sensor architecture, including implementing Digital RSTA results from the JCF AWE.
- 1992 Complete LLDR EMD program and transition to production.
- 3306 Continue LLDR detail design of range enhancements for vehicle mounted requirements
- 2345 Initiate Image Fusion of Image Intensification and Thermal technologies to enhance the effectiveness of combat and combat service support platforms such as: the individual soldier and vehicles using the DVE (Bradley, Smoke Generators, etc).
- 1500 Eyesafe Laser development (pending DA reprogramming to 0602709A DH95).
- 447 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Program

Total 15691

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604710A - Night Vision Systems Engineering  
Development**

PROJECT

**L70**

## FY 2002 Planned Program

- 1505 Continue integration and technical tests of the sensor interface architecture into the Army C4I operating system.
- 1265 Complete Image Fusion of Image Intensification and Thermal technologies to enhance the effectiveness of combat and combat service support platforms such as: the individual soldier and vehicles using the DVE (Bradley, Smoke Generators, etc).
- 2718 Field artillery sensor upgrade activities (to include LLDR and forward observer optics)
- 8882 Initiate development of next generation Image Intensifier systems (Enhanced Night Vision Goggles (ENVG), Aviation Night Vision Goggles (ANVG), and Advanced Heads Up Display (A/HUD)).
- 2009 Complete Thermal Upgrade activities (prototype test and evaluation) to enhance combat effectiveness of TWS Heavy

Total 16379



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604710A - Night Vision Systems Engineering Development**

**PROJECT**  
**L70**

<b><u>B. Other Program Funding Summary</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>To Compl</b>	<b>Total Cost</b>
Night Vision AN/PVS-7 Aid K36400 OPA2	44861	59839	34074	0	0	0	0	0	0	0
Night Vision TWS K22900 OPA2	40098	36015	35134	0	0	0	0	0	0	0
Night Vision DVE K31300 OPA2	3484	11855	1942	0	0	0	0	0	0	0
Night Vision LLDR K31100 OPA2	0	7029	7059	0	0	0	0	0	0	0
Night Vision LVRS K30800 OPA2	4868	1187	1339	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The development programs in this project are currently all based on competitive awards and under cost reimbursement type contract. A dual source/approach will be pursued for the DVE image fusion effort scheduled for FY 2001.

<b><u>D. Schedule Profile</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
HTI laser prototype design, modeling and smulation	1-3Q			0	0	0	0	0
Develop Prototype Multifunction Tactical HTI Laser for Dismounted Application	2-4Q	1Q		0	0	0	0	0
HTI Laser Demo on Dismounted Platform		2-3Q		0	0	0	0	0
LLDR Technical Test	4Q	1Q		0	0	0	0	0
LLDR IOT&E		3Q		0	0	0	0	0
LLDR MS III Decision		3Q		0	0	0	0	0
LLDR Vehicle Variant	2-4Q	1-4Q	1-4Q	0	0	0	0	0
Digital MELIOS Design & Fabrication	2-4Q			0	0	0	0	0
Enhanced NVG	3-4Q	1-4Q	1-4Q	0	0	0	0	0
Multifunction Eyesafe Tactical Laser efforts		2-4Q		0	0	0	0	0
Aviation Night Vision Goggles Upgrade			4Q	0	0	0	0	0
Sensor Architecture Platform Demonstration and Evaluation	1-3Q			0	0	0	0	0
Sensor Architecture demonstration for JCF AWE	4Q			0	0	0	0	0
Sensor Architecture; digital RSTA development and test based on AWE results		1-4Q	1-4Q	0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604710A - Night Vision Systems Engineering Development</b>	PROJECT <b>L70</b>
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<b>D. Schedule Profile (continued)</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Thermal Upgrade MANTECH for Focal Plane Array and optics	1-3Q			0	0	0	0	0
Thermal Upgrade target location and display capability demonstration and evaluation for TWS	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Thermal Upgrade dual wavelength capability demonstration and evaluation and competition for DVE	1-4Q	1-4Q	1-3Q	0	0	0	0	0
Field Artillery Sensor Upgrade Activities			1-4Q	0	0	0	0	0
Image Fusion Activities for DVE		1-4Q	1-4Q	0	0	0	0	0
Uncooled Heavy TWS development			2-4Q	0	0	0	0	0
Sensor Fusion Activities for Driving and soldier carried systems				0	0	0	0	0
Universal Sensor System				0	0	0	0	0
Cost Effective Targeting System				0	0	0	0	0
Head Tracked Commanders' Sight				0	0	0	0	0
Warrior Extended Battle Space Sensors				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604710A - Night Vision Systems Engineering**  
**Development**

**PROJECT**  
**L70**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DVE Development	C/CPIF	Various	21831	0		0		0	0	0	0	0
b . Various Prototypes and Studies	C/CPIF	Various	2947	0		0		0	0	0	0	0
c . LLDR Advanced Demonstration System	C/CP	Litton Laser, Apopka, FL	2556	0		0		0	0	0	0	0
d . LLDR WRAP	C/CP	Various	4253	0		0		0	0	0	0	0
e . LLDR EMD	C/CP	Litton Lasers, Apopka FL	18958	1300		0		0	0	0	0	0
f . Sensor Architecture/Digital RSTA	C/CPIF & C/CP	Various	8012	1250	1Q	1000	1Q	0	0	0	0	0
g . HTI Laser Trade Studies	C/CP	Various	1020	0		0		0	0	0	0	0
h . HTI Laser MFS3 design and prototype activities	C/CPIF	Raytheon, Dallas,TX	565	0		0		0	0	0	0	0
i . Modular HTI Multifunction Laser Activities	C/CP	Various	178	0		0		0	0	0	0	0
j . AN/TMQ-41 Trade Studies and related activities	C/CP	Various	1232	0		0		0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604710A - Night Vision Systems Engineering**  
**Development**

**PROJECT**  
**L70**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . MANTECH Focal Plane Array and optics	C/CP	Raytheon, Dallas, TX	1500	0		0		0	0	0	0	0
l . Thermal Upgrades for TWS (target location)	C/CP, MIPR	Raytheon, El Segundo, CA, Various	705	3000	1Q	1509	1Q	0	0	0	0	0
m . Thermal Upgrades for DVE (Dual wavelength) and competition	C/CP	Kaiser Electric San Diego, CA, Various	1644	1900	1Q	500	1Q	0	0	0	0	0
n . Image Fusion for DVE	C/CP	To Be Selected	0	1274	2Q	340	1Q	0	0	0	0	0
o . LLDR Vehicle applications	C/CP	Litton Laser, Apopka, FL Various	3000	2934	1Q	0		0	0	0	0	0
p . Digital MELIOS Design & Fabrication	C/FP	Litton Lasers, Inc.	1000	0		0		0	0	0	0	0
q . Field artillery sensor upgrades	Various	To Be Selected	0	0		2689	2Q	0	0	0	0	0
r . Enhanced NVG Analysis & Design	C/CP	To Be Selected	1700	0		7021	2Q	0	0	0	0	Continue
s . Aviation Night Vision Goggles	C/CP	To Be Selected	0	0		0		0	0	0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604710A - Night Vision Systems Engineering Development</b>	<b>PROJECT</b> <b>L70</b>
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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
t . Multifunction Eyesafe Laser Design Effort	C/CP	Various	0	1215		0		0	0	0	0	0
u . Uncooled Heavy TWS	C/CP	TBD	0	0		1500	2Q	0	0	0	0	Continue
Subtotal:			71101	12873		14559		0		0	0	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	Various	11888	677	1Q	886	1Q	0	0	0	0	Continue
Subtotal:			11888	677		886		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604710A - Night Vision Systems Engineering Development</b>	<b>PROJECT</b> <b>L70</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DT/IOT&E*	MIPR	ATEC	7724	1005	2Q	0		0	0	0	0	0
b . Other Test Support*	MIPR	Various	2882	301	2Q	500	2Q	0	0	0	0	Continue
Subtotal:			10606	1306		500		0		0	0	Continue

Remarks: \* Includes TWS, DVE, LLDR and other sensor test and evaluation activities

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management		PM,NV/RSTA	3655	388	1Q	434	1Q	0	0	0	0	Continue
b . SBIR/STTR			0	447		0		0	0	0	0	0
Subtotal:			3655	835		434		0		0	0	Continue

<b>Project Total Cost:</b>			97250	15691		16379		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604710A - Night Vision Systems Engineering Development</b>				PROJECT <b>L75</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L75 PROFILER	3050	4757	6158	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Profiler is an upgrade of the capabilities of the current AN/TMQ-41 Meteorological Measuring Set (MMS). Profiler will employ remote and local sensing of the atmosphere, mesoscale modeling and enhanced computing capabilities to provide target area and more timely meteorological data. By providing more accurate meteorological data messages, Profiler will enable supported cannon and rocket systems to decrease miss distances, which will increase predicted fire effectiveness. These enhancements and new capabilities will increase the lethality of field artillery systems such as Multiple Launch Rocket Systems, towed and self-propelled cannons. This Engineering and Manufacturing Development (EMD) effort will increase the accuracy of a wide range of deep fire weapons and munitions, and ultimately reduce total cost of ownership to the Army. Four EMD systems will be delivered and tested. Profiler will replace the legacy force MMS systems to transition to the objective force. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 2888 Initiated MMS Profiler (MMS-P) EMD development effort, including hardware for four prototype units for both technical tests and operational evaluation and conducted design reviews.
- 162 Conducted studies and simulations to support mesoscale model requirements and enhancements.

Total 3050

**FY 2001 Planned Program**

- 4472 Continue MMS-P EMD development effort.
- 81 Conduct ballistics and meteorology simulations to support accuracy requirements.
- 663 Prepare for developmental testing and operational testing.
- 141 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 5357

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604710A - Night Vision Systems Engineering Development**

**PROJECT**  
**L75**

**FY 2002 Planned Program**

- 4091 Continue MMS-P EMD development effort.
  - 1883 Conduct developmental testing and operational testing.
  - 184 Conduct studies to support enhancements to reduce O&S costs and improve artillery meteorological data usage.
- Total 6158

<b><u>B. Other Program Funding Summary</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>
6.4 RDTE, Night Vision Devices Engineering Development 0604710A DL70 *	16184	15690	16379	0	0	0	0	0	0	0
Profiler K27900 OPA2	0	0	0	0	0	0	0	0	0	0

\* DL70 of the same PE as Profiler is identified, since prior years' efforts were funded in that project line.

**C. Acquisition Strategy:** The MMS Profiler development and production Indefinite Delivery, Indefinite Quantity (IDIQ) contract is being awarded competitively. The EMD phase contract type is Cost Plus Incentive Fee (CPIF) and the production option will be Firm Fixed Price (FFP). The formal solicitation included requirements for oral presentations and cost as an independent variable (CAIV).

<b><u>D. Schedule Profile</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
MS I/II Decision	3Q			0	0	0	0	0
Award EMD Contract	4Q			0	0	0	0	0
System Design & Fabrication	4Q	1-4Q	1-2Q	0	0	0	0	0
Conduct Developmental Testing			2Q	0	0	0	0	0
Conduct Operational Test			3-4Q	0	0	0	0	0
MS III Decision				0	0	0	0	0
Award Production Contract				0	0	0	0	0
First Unit Equipped (FUE)				0	0	0	0	0



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604710A - Night Vision Systems Engineering Development</b>	PROJECT <b>L75</b>
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<u>D. Schedule Profile (continued)</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Initial Operational Capability (IOC)				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604710A - Night Vision Systems Engineering Development</b>	<b>PROJECT</b> <b>L75</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . EMD Contract	C/CPIF	ETG, Inc., Baltimore, MD	2090	3864	1Q	3100	1Q	0	0	0	0	0
b . Studies and Simulations	MIPR	ARL, NOAA	162	81	1Q	184	1Q	0	0	0	0	0
<b>Subtotal:</b>			2252	3945		3284		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	CECOM I2WD, Other	760	554	1Q	915	1Q	0	0	0	0	0
<b>Subtotal:</b>			760	554		915		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604710A - Night Vision Systems Engineering Development</b>	<b>PROJECT</b> <b>L75</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Planning and Preparation	MIPR	ATEC	0	62	1Q	100	1Q	0	0	0	0	0
b . DT/OT	MIPR	ATEC	0	0		1783	2Q	0	0	0	0	0
Subtotal:			0	62		1883		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management		PM, NV/RSTA	38	55		76		0	0	0	0	0
b . SBIR/STTR Program			0	141		0		0	0	0	0	0
Subtotal:			38	196		76		0		0	0	0

<b>Project Total Cost:</b>			3050	4757		6158		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604713A - Combat Feeding, Clothing, and Equipment**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	63085	88502	91002	0	0	0	0	0	0	0
548 MIL SUBSISTENCE SYS	1578	4703	1862	0	0	0	0	0	0	0
667 LAND WARRIOR	39441	59581	61755	0	0	0	0	0	0	0
668 SOLDIER ENHANCE PGM	13980	14174	14109	0	0	0	0	0	0	0
680 MOUNTED WARRIOR	188	0	0	0	0	0	0	0	0	0
C40 SOLDIER SUPPORT EQUIPMENT - ED	4475	5817	8716	0	0	0	0	0	0	0
L40 CLOTHING & EQUIPMENT	3423	4227	4560	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program supports Engineering and Manufacturing Development (EMD) and Non-Developmental Item (NDI) evaluation of unit/organizational equipment, weapons/munitions, clothing and individual equipment, fabric shelters, field service equipment, food and food service equipment to enhance soldier efficiency, effectiveness, lethality, sustainability and survivability in accordance with Army Transformation Campaign Plan (TCP) objectives. New food items and food service equipment will be developed to reduce food service logistics requirements for all four Services. The Soldier Support equipment program supports development of a new generation of field service support items to include: Airdrop Equipment (personnel and cargo), Field Hygiene Systems, Heaters, Shelters, and Base Camp Systems to shelter and sustain the soldiers in the field and improve quality of life. The Land Warrior program will produce the first fully integrated fighting system for dismounted combat soldiers. The Soldier Enhancement Program provides soldier items that can be procured in three years or less. This program line supports the Legacy-to-Objective transition paths of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604713A - Combat Feeding, Clothing, and Equipment**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	60600	86321	66189	0
Appropriated Value	60829	89321	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	-626	0	
b. SBIR / STTR	-1505	0	0	
c. Omnibus or Other Above Threshold Reductions	-467	0	0	
d. Below Threshold Reprogramming	3999	0	0	
e. Rescissions	0	0	0	
Adjustments to Budget Years Since FY2001 PB	229	-193	24813	
Current Budget Submit (FY 2002/2003 PB )	63085	88502	91002	0

FY01 funds increased by \$3.0M to build engineering development models and demonstrate microwave waste treatment systems for Army Bare Base camps such as Froce Provider.

FY03 funds increased by \$4.629 to Land Warrior as a higher Army Priority

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604713A - Combat Feeding, Clothing, and Equipment</b>					<b>PROJECT</b> <b>548</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
548 MIL SUBSISTENCE SYS	1578	4703	1862	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Project provides Engineering and Manufacturing Development (EMD) and Non-developmental Item (NDI) evaluation of combat feeding equipment to enhance soldier efficiency and survivability. New combat feeding equipment will be developed to reduce food service logistics requirements for all four services. Development of Joint Service Food/Food Service Equipment to improve individual combat effectiveness, reduce logistics burden, and reduce operation and support costs of subsistence support for service men and women. Develop multi-fuel, rapidly deployable field food service equipment to support combat, humanitarian missions and operations-other-than-war. Improve equipment to enhance safety in food service, utilize battlefield fuels and decrease fuel and water requirements. Project supports legacy through objective forces in accordance with the Transformation Campaign Plan objectives.

**FY 2000 Accomplishments**

- 330 Completed fabrication of prototype field kitchen components that improve efficiency over standard items.
- 205 Initiated Developmental and Operational Testing of the Advanced Food Sanitation Center to enhance capability to clean/sanitize combat feeding equipment and control grey water discharge.
- 220 Awarded contract and conducted baseline testing for the development of kit components to allow use of Modern Burner Unit in extreme cold weather, and to reduce noise levels.
- 251 Prepared design concept for food service equipment, procured system equipment and conducted initial testing for the highly mobile Air Force temporary Lightweight Kitchen that will improve mobility and provide rapid and efficient meal production.
- 207 Completed User Testing of Marine Corps Rapid Deployment Kitchen, demonstrated time/labor savings, energy efficiency, significant improvement in RAM over conventional field kitchens.
- 135 Designed improved Tray Ration Heater System with enhanced operational capabilities and reduced cost.
- 115 Conducted Joint requirements analysis and developed concept for improved efficiency Advanced Design Refrigerator for the Army and USAF.
- 115 Completed market investigation and initial testing of novel alternatives for individual mess kit sanitation to ensure safety of personnel.

Total 1578

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604713A - Combat Feeding, Clothing, and Equipment**

PROJECT

**548**

**FY 2001 Planned Program**

- 320 Integrate field kitchen equipment efficiency upgrades into a complete kitchen and conduct Developmental and Operational Testing.
- 131 Complete Developmental and Operational testing of Advanced Food Sanitation Center, conduct Milestone C and award production contract.
- 212 Complete fabrication and testing of Temporary Lightweight Kitchen and deliver Technical Data Package (TDP) and prototype to the Air Force.
- 235 Conduct noise level and cold weather evaluations of kitchen burner kit and transition to procurement.
- 175 Complete modifications and conduct in-house evaluations of the improved Tray Ration Heater System, demonstrate enhanced operational capability.
- 115 Perform in-house and user evaluations of improved sanitation methods for mess kits and provide findings to the AF.
- 350 Award development contract for design and fabrication of Advanced Design Refrigerator with enhanced transportability and improved thermal efficiency.
- 200 Assist Marine Corps in awarding production contract for the Marine Corps Rapid Deployment Kitchen.
- 2965 Adapt and modify WASTECH microwave technology to pilot-scale prototype components of a deployable, modular sanitary waste treatment system. Test and evaluate the pilot-scale prototype system components. NOTE: Funds are being reprogramed under PE 0604713A - Combat Feeding, CLothing, and Equipment; Project Code DC40 - Soldier Support Equipment.

Total 4703

**FY 2002 Planned Program**

- 640 Conduct Milestone B and award R&D contract for the Fabrication of prototype Battlefield Kitchen System (1 @ \$350K ea.) and initiate contractor testing. Support TRADOC Concept Experimentation program on the evaluation of the kitchen component for the Army Field Feeding System.
- 370 Complete fabrication of Advanced Design Refrigerator and conduct Developmental Testing.
- 65 Complete Technical Data Package for field kitchen efficiency upgrade and transition to procurement.
- 175 Complete user testing of upgraded tray ration heater system to demonstrate enhanced mobility, increased ration preparation capability and cost savings.
- 245 Initiate development of thermostatic control kit and safety enhancements for kitchen burner.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604713A - Combat Feeding, Clothing, and Equipment**

PROJECT  
**548**

**FY 2002 Planned Program (Continued)**

- 367 Initiate insertion of equipment technology upgrades for the Containerized Kitchen and conduct required Developmental Testing.
- Total 1862

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, 0603747.D610, Food Adv Dev	2349	3349	3738	0	0	0	0	0	0	0
OPA3, M65803, Kitchen, Containerized, Field	7032	6077	3702	0	0	0	0	0	0	0
OPA 3, M65802, Sanitation Center, Field Feeding	658	4323	2413	0	0	0	0	0	0	0
M65801, Refrigeration Equipment	927	1466	928	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Complete engineering and manufacturing development of food items and equipment for transition to procurement.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Conduct User Testing of Rapid Deployment Kitchen	3Q			0	0	0	0	0
Design concepts for improved Mess Kit Sanitation	3Q			0	0	0	0	0
Design and Evaluate US Air Force Temporary Lightweight Kitchen	2Q			0	0	0	0	0
Conduct Milestone B and award Developmental Contract for the Advanced Design Refrigerator		3Q		0	0	0	0	0
Conduct Developmental and Operational Testing on field kitchen equipment efficiency upgrades		3Q		0	0	0	0	0
Initiate testing of Air Force Temporary Lightweight Kitchen		2Q		0	0	0	0	0
Test concept for Mess Kit Sanitation		3Q		0	0	0	0	0
Complete design and fabrication of Advanced Design Refrigerator - 1200		2Q		0	0	0	0	0



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604713A - Combat Feeding, Clothing, and Equipment</b>	PROJECT <b>548</b>
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<u>D. Schedule Profile (continued)</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Conduct Technical Testing for the Battlefield Kitchen			4Q	0	0	0	0	0
Conduct Developmental Testing for the Advanced Design Refrigerator -1200			4Q	0	0	0	0	0
Conduct Milestone B and initiate Developmental and Operational Testing of the Battlefield Kitchen				0	0	0	0	0
Type Classify the Advanced Design Refrigerator - 1200 (Milestone C)				0	0	0	0	0
Award development contract for the fabrication of water treatment module for AFSC P3I effort.				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604713A - Combat Feeding, Clothing, and Equipment**

**PROJECT**  
**548**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. SSCOM	In-House	SSCOM	8347	2953		907		0	0	0	0	Continue
b. Various	Various	Various	1004	1171		160		0	0	0	0	Continue
<b>Subtotal:</b>			9351	4124		1067		0		0	0	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal:</b>			0	0		0		0		0	0	0

Remarks: Not Applicable

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604713A - Combat Feeding, Clothing, and Equipment**

**PROJECT**  
**548**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TECOM/OEC	MIPR	Various	2471	491		530		0	0	0	0	Continue
Subtotal:			2471	491		530		0		0	0	Continue
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Ofc Management	In-House	SSCOM	600	88		265		0	0	0	0	Continue
Subtotal:			600	88		265		0		0	0	Continue
Project Total Cost:			12422	4703		1862		0		0	0	Continue

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604713A - Combat Feeding, Clothing, and Equipment</b>					PROJECT <b>667</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
667 LAND WARRIOR	39441	59581	61755	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The project Land Warrior (LW) establishes the Infantry soldier as the Army's singularly unique weapons platform. It is a first generation integrated fighting system for soldiers that provides combat overmatch for the five types of Infantry (air assault, airborne, light, mechanized, and ranger), and Special Operations Forces (SOF) in the close, personal, and brutal fight. Land Warrior provides enhanced capabilities to the dismounted soldier in support of the Force XXI and Transformation Campaign Plan, and has been identified as one of the top seven systems on the DCSOPS FY02 Legislative Priorities List. LW development takes maximum advantage of components available from Commercial-Off-The-Shelf (COTS), as well as Government-Off-The-Shelf (GOTS) components and technologies. The LW program minimizes the use of LW-unique hardware and software and has a more open systems architecture. This architectural approach provides greater flexibility to incorporate technology upgrades as they become available, reduces intellectual and proprietary rights issues and reduces developmental and ownership costs. LW provides the foundation system upon which Mounted, Air, and future warrior integrated systems will be based, as well as support to the Marine Corps and other services. CSA has said that the Soldier is centric to Army Transformation; LW is critical to transformation of the Soldier.

**FY 2000 Accomplishments**

- 28433 Awarded developmental contract to complete system hardware and software integration and produced 55+ LW V.06 systems for safety testing and airborne certification.
- 3157 Conducted safety testing and airborne certification, contractor component testing, user fightability evaluations, and obtained safety releases. Conducted tactics training, operators/leaders training and maintenance training prior to Joint Contingency Force Advanced Warfighting Experiment (JCFAWE). Participated in JCFAWE to demonstrate operational suitability, soldier acceptance, and increased soldier effectiveness.
- 7851 Program management and systems engineering support from other Government agencies and overall program efforts. Conducted technical and program reviews, and provided resources to respond to ACAT II programmatic requirements. Support to NATO Land Group 3 and other partnered countries to ensure compatibility with potential multinational military operations.

Total 39441

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604713A - Combat Feeding, Clothing, and Equipment</b>	PROJECT <b>667</b>
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**FY 2001 Planned Program**

- 45347 Incorporate design modifications from JCFAWE to system design to improve system functionality and performance to meet threshold requirements of the ORD. Conduct critical design review and contractor acceptance testing for V1.0 to validate system functionality prior to test. Complete hardware and software integration for subsequent software drops. Fabricate 50 (+ spares) LW V1.0 prototypes for safety test, training and developmental testing (DT). Initiate fabrication of LW V1.0 prototype systems for initial operational test and evaluation 80 (+ spares). Provide contractor logistics support of hardware and software on test units.
- 2419 Complete technical test plan, user fightability assessments, and obtain safety releases. Conduct technical test readiness reviews. Update training package and manuals for developmental test (DT) and transition to electronic format. Develop interactive training scenarios and evaluate integrated training environment. Conduct training of key personnel prior to operational test.
- 11815 Program management and systems engineering support from other government agencies for overall program efforts. Conduct technical and program reviews, and increased program office resources to respond to Army Category (ACAT) II programmatic requirements and posture for anticipated ACAT I designation. Conduct LW demonstrations to higher headquarters and other countries to demonstrate system capability and functionality. Support to NATO Land Group 3 and other partnered countries to ensure compatibility with potential multinational military operations.

Total 59581

**FY 2002 Planned Program**

- 42239 Fabricate remaining 120 (+ spares) LW V1.0 prototypes that will be used only for operational testing. Conduct contractor acceptance testing and risk reduction activities to improve system functionality and integration prior to testing. Provide contractor logistics support of hardware and software on test units.
- 7534 Complete developmental testing (DT). Complete operational testing (OT) planning and conduct airborne certification, user fightability assessments, and obtain necessary safety releases. Update and transition training package and manuals to electronic format and complete training. Develop interactive training scenarios and evaluate integrated training environment. Conduct tactics training, operators/leaders training, and maintenance training prior to OT. Conduct OT readiness reviews. Initiate Initial Operational Test and Evaluation (IOTE).
- 11982 Program management and systems engineering support from other Government agencies for overall program efforts. Conduct technical and program reviews, Army System Acquisition Review Council (ASARC) reporting/briefings, to Army Category (ACAT) I or ACAT II programmatic requirements. Continue operation of PM Soldier System - Fort Monmouth, and PM Soldier LW Forward at Fort Bragg. Conduct LW demonstrations to higher headquarters and other countries to demonstrate system capability and functionality. Support to NATO Land Group 3 and other partnered countries to ensure compatibility with potential multinational military operations.

Total 61755

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604713A - Combat Feeding, Clothing, and Equipment**

PROJECT  
**667**

<u>B. Other Program Funding Summary</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>
RDTE, 0603001.DJ50, Force XXI Land Warrior	6127	6250	27510	0	0	0	0	0	0	0
OPA3, M80500, Land Warrior	0	0	0	0	0	0	0	0	0	0
OPA3, MS3610, Initial Spares-Land Warrior	0	0	0	0	0	0	0	0	0	0
RDTE, 0643747.669 Clothing and Individual Equipment	3252	3467	4830	0	0	0	0	0	0	0
RDTE, 0654713.DL40 Clothing and Individual Equipment	3423	4227	4560	0	0	0	0	0	0	0
RDTE, 0654713.680 Mounted Warrior	188	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The restructured LW Program takes maximum advantage of components available from other Government agencies as well as Commercial-Off-the-Shelf (COTS) components and technologies. The program minimizes the use of LW-unique hardware and software and is using an open systems architecture. This architectural approach will provide greater flexibility to incorporate technology upgrades as they become available, reduce intellectual and proprietary rights issues, and reduce development and support costs. The LW development effort will utilize Other Transactions as the procurement vehicle to increase the level of commercial company involvement. The LW system development will conform to standards identified in Interface Control Documents (ICD's), and System Performance Specifications, which will be controlled by the Government. The follow-on production effort will utilize standard FAR-based full/open competition (best value, price based approach) based on government provided system level performance specifications and system level ICD's. The LW total procurement objective is approximately 47,245 units. The LW Program supports the Chief of Staff of the Army's (CSA) vision of establishing lethal forces through the use of commercial technologies to lighten the force; increase soldier lethality, and making the force more survivable, more mobile, and more deployable.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

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**0604713A - Combat Feeding, Clothing, and Equipment**

**PROJECT**  
**667**

<b><u>D. Schedule Profile</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Award Developmental Contract	2Q	2Q		0	0	0	0	0
Conduct LW IPRs	2Q	1-4Q		0	0	0	0	0
Conduct LW Preliminary Design Review (PDR) and Critical Design Review (CDR)		2Q		0	0	0	0	0
Deliver prototypes for safety test	2Q	4Q		0	0	0	0	0
Conduct Safety Testing and obtain safety release	2Q	4Q		0	0	0	0	0
Conduct Joint Contingency Forces Advanced Warfighting Experiment (JCFAWE)	4Q			0	0	0	0	0
Deliver DT prototypes		4Q	1Q	0	0	0	0	0
Pre-Production Qualification Testing (PPQT) and Production Qualification Testing (PQT)			3Q	0	0	0	0	0
Deliver IOTE prototypes for training and safety release			3-4Q	0	0	0	0	0
Initial Operational Test and Evaluation (IOTE) Training and Test			4Q	0	0	0	0	0
Test-Fix			1-2Q	0	0	0	0	0
MS III Decision				0	0	0	0	0
Production Contract Award				0	0	0	0	0
Objective Development Test-Fix				0	0	0	0	0
First Unit Equipped (FUE)*				0	0	0	0	0
Initial Operational Capability (IOC)*				0	0	0	0	0

\* With current OPA funding.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604713A - Combat Feeding, Clothing, and Equipment**

**PROJECT**  
**667**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Computer Sciences Corporation (CSC)	Task Order	Eatontown, NJ	35533	24005	1-3Q	9451	1-3Q	0	0	0	0	0
b . Exponent	FFP	Menlo Park, CA	0	3650	1-2Q	5549	1-2Q	0	0	0	0	0
c . PEMSTAR	FFP	Rochester, MN	0	13481	1-3Q	20915	1-3Q	0	0	0	0	0
d . OMEGA Training Group	FFP	Columbus, GA	0	1684	1-3Q	2561	1-3Q	0	0	0	0	0
e . Wexford Group	Task Order	Vienna, VA	0	842	1-3Q	1201	1-3Q	0	0	0	0	0
f . Pacific Consultants	FFP	Mountain View, CA	0	1685	1-3Q	2562	1-4Q	0	0	0	0	0
g . Develop Obj Reqmts (Power, Wt, Sys Voice, etc.)	TBD		0	0		0		0	0	0	0	0
h . Raytheon Systems	CPAF	El Segundo, CA	122348	0		0		0	0	0	0	0
Subtotal:			157881	45347		42239		0		0	0	0

Remarks: Award dates covering multiple quarters reflect multiple awards.



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604713A - Combat Feeding, Clothing, and Equipment**

**PROJECT**  
**667**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CECOM	MIPR	Ft. Belvoir, VA/Ft Monmouth NJ	8274	3322		3260		0	0	0	0	0
b . TSM-Soldier	MIPR	Fort Benning, GA	1225	207		200		0	0	0	0	0
c . Modern Tech Inc.	Task Order	Springfield, VA	8675	1970		1710		0	0	0	0	0
d . West Point		West Point, NY	360	0		0		0	0	0	0	0
e . PM Soldier Electronics		Ft Belvoir, VA	10255	950		1101		0	0	0	0	0
f . SBBR/STTR, Rescission, and OSD Inflation			0	0		0		0	0	0	0	0
Subtotal:			28789	6449		6271		0		0	0	0

Remarks: Buys government and contract engineering and logistical support for overall program support.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604713A - Combat Feeding, Clothing, and Equipment**

**PROJECT**  
**667**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Ft Bragg	MIPR	Fort Bragg, NC	476	100		100		0	0	0	0	0
b . Testing Organizations	MIPR	Various	3948	595		6684		0	0	0	0	0
c . Various Organizations	MIPR	Ft. Benning, GA	5964	780		0		0	0	0	0	0
d . Test Equip/Support	Various		3749	600		500		0	0	0	0	0
e . Army Research Institute (ARI)	MIPR		0	344		250		0	0	0	0	0
f . ARL-HRED	MIPR		110	0		0		0	0	0	0	0
Subtotal:			14247	2419		7534		0		0	0	0

Remarks: Costs in FY99/00 are for test planning, evaluations, and test equipment only. Testing will be conducted in FY01.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604713A - Combat Feeding, Clothing, and Equipment**

**PROJECT**  
**667**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Soldier	In-House	Fort Belvoir, VA	7778	840		1022		0	0	0	0	0
b . Wexford Group	Task Order	Vienna, VA	1080	838	1Q	900	1Q	0	0	0	0	0
c . CYIOS, Inc.	Task Order	Washington, DC	825	400	1Q	400	1Q	0	0	0	0	0
d . ACS	Task Order	Arlington, VA	60	196	1-2Q	200	1-2Q	0	0	0	0	0
e . BRTRC	Task Order	Fairfax, VA	165	504	1-2Q	500	1-2Q	0	0	0	0	0
f . SBCCOM	MIPR	Natick, MA/APG, MD	1160	960		1000		0	0	0	0	0
g . SY-Tech	Task Order	Sherman Oaks, CA	694	1137	1Q	1200	1Q	0	0	0	0	0
h . Dynetics	Task Order	Huntsville, AL	140	100	1Q	100	1Q	0	0	0	0	0
i . Oracle	Task Order	San Diego, CA	0	391	1-2Q	389	1-2Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604713A - Combat Feeding, Clothing, and Equipment</b>	PROJECT <b>667</b>
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IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			11902	5366		5711		0		0	0	0

Remarks: Award dates covering multiple quarters reflect multiple awards.

Project Total Cost:			212819	59581		61755		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604713A - Combat Feeding, Clothing, and Equipment</b>					PROJECT <b>668</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
668 SOLDIER ENHANCE PGM	13980	14174	14109	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Soldier Enhancement Program (SEP) supports Force XXI and the Transformation Campaign Plan by increasing the lethality, command and control, sustainability, mobility, and survivability of the Soldier. This is primarily accomplished through accelerated acquisition and integration efforts of lighter, more lethal weapons and improved "Soldier items" including lighter, more comfortable load-bearing equipment, field gear, survivability items, communications equipment, and navigational aids. For SEP purposes, Soldiers are managed in three categories: dismounted Soldiers, combat crews (air and ground), and other Soldiers. Projects generally are completed in three years or less.

**FY 2000 Accomplishments**

- 1712 Completed evaluation/type classified/transitioned to production: Flashlight Mount, 12 Gauge Non Lethal Point and Crowd Control, Canteen Water Insert Purifier, and Lightweight Voice Amplifier.
- 6692 Continued evaluation/procured prototypes, and/or test: 40mm Cannister Round, 12 Gauge Breaching Round, Long Range Tactical Sniper Cartridge, Long Range Sniper Rifle, Lightweight Fragmentation Hand Grenade, M203 Enhanced Fire Control, Sniper Accessory Kit, Backup Iron Sight for Modular Weapon System, Petroleum Oil Lubricants (POL) Handlers Glove System, Camouflage Uniform System for Soldiers, Multiple Utility Digging System, Tactical Search Mirror System, Concealable Stab Protective Body Armor, Protective Glove System, Riot Control Agent Neutralizer, Combined Camouflage Face Paint (Phase I), Collapsible Grappling Hook, Improved Combat Shelter, Survival Egress Air (SEA) MK2 Device (formerly Helicopter Aircrew Breathing Device), Micro-Rappel System, and Small Unit Multi-Purpose Trailer.
- 2786 Initiated market surveys and/or evaluations: Joint Service Combat Shotgun, M240B Combat Ammunition Pack (CAP), 12 Gauge Penetrating/Irritating Cartridge, Smart Mine Probe, Family of Batons/Night Sticks, Parachutist's Drop Bag, Tactical Assault Ladder Systems, Improved Cold Weather Mask, Boot Gaiters, and Infrared Laser Pattern Generation Pointer.
- 2505 In-house engineering support services, computer services, conduct technical and program reviews.
- 10 Program Terminations: Smart Mine Probe - Failed testing.
- 275 Program Redirection: Rifle Launched Non-Lethal Munitions - Configuration did not satisfy user requirement. Cartridge was redesigned resulting in redirection to 5.56 Non-Lethal Muzzle Launched Ordnance.

Total 13980

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604713A - Combat Feeding, Clothing, and Equipment</b>	PROJECT <b>668</b>
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**FY 2001 Planned Program**

- 2445 Complete evaluation/type classify/transition to production: 40mm Cannister Round, 12 Gauge Breaching Round, Sniper Accessory Kit, Backup Iron Sight for Modular Weapon System, Micro Rappel System, POL Handlers Glove System, Boot Gaiters, Camouflage Uniform System for Soldiers, Multiple Utility Digging System, Family of Batons/Night Sticks, Protective Glove System, Survival Egress Air (SEA) MK2 Device, Improved Cold Weather Mask, and Collapsible Grappling Hook.
- 4434 Continue evaluation/procure prototypes and/or test: Joint Service Shotgun, M240B Combat Ammunition Pack, 5.56 Non-Lethal Muzzle Launched Ordnance, Parachutist Drop Bag, 12 Gauge Penetrating/Irritating Cartridge, Infrared Laser Pattern Generation Pointer, Combined Camouflage Face Paint (Phase I), Tactical Assault Ladder System, Riot Control Agent Neutralizer, Tactical Search Mirrors, Concealable Stab Protective Body Armor, and Improved Combat Shelter.
- 3269 Initiate market surveys and/or evaluations: Close Combat Mission Capability Kit, M84 Reloadable Fuze, Integrated Laser White Light Pointer, Law Enforcement/Special Reaction Team (LE/SRT) Civil Disturbance Equipment Bag, Double Hearing Protection and Communication Capability, Neck Protector, Permethrin Treatment of Nomex and Nuclear Biological Chemical (NBC)Compatible Drinking System.
- 2500 In-house engineering support services, computer services, conduct technical and program reviews.
- 202 Program Terminations: Lightweight Fragmentation Hand Grenade and Small Unit Multi-Purpose Trailer - Not capable of meeting operational requirements. Double Hearing Protection and Communication Capability - requirement satisfied by using the Modular Integrated Communications Helmet.
- 1324 Program Redirections: Long Range Sniper Rifle - User requirements reassessed - require semi-automatic versus bolt action rifle - redirected to XM107 Semi-Automatic Anti-Materiel Rifle. Long Range Sniper Cartridge - User requires calibre .50 cartridge for semi-automatic rifle versus bolt action - redirected to XM107 Sniper Ammo. M203 Enhanced Fire Control - Army changes to M203 MEFC Operational Requirements Document (ORD) resulted in redirection to M203 Grenade Launched Rail System

Total 14174

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604713A - Combat Feeding, Clothing, and Equipment**

PROJECT

**668**

## FY 2002 Planned Program

- 3745 Complete evaluation/type classify/transition to production: 5.56 Non-Lethal Muzzle Launched Ordnance, Joint Service Combat Shotgun, M203 Grenade Launched Rail System, M240B Combat Ammunition Pack, Infrared Laser Pattern Generation Pointer, 12 Gauge Penetrating/Irritating Cartridge, Neck Protector, Military Police Equipment Carrying Bag, Parachutists Drop Bag, Tactical Assault Ladder System, Combined Camouflage Face Paint(Phase I), Improved Combat Shelter, Neck Protector, Riot Control Agent Neutralizer, Concealable Stab Protective Body Armor, XM107 Semi-Automatic Anti-Materiel Rifle, Tactical Search Mirrors, and LE/SRT Civil Disturbance Equipment Bag.
- 5032 Continue evaluation/procure prototypes and/or test: Close Combat Mission Capability Kit, M84 Reloadable Fuze, XM107 Sniper Ammunition, Combined Camouflage Face Paint (Phase II), Integrated Laser White Light Pointer, Permethrin Treatment of Nomex, and NBC Compatible Drinking System.
- 2832 Initiate market surveys and/or evaluations: M9 Pistol Rail, Collapsible Buttstock for M249 Machine Gun, Hand Thrown Stingball Grenade, Body Restraint, Ghillie Suit, Aircrew Immersion Coveralls, Aircrew Survival/Egress Knife, Tactical Thigh Holster, and Handheld Irritant Sprayer.
- 2500 In-house engineering support services, computer services, conduct technical and program reviews.

Total 14109

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604713A - Combat Feeding, Clothing, and Equipment**

PROJECT  
**668**

<b>B. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA3, MA6800, Soldier Enhancement	3571	3947	3148	0	0	0	0	0	0	0
OPA2, BA5300, Soldier Enhancement	3645	19164	5136	0	0	0	0	0	0	0
WTCV, GC0076, Small Arms (SEP)	5963	3473	303	0	0	0	0	0	0	0
WTCV, GZ1290, Squad Automatic Wpn (Mods)	4139	9865	4450	0	0	0	0	0	0	0
WTCV, GZ2800, M16 Rifle Mods	4331	9504	2100	0	0	0	0	0	0	0
WTCV, GB3007, M4 Carbine Mods	9393	2481	0	0	0	0	0	0	0	0
WTCV, G01500, Sniper Rifle	145	3056	2149	0	0	0	0	0	0	0
WTCV, GC0925, Mods	2186	779	1261	0	0	0	0	0	0	0
PAA, F47500, 7.62mm AP	1308	0	2412	0	0	0	0	0	0	0
PAA, F47600, 5.56mm AP	1826	1325	3551	0	0	0	0	0	0	0
PAA, F00900, 40mm Canister	0	0	0	0	0	0	0	0	0	0
PAA, E84900, XM84 Stun Grenade	1739	2336	2398	0	0	0	0	0	0	0
PAA, E86400, 12 Gauge Non Lethal	0	936	0	0	0	0	0	0	0	0
PAA, E86500, Cartridge, 12 Ga Crowd Dispersal	921	0	0	0	0	0	0	0	0	0
PAA, E91100, XM95 Cartridge, Non Lethal Crowd	0	6311	6533	0	0	0	0	0	0	0
PAA, E89000, 40mm Non Lethal	1526	1870	1973	0	0	0	0	0	0	0
OMA, 121017, Central Funding & Fielding	75148	61706	79515	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The Soldier Enhancement Program (SEP) focuses on developmental initiatives that lend themselves to accelerated acquisition and fielding in the near term (within three years). New SEP candidates are reviewed and approved annually. SEP items are procured from multiple appropriations, i.e., OMA, OPA, WTCV, and PAA.



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
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PROJECT  
**668**

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
SEP Requirements Reviews	2Q	2Q	2Q	0	0	0	0	0
SEP Projects Reviews	4Q	4Q	4Q	0	0	0	0	0

NOTE: Numerous individual projects are ongoing under the Soldier Enhancement Program (SEP) and each project has its own milestone schedule

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604713A - Combat Feeding, Clothing, and Equipment**

**PROJECT**  
**668**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Various	MIPR	SBCCOM, MA	2067	1857		2375		0	0	0	0	0
b. Integrated Laser White Light Pointer	MIPR	PM-NVRSTA, VA	0	140		860		0	0	0	0	0
c. Various	MIPR	PM-SA, NJ	5340	4858		6301		0	0	0	0	0
d. Canteen Water Insert	MIPR	PM-PAWS MI	220	0		0		0	0	0	0	0
e. Various	MIPR	SBCCOM, MD	974	888		360		0	0	0	0	0
f. Lightweight Low Profile Voice Amplifier	MIPR	PM-NBC, MD	200	0		0		0	0	0	0	0
g. Smart Mine Probe	MIPR	PM-MCD, VA	150	0		0		0	0	0	0	0
h. Pattern Generation	MIPR	CECOM, NJ	79	30		75		0	0	0	0	0
i. Parachurist Drop Bag	MIPR	PM, Soldier Support, MA	25	521		100		0	0	0	0	0
Subtotal:			9055	8294		10071		0		0	0	0

Remarks: Candidates for the Soldier Enhancement Program are received, reviewed, and approved annually. Contractual efforts primarily are focused on procuring prototypes for testing.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604713A - Combat Feeding, Clothing, and Equipment**

**PROJECT**  
**668**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	MIPR	TSM-SDR, GA	200	275		275		0	0	0	0	0
b . Various	Contracts	Various	2020	3758		1846		0	0	0	0	0
c . DCD Support - Military Police	MIPR	GSA/FEDLEARN	94	110		120		0	0	0	0	0
d . Logistics Support	MIPR	Army Logistics Support Activity	0	78		100		0	0	0	0	0
e . DCD Support - Armor			0	119		0		0	0	0	0	0
Subtotal:			2314	4340		2341		0		0	0	0

Remarks: Support costs vary annually depending on the type of items we are evaluating. Research Development and Engineering Centers support to evaluate items also varies annually depending on the number and types of items.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604713A - Combat Feeding, Clothing, and Equipment</b>	<b>PROJECT</b> <b>668</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	MIPR	OFIG, MA	25	25		25		0	0	0	0	0
b . Various	MIPR	OPTEC/ATEC,	1281	90		100		0	0	0	0	0
<b>Subtotal:</b>			1306	115		125		0		0	0	0

Remarks: Testing costs vary annually by item(s) and are primarily funded by customers using the program dollars we send to them.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House		PM-Soldier Equipment, VA	1305	1425		1572		0	0	0	0	0
b . SBIB/STTR/Inflation			0	0		0		0	0	0	0	0
<b>Subtotal:</b>			1305	1425		1572		0		0	0	0

Remarks: Costs vary annually depending on number and type of items being evaluated.

<b>Project Total Cost:</b>			13980	14174		14109		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604713A - Combat Feeding, Clothing, and Equipment</b>					PROJECT <b>C40</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C40 SOLDIER SUPPORT EQUIPMENT - ED	4475	5817	8716	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Develop and field soft shelters, showers, latrines, heaters, mortuary affairs, organizational equipment and other combat service support equipment to improve unit sustainability and combat effectiveness. Develop and Type Classify cargo and personnel parachutes, airdrop containers and other aerial delivery equipment to improve safety and efficiency of airborne operations. Develop a series of Rigid Wall Shelters (RWS) with added capabilities and enhanced survivability. Project supports development of critical enablers that enhance deployment, reduce CS/CSS footprint, reduce logistics/support costs, and increase readiness in accordance with the Army Transformation Campaign Plan objectives.

**FY 2000 Accomplishments**

- 2188 Terminated the existing R&D contract for the Advanced Reserve Parachute System (ARPS). Performed a Jump-off for new R&D ARPS Contract. Effort transfers to project DC40 from project DC09 in FY2001.
  - 125 Completed RDT&E and released LRIP solicitation for the Space Heater Convective.
  - 187 Procured and evaluated candidates for Chaplain's Logistic Support Package.
  - 500 Acquired and began testing the Modular General Purpose Tent System P3I Items (fabric flooring, frame system, liners).
  - 450 Completed Field Evaluations for Cargo Bed Covers Type I (HMMWV) and Type II (1.5 ton cargo trailer).
  - 575 Procured additional Cargo Bed Covers Type I (HMMWV) and Type II (1.5 ton trailer) for testing.
  - 450 Evaluated technologies for the Lightweight Maintenance Enclosure P3I and Temper Improvements Effort.
- Total 4475

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604713A - Combat Feeding, Clothing, and Equipment**

PROJECT

**C40**

**FY 2001 Planned Program**

- 500 Conduct Design Validation of the Advanced Tactical Parachute System/Advanced Reserve Parachute System (ATPS/ARPS).
  - 85 Procure for ATPS/ARPS Design Validation test items, (20 @ \$4.25K ea).
  - 1725 Conduct Developmental Testing for the ATPS/ARPS.
  - 108 Procure Developmental Test items for ATPS/ARPS (27 Phase I test items @ \$4,000 ea).
  - 272 Conduct Technical and Operational Testing and User Field Evaluation for Chaplaincy Logistical Support Package. Obtain Milestone III Type Classification Standard.
  - 450 Conduct Milestone B, Procure Long Lead Items, Fabricate Prototypes (2 @ \$125K ea.)and conduct DT, OT and Log Demo for the Containerized Chapel.
  - 500 Complete Milestone B on the Space Heater Small. Conduct Milestone B for the Space Heater Large. Initiate fabrication of prototype of 60K BTU Space Heater Convective. Complete Milestone C, conduct technical testing on Space Heater Small Production Demonstration Models, and award LRIP.
  - 825 Complete testing and field evaluations of Modular General Purpose Tent System P3I prototypes.
  - 450 Investigate and evaluate airbeam technology and composite materials for potential employment in the Lightweight Maintenance Enclosure P3I.
  - 580 Milestone B program initiation for 500 ft. Low Velocity Airdrop System (LVADS). Perform Design Verification Testing on the 500 ft. LVADS.
  - 322 Procure test items (5 @ \$65.4K)for the 500 ft. LVADS Design Verification Testing.
- Total 5817

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604713A - Combat Feeding, Clothing, and Equipment**

PROJECT

**C40**

**FY 2002 Planned Program**

- 2970 Complete Developmental Testing and conduct Milestone II for the ATPS/ARPS.
  - 108 Procure test items for the Developmental Testing of Phase II ATPS/ARPS (27 ea @ \$4,000).
  - 1825 Plan for and conduct Developmental Testing on the 500 ft. LVADS.
  - 890 Procure test items (14 @ \$63K) for the Developmental Testing of 500 ft. LVADS.
  - 500 Obtain Milestone C Type Classification - Standard for the Containerized Chapel.
  - 600 Complete Full-Rate Production Decision for Space Heater Small. Conduct Technical Testing, award contract, and conduct testing on Space Heater Large PDM. Conduct Milestone B for 60K BTU Space Heater Convective.
  - 1273 Procure Test items (liners; Frame/pole interface; and modular deck system)for the Modular General Purpose Tent System P3I (10 complete systems @ \$25K ea.). Initiate system Testing and Evaluation
  - 550 Evaluate the Lightweight Maintenance Enclosure P3I airbeam prototypes.
- Total 8716

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604713A - Combat Feeding, Clothing, and Equipment**

**PROJECT**  
**C40**

<b>B. Other Program Funding Summary</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>To Compl</b>	<b>Total Cost</b>
RDTE, 0603747.DC09, Unit/Org Equipment	5415	6641	8914	0	0	0	0	0	0	0
MA7805, Universal Static Line	976	3934	0	0	0	0	0	0	0	0
MA8061, Lightweight Maintenance Enclosure	3690	5548	3636	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Accelerate product development and testing to transition to Production.

<b>D. Schedule Profile</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Complete Milestone C for the Space Heater Small		2Q		0	0	0	0	0
Award LRIP contract for Space Heater Convective		2Q		0	0	0	0	0
Conduct Technical/User Eval Test for Chaplaincy Logistical Support Package		2Q		0	0	0	0	0
Complete Milestone III for the Chaplaincy Logistical Support Package		4Q		0	0	0	0	0
Conduct Developmental Testing of the Advanced Reserve Parachute System/Advanced Tactical Parachute System		4Q		0	0	0	0	0
Conduct Field Evaluation for the Lightweight Maintenance Enclosure P3I and Temper Improvements			4Q	0	0	0	0	0
Conduct MS B for the Space Heater Large		3Q		0	0	0	0	0
Fabricate Containerized Chapel Prototypes		2Q		0	0	0	0	0
Conduct Technical/Operational Tests for Containerized Chapel.		4Q		0	0	0	0	0
Complete Milestone C, and Type Classify-Standard the Containerized Chapel			2Q	0	0	0	0	0
Complete Full Rate Production Decision for the Space Heater Small			2Q	0	0	0	0	0
Complete DT on ATPS/ARPS			2Q	0	0	0	0	0
Type Classify the Space Heater Large				0	0	0	0	0



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604713A - Combat Feeding, Clothing, and Equipment</b>	PROJECT <b>C40</b>
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<b><u>D. Schedule Profile (continued)</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Conduct OT on ATPS/ARPS				0	0	0	0	0
Conduct OT on 500 Ft. LVADS				0	0	0	0	0
Complete Milestone B and award RDT&E effort for Ammunition Solar Cover				0	0	0	0	0
Complete Milestone B and award RDT&E effort for Ballistic Protection System				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604713A - Combat Feeding, Clothing, and Equipment**

**PROJECT**  
**C40**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. SSCOM	In-House	NRDEC	2517	654		1797		0	0	0	0	0
b. Contracts	Various	Various	9515	1392		2950		0	0	0	0	Continue
c. Inflation Withhold			0	0		0		0	0	0	0	0
Subtotal:			12032	2046		4747		0		0	0	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604713A - Combat Feeding, Clothing, and Equipment</b>	<b>PROJECT</b> <b>C40</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TECOM/OEC	MIPR	Various	7368	3496		3519		0	0	0	0	Continue
<b>Subtotal:</b>			7368	3496		3519		0		0	0	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Office	In-House	PM-Soldier Support/SSCOM	1614	275		450		0	0	0	0	Continue
<b>Subtotal:</b>			1614	275		450		0		0	0	Continue

<b>Project Total Cost:</b>			21014	5817		8716		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604713A - Combat Feeding, Clothing, and Equipment</b>				PROJECT <b>L40</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L40 CLOTHING & EQUIPMENT	3423	4227	4560	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project develops state-of-the-art individual clothing and equipment to improve the survivability, mobility, and sustainment affecting the quality of life of the individual soldier, and in support of Force XXI and the Transformation Campaign Plan. Funding shown does not reflect funding from OSD PE 0604384BP to support the Chemical/Biological Defense program in accordance with Public Law 103-60 Title XVII.

**FY 2000 Accomplishments**

- 1659 MOLLE - Modular Lightweight Loadcarrying Equipment, corrected minor deficiencies from previous tests and incorporate Land Warrior compatibility.
  - 257 CBA - Concealable Body Armor, prepared and released request for proposal.
  - 152 BASIC P3I - Body Armor Set, Individual Countermine, typed classified and received approval for low rate initial production (LRIP).
  - 228 Updated fabrics, style changes, and consolidate dress clothing for Joint Services.
  - 201 JSLIST-OG - Joint Service Lightweight Integrated Suit Technology - Over Garment, awarded contract for the development of an Army CD-ROM for institutional Military Occupational Specialty (MOS) training.
  - 91 MH - Modular Helmet, achieved concept approval.
  - 50 MG - Modular Glove, achieved concept approval.
  - 785 In-house engineering support services, computer services, conduct technical and program reviews.
- Total 3423

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604713A - Combat Feeding, Clothing, and Equipment**

**PROJECT**  
**L40**

**FY 2001 Planned Program**

- 275 ITAP-BGA - Improved Toxicological Agent Protective Boots, Glove, and Apron, achieve Milestone B, award engineering manufacturing development contract, procure prototypes, and initiate testing.
  - 434 Update fabrics, style changes, and consolidate dress clothing for Joint Services.
  - 1747 MOLLE - Modular Lightweight Loadbearing Equipment, complete developmental test/operational test, achieve Milestone C, and initiate production.
  - 275 ABDU-P3I - Aircrew Battle Dress Uniform Product Improvement, achieve Milestone B, award developmental contract, procure prototype items, and initiate developmental testing.
  - 136 CBA - Concealable Body Armor, award developmental contract, and initiate developmental/operational testing.
  - 585 IADU - Improved Army Dress Uniform, achieve concept approval and Milestone B.
  - 69 MG - Modular Glove, achieve Milestone B and release request for proposal.
  - 706 In-house engineering support services, computer services, and conduct technical and program reviews.
- Total 4227

**FY 2002 Planned Program**

- 610 ABDU-P3I - Aircrew Battle Dress Uniform Product Improvement, complete developmental testing, commence field testing/user evaluation.
  - 570 ITAP-BGA - Improved Toxicological Agent Protective Boots, Glove, and Apron, complete testing, achieve Milestone C, and type classify standard.
  - 140 CBA - Concealable Body Armor, complete testing, achieve Milestone C, and initiate production.
  - 355 Update fabrics, style changes, and consolidate dress clothing for Joint Services
  - 980 MG - Modular Glove, award contract, procure test items, and commence user evaluation.
  - 1418 IADU - Improved Army Dress Uniform, procure test items and commence user evaluation and survey for the .
  - 487 In-house engineering support services, computer services, and conduct technical and program reviews.
- Total 4560

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604713A - Combat Feeding, Clothing, and Equipment</b>	PROJECT <b>L40</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, 0603747.D669, Clothing & Individual Eq.	3252	3459	4830	0	0	0	0	0	0	0
OMA, 121017, Central Funding and Fielding	88467	79590	90013	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Soldier modernization will be accomplished via acquisition programs ranging from NDI/modified NDI through integrated programs. Acquisition strategies will vary from: 1) quick fixes in 36 months or less from concept to Type Classification (TC) such as Soldier Enhancement Programs (SEP), 2) modular improvements which require limited RDT&E and will be completed in more than 36 months from concept to Type Classification.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Life Cycle Systems Review	2&4Q	2&4Q	2&4Q	0	0	0	0	0

\*Denotes a completed milestone

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604713A - Combat Feeding, Clothing, and Equipment**

**PROJECT**  
**L40**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Various	MIPRS	SBCCOM, Natick MA	786	2048		2129		0	0	0	0	0
b. Various	Contracts	Various	1308	946		1174		0	0	0	0	0
<b>Subtotal:</b>			2094	2994		3303		0		0	0	0

Remarks: Product development costs vary annually depending on the number and types of programs being evaluated.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal:</b>			0	0		0		0		0	0	0

Remarks: Support Costs vary annually depending on number of and types of programs being evaluated.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604713A - Combat Feeding, Clothing, and Equipment**

**PROJECT**  
**L40**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	MIPRS	OPTEC	469	472		720		0	0	0	0	0
b . Various	MIPRS	OFIG, Natick, MA	75	55		50		0	0	0	0	0
<b>Subtotal:</b>			544	527		770		0		0	0	0

Remarks: Testing costs vary annually by item.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	In-House	PM-S, Ft Belvoir, VA	785	706		487		0	0	0	0	0
<b>Subtotal:</b>			785	706		487		0		0	0	0

Remarks: Management Services costs vary annually depending on the number and types of programs being evaluated.

<b>Project Total Cost:</b>			3423	4227		4560		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604715A - Non system Training Devices Engineering Dev**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	78446	75522	26319	0	0	0	0	0	0	0
241 NSTD COMBINED ARMS	51545	53139	25314	0	0	0	0	0	0	0
24A WARSIM, 3 YR FUNDS, P.L. 106-246	5000	0	0	0	0	0	0	0	0	0
396 WARSIM INTEL MODULE (WIM)	12318	19717	0	0	0	0	0	0	0	0
573 STRICOM/NAWCTSD SUPPORT	9583	2666	1005	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

Program Element funds engineering development of Non-System Training Devices to support force-on-force training at the Combat Training Centers (CTC), general military training and training on more than one item/system, as compared with system devices which are developed in support of a specific item/weapon system. Training devices and training simulations help to modernize the forces while providing force multipliers that improve combat effectiveness by providing realistic training. Training devices maximize the transfer of knowledge, skills, and experience from the training situation to a combat situation. Force-on-force training at the National Training Center (NTC), Ft. Irwin, CA; Joint Readiness Training Center (JRTC), Ft. Polk, LA, and Combat Maneuver Training Center (CMTC), Hohenfels, Germany; and battle staff training in Battle Command Training Program (BCTP) provide increased combat readiness through realistic collective training in low, mid, and high intensity scenarios. Project 24A, Warfighters' Simulation (WARSIM), was provided as a congressional increase to support the development of the Army's premier wargame simulation for training leaders and battlestuffs at Brigade, Division, Corps and echelons above Corps. Project 241, Non-System Training Devices-Combined Arms, develops simulation training devices for Army-wide use, including the CTCs. Project 396, WARSIM Intelligence Module, is the intelligence component of Warfighter Simulation (WARSIM)/Joint Simulations (JSIMS) land component. In FY00, Project 573, STRICOM Non-System Training Devices Support, funds in-house costs of project support by US Army Simulation, Training and Instrumentation Command (STRICOM) and support from Naval Air Warfare Center Training Systems Division (NAWCTSD). In FY01 Project 573 funds STRICOM infrastructure for command operations only and FY02-07 only supports salary dollars.

The FY02 241, Non-System Training Devices program line will develop prototype training devices to support Combined Arms (Infantry, Armor, Aviation, Air Defense, Artillery, Engineer, Chemical, and Support troops) training and multi-system training within the Army. The FY02 573, program line will provide for minimum infrastructure support for command operations.

These systems support the Interim, Legacy, Objective, and Legacy to Objective transition paths of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604715A - Non system Training Devices Engineering Dev**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	72529	73295	50628	0
Appropriated Value	73034	73295	0	
Adjustments to Appropriated Value	0	2900	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-1705	0	0	
c. Omnibus or Other Above Threshold Reprogramming	7360	0	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	-243	-673	0	
Adjustments to Budget Years Since FY2001 PB	0	0	-24309	
Current Budget Submit (FY 2002/2003 PB )	78446	75522	26319	0

FY00 reflects increase from Congressional Supplemental in support of WARSIM and a year end OMNIBUS reprogramming action for the CSTAR program. FY02/03 reflects delta between plus up to CTCs and WARSIM/WIM/IEWTPT move to new PE 604742, Projects D361/D362, and reflects \$5.144M transfer from RDTE to OMA for CMTC RDMS.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>			<b>PE NUMBER AND TITLE</b> <b>0604715A - Non system Training Devices</b> <b>Engineering Dev</b>					<b>PROJECT</b> <b>241</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
241 NSTD COMBINED ARMS	51545	53139	25314	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project is used to develop prototype training devices to support Combined Arms (Infantry, Armor, Aviation, Air Defense, Artillery, Engineer, Chemical, and Support troops) training and multi-system training within the Army, to include the Reserve Components. Corps Battle Simulation (CBS) is the Army's standard command and staff training simulation at the corps/division level. WARSIM will be the next generation battle command simulation system to replace CBS, Tactical Simulation (TACSIM) and Combat Service Support Training Simulation System (CSSTSS). WARSIM will utilize current technology to efficiently provide training support and linkage to other simulations and simulators. WARSIM will comply with Simulation Interoperability Standards Organization (SISO) standards and open architecture to meet the Army's training requirements, to include High Level Architecture (HLA) compliance. WARSIM is also the Land component of the Joint Simulation System (JSIMS), which will support DoD Joint training requirements. The Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) provides realistic Battle Command training by creating a realistic intelligence information environment that will train Military Intelligence (MI) soldier analysts to support battle commander and staff operational decisions. Starting in FY02 the WARSIM and IEWTPT programs move to a new program element (604742). The Combat Synthetic Training Assessment Range (CSTAR) trains commanders on combat tactics using a virtual reality battlefield training device with simulated reconnaissance and intelligence capabilities. The Aerial Weapons Scoring System (AWSS) provides for one prototype system to enhance system performance up to the ORD requirements and enable the AWSS to interface with other training systems. AWSS is an integrated group of computer controlled sensors that detect and score rocket and cannon/machine gun engagements during live-fire training and qualification tables. The One Tactical Engagement Simulation System (One TESS) provides for an advanced, joint, collective, combined arms, live training system using tactical weapon system supported by a family of Training Aids, Devices, Simulations and Simulators (TADSS). The National Training Center Objective Instrumentation System (NTC OIS) provides a completely digital based system for full tactical system connectivity and High Level Architecture (HLA) compatibility. The Army Battle Command System Integration (ABCSI) provides an interface for the current instrumentation systems to support digitized rotations at the maneuver CTCs - ( NTC, CMTC, and JRTC). The NTC Range Data Management System (NTC RDMS) Frequency Conversion develops the architecture to resolve the frequency usage conflict at NTC. In FY02 the New Generation Army Targetry Systems (NGATS) program continues to provide the development and planning to address emerging weapon system targetry requirements. The FY02 program will support establishment of Common Training Instrumentation Architecture (CTIA) and CTIA-compliant reusable components to implement Objective Instrumentation Systems (OISs) for the Maneuver CTCs, Homestations, Military Operations Urbanized Terrain (MOUT), and Digital Multi-Purpose Range Complexes (DMPRCs). The FY02 CTIA efforts of the Live Training Transformation (LTT) projects will include the NTC OIS and CMTC RDMS projects. In FY 02, this project funds development of limited enhancements to Corps Battle Simulation to ensure training relevance until the system is replaced with WARSIM. In addition, the FY02 program will provide funding for emerging concepts and studies for training material needs and Army initiatives. NOTE: FY02 WARSIM program transfers to PE 604742, Project D362.

These systems support the Legacy, Interim and Objective transition path of the Transformation Campaign Plan.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604715A - Non system Training Devices  
Engineering Dev**

PROJECT

**241**

## FY 2000 Accomplishments

- 319 Initiated development of IEWTPT.
- 34901 Completed Build 2 and initiated development of Build 3 software development for WARSIM. Build 3 software will round out the battlefield operating systems functionality to provide replacement of Corps Battle Simulation (CBS) and Tactical Simulation (TACSIM) for WARSIM Version 1.0
- 2925 Procured Commercial Off The Shelf (COTS) hardware/software to incrementally build the WARSIM Corps/Division and Brigade/Battalion suite prototypes being installed at Forts Leavenworth and Hood. The suites provide a means for early user interface and evaluation of WARSIM-developed software. These prototype suites will be used for the hardware evaluation and will ultimately meet three of the Army acquisition objective system quantities after materiel release.
- 2414 Continued development of limited enhancements to CBS.
- 7248 Continued development of devices, simulators and simulations to support training at the Combat Training Centers, to include domain analysis of the CMTC and JRTC Instrumentation Systems and initiate development of the Common Training Instrumentation Architecture (CTIA) domain model NTC OIS, develop the architecture for NTC RDMS Frequency Conversion, and continue engineering development of Army Tactical Command and Control Systems (ATCCS) modules required for ABCS integration at NTC, CMTC and JRTC.
- 1909 Initiated the development tasks needed to upgrade the AWSS to full Operational Requirements Document (ORD) compliance.
- 1829 Completed development of CSTAR capability for Fort Hood, TX.

Total 51545

## FY 2001 Planned Program

- 4534 Continue development of IEWTPT and begin integration with WARSIM/WIM.
- 10084 Continue development of devices, simulators and simulations to support training at the Combat Training Centers (CTCs), to include establishment of CTIA version 0.1 baseline for Live Training Transformation (LTT) project line to include NTC OIS, develop the Advanced Interactive Target System common instrumentation architecture for JRTC Military Operations in Urban Terrain (MOUT) II and complete engineering development of Army Tactical Command and Control Systems (ATCCS) modules required for ABCS integration at NTC, CMTC and JRTC.
- 2687 Continue development of limited enhancements to CBS.
- 19681 Continue increment Build 3 software development of WARSIM for Version 1.0. Also develops prototype command post interface modules which will allow interface between WARSIM and the training unit's organizational C4I equipment for realistic training.
- 1483 Begin development and integration of full logistics support functionality/CSSTSS for WARSIM.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604715A - Non system Training Devices  
Engineering Dev**

PROJECT

**241**

## FY 2001 Planned Program (Continued)

- 5266 Procure additional COTS hardware/software to incrementally build the WARSIM Corps/Division and Brigade/Battalion suite prototypes being installed at Forts Leavenworth and Hood. These suites provide a means for early user interface and evaluation of WARSIM-developed software. These suites will ultimately meet three of the Army acquisition objective system quantities after materiel release.
- 3670 Continue the development tasks needed to upgrade the AWSS to full Operational Requirements Document (ORD) compliance.
- 4392 Initiate NGATS program development and planning to address emerging weapon system targetry requirements to include: Digital Multi-Purpose Range Complex (DMPRC) acquisition contract effort; develop and test prototype Lookback/Shootback Targetry that senses opposing force and initiates appropriate response.
- 1342 Small Business Innovative Research (SBIR)/Small Business Technology Transfer Program (STTR).

Total 53139

## FY 2002 Planned Program

- 18513 Continue development of devices, simulators and simulations to support training at the Combat Training Centers (CTCs), to include establishment of CTIA version 1.0 baseline for Live Training Transformation (LTT) project line to include NTC OIS, initiate development of renovation to the Range Data Measuring System.
- 4881 Continue development of limited enhancements to CBS
- 915 Funding for emerging engineering manufacturing development programs and studies for training material needs and Army initiatives.
- 1005 Continue NGATS program development and planning to address emerging weapon system targetry requirements to include: Digital Multi-Purpose Range Complex (DMPRC) acquisition contract effort; develop and test prototype Lookback/Shootback Targetry that senses opposing force and initiates appropriate response.

Total 25314

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604715A - Non system Training Devices Engineering Dev</b>	PROJECT <b>241</b>
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<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA3, Appropriation NA0100 Training Devices, Non-System	77274	115866	74481	0	0	0	0	0	0	0
OPA3, Appropriation MA6601 CTC Support	20622	98138	10307	0	0	0	0	0	0	0
OPA3, Appropriation NA0174 Fire Support Combined Arms Tactical Trainer	16416	1443	0	0	0	0	0	0	0	0
RDTE, PE 0604742 Project D361	0	0	4200	0	0	0	0	0	0	0
RDTE, PE 0604742 Project D362	0	0	61964	0	0	0	0	0	0	0

In FY 2002, IEWTPT transfers to PE 0604742 Proj D361. In FY 2002, WARSIM/WIM transfers to PE 0604742 Proj D362.

**C. Acquisition Strategy:**Competitive development efforts based on performance specifications.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Award WARSIM System Development Contract	1Q	1Q		0	0	0	0	0
WARSIM Software Spiral Build 2 Completion	4Q			0	0	0	0	0
WARSIM Software Spiral Build 3 Completion			2Q	0	0	0	0	0
CBS Contract Award	1Q	1Q	1Q	0	0	0	0	0
JRTC MOUT Phase II Targetry Critical Design Review (CDR)	2Q			0	0	0	0	0
NTC OIS Concept Exploration	1Q			0	0	0	0	0
NTC-OIS MS II		4Q		0	0	0	0	0
NTC OIS MS III				0	0	0	0	0
NTC RDMS Frequency Conv Contract Award	1Q			0	0	0	0	0
ABCS Integration CDR		2Q		0	0	0	0	0
ABCS Integration Completion			4Q	0	0	0	0	0
IEWTPT CONTRACT AWARD		1Q	1Q	0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604715A - Non system Training Devices Engineering Dev</b>	PROJECT <b>241</b>
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<b><u>D. Schedule Profile (continued)</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
NGATS Contract Award		2Q	2Q	0	0	0	0	0
AWSS Contract Award	3Q	2Q		0	0	0	0	0
CSTAR Work Order Contract Award	2Q			0	0	0	0	0
CTIA Development Contract Award		2Q		0	0	0	0	0
One TESS Contract Award				0	0	0	0	0

FY00 Milestones Completed.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604715A - Non system Training Devices Engineering Dev**

**PROJECT**  
**241**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . WARSIM EMD	C/CPAF	LMIS, Orlando, FL	119688	21208	1Q	0		0	0	0	0	Continue
b . WARSIM Functional Description of Battlefield	C/CPFF	Veda Inc, Alexandria, VA	3675	0		0		0	0	0	0	0
c . CBS Development	C/FFP	JPL, Cal Tech, Pasadena, CA	23303	2353	1Q	4431	1Q	0	0	0	0	0
d . IEWTPT	C/CPIF/FFP	MOTOROLA INC, SCOTTSDALE, AZ	0	3600	1Q	0		0	0	0	0	Continue
e . JRTC MOUT Phase II*	SS/FFP	Northern NET, Colorado Springs, CO	2708	462	2Q	0		0	0	0	0	0
f . ABCS Integration	C/CPFF	ARL, Univ Texas, TX	7545	3913	1Q	0		0	0	0	0	Continue
g . NTC RDMS Frequency Conversion	C/CPFF	LMIS, Orlando, FL	659	0		0		0	0	0	0	0
h . NGATS	T & M	AMCOM, Rock Island, IL	0	3392	2Q	725	1Q	0	0	0	0	Continue
i . AWSS	FFP	Navy, Indianhead, MD	1484	2970	2Q	0		0	0	0	0	0
j . CSTAR	T & M	Motorola, Scottsdale, AZ	1842	0		0		0	0	0	0	Continue
k . NTC-OIS	C/FFP	Lockheed Martin Inc. Orlando, FL	6493	0		0		0	0	0	0	Continue



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604715A - Non system Training Devices Engineering Dev</b>	<b>PROJECT</b> <b>241</b>
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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
l. CTIA	C/FFP	TBD	0	2584	2Q	16121	2Q	0	0	0	0	Continue
m. One TESS	TBD	TBD	0	0		0		0	0	0	0	Continue
Subtotal:			167397	40482		21277		0		0	0	Continue

Remarks: WARSIM System Development Contractor was competitively selected based on downselect of three competing contractors: TRW, LORAL, and Hughes. WARSIM FDB is not required in FY01-02 because the functional documentation of CSSTSS, which is to be developed for Version 1.1, already exists. IEWTPT: Full and open EMD contract to develop prototype. \*JRTC MOUT Phase II - Advanced Target System and test facility.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. WARSIM Engr & Tech	C/CPFF	MITRE FFRDC	2107	197		0		0	0	0	0	0
b. WARSIM Engr Spt	Various	Multiple	4566	1281		0		0	0	0	0	Continue
c. WARSIM Data Mgt & Repository	C/CPIF	Veda Inc., Alexandria, VA	1877	303		0		0	0	0	0	Continue
d. WARSIM Software Engineering	C/CPFF	AST, Orlando, FL	5323	500		0		0	0	0	0	Continue
e. CBS Engineering	Various	Multiple	71	121	1Q	231	1Q	0	0	0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604715A - Non system Training Devices Engineering Dev**

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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
f. NTC-OIS	C/BAA	ARL, Univ of Texas, Austin	6493	350	1Q	350	1Q	0	0	0	0	Continue
g. ABCS Integration	C/FFP	Madison Res Corp, Orlando, FL	3712	200	1Q	0		0	0	0	0	0
h. NTC RDMS Freq Conv	MIPR	Various	47	0		0		0	0	0	0	0
i. Support Costs for D241	Multiple	Various	0	1275	1Q	1583	1Q	0	0	0	0	Continue
j. IEWTPT Engr Support	Multiple	Various	132	504	1Q	0		0	0	0	0	Continue
k. NGATS	MIPR	Various	0	1000	1Q	280	1Q	0	0	0	0	Continue
l. CSTAR	Multiple	Various	94	0		0		0	0	0	0	0
m. AWSS	Multiple	Various	500	700	2Q	0		0	0	0	0	0
n. CTIA	MIPR	Various	0	1300	1Q	459	1Q	0	0	0	0	0
o. Concept Exploration	Multiple	Various	0	0		915	1-3Q	0	0	0	0	Continue
Subtotal:			24922	7731		3818		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604715A - Non system Training Devices Engineering Dev**

**PROJECT**  
**241**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . WARSIM Verification, Validation/Accreditation	Multiple	Various	1451	1705	1Q	0		0	0	0	0	Continue
b . WARSIM Dev Test	Multiple	Various	838	0	1Q	0		0	0	0	0	Continue
c . IEWTPT Development Testing Planning & Spt	Multiple	Various	35	75	1Q	0		0	0	0	0	Continue
d . CBS Confederation Test Support	Multiple	Various	0	53	1-2Q	54	1-2Q	0	0	0	0	0
Subtotal:			2324	1833		54		0		0	0	Continue
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . WARSIM IPT Spt	MIPR	NSC, Ft Leavenworth, KS	1275	324	1Q	0		0	0	0	0	0
b . WARSIM Cost Analysis	C/CPFF	TASC, Orlando, FL	366	110	2Q	0		0	0	0	0	Continue
c . WARSIM Program Mgt	Various	Multiple	4911	2144	1-2Q	0		0	0	0	0	Continue
d . IEWTPT Program Mgt	Various	Multiple	371	355	1Q	0		0	0	0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604715A - Non system Training Devices Engineering Dev</b>	PROJECT <b>241</b>
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IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
e. CBS Program Management	Various	Multiple	0	160	1Q	165	1Q	0	0	0	0	0
f. CSTAR Program Management	Various	Multiple	213	0		0		0	0	0	0	0
Subtotal:			7136	3093		165		0		0	0	Continue

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Project Total Cost:			201779	53139		25314		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604715A - Non system Training Devices</b> <b>Engineering Dev</b>					<b>PROJECT</b> <b>573</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
573 STRICOM/NAWCTSD SUPPORT	9583	2666	1005	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** In support of Non-System Training Devices (NSTD), this project funds the US Army Simulation, Training and Instrumentation Command (STRICOM) personnel salaries and support costs in FY00. FY01 D573 project funds STRICOM infrastructure to include labor and travel for command operations only. In FYs 02-07 project funds labor in support of command operations.

**FY 2000 Accomplishments**

- 8157 Funded STRICOM R & D Infrastructure for command operations and support costs for Non-System Training Device programs.
  - 1426 Funded NAWCTSD support costs for Non-System Training Device programs.
- Total 9583

**FY 2001 Planned Program**

- 2617 Funds STRICOM Infrastructure to include labor and travel in support of command operations.
  - 49 Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR).
- Total 2666

**FY 2002 Planned Program**

- 1005 STRICOM labor in support of command operations.
- Total 1005

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604715A - Non system Training Devices  
Engineering Dev**

PROJECT

**573**

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

Not Applicable.

**C. Acquisition Strategy:**Not Applicable.

**D. Schedule Profile:** Not applicable for this item.

Acquisition Milestones not applicable on this project

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604716A - Terrain Information Engineering Development**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	5308	6027	8840	0	0	0	0	0	0	0
579 FIELD ARMY MAP SYS ED	5308	5544	8840	0	0	0	0	0	0	0
598 HIGH VOLUME MAP PRODUCTION EQUIP (HVMPE)	0	483	0	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

A. Mission Description and Budget Item Justification: The Project Director for Combat Terrain Information Systems (PD CTIS) is responsible for developing, procuring, and fielding of topographic support systems for the Army. CTIS systems provide automated terrain analysis, terrain data management and graphics reproduction in support of Intelligence Preparation of the Battlefield (IPB), Command and Control, Terrain Visualization, weapons and sensor systems, and other topographic information customers. CTIS consists of the Digital Topographic Support System - Light (DTSS-L), DTSS-Heavy (DTSS-H), DTSS-Deployable (DTSS-D), DTSS-Base (DTSS-B) and the High Volume Map Production (HVMP) equipment. A Pre-Planned Product Improvement (P3I) program will be conducted to address technology insertion, technology refreshment of Commercial Off-the-Shelf equipment and modernization initiatives for the Topographic Support System (TSS). Experimentation results from the Div XXI Army Warfighter Experiment (AWE) identified technological enhancements necessary to support the First Digital Division (FDD) The DTSS-H, DTSS-L, DTSS-D, and DTSS-B fall under the Field Army Mapping System - Engineering Development (D579) project. In FY01 the HVMP falls under the D598 project. In FY02 and beyond, HVMP falls under project D579. CTIS systems support the Legacy to Objective transition path of the Transformation Campaign Plan (CTP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604716A - Terrain Information Engineering Development**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	5308	6082	7138	0
Appropriated Value	5348	6082	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	0	0	0	
c. Omnibus or Other Above Threshold Reductions	-22	0	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	-18	-55	0	
Adjustments to Budget Years Since FY2001 PB	0		1702	
Current Budget Submit (FY 2002/2003 PB )	5308	6027	8840	0

FY02/03 - Additional funding supports DTSS Pre-Planned Product Improvement Program



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604716A - Terrain Information Engineering</b>					<b>PROJECT</b> <b>579</b>	
				<b>Development</b>						
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
579      FIELD ARMY MAP SYS ED	5308	5544	8840	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This Project funds development of the DTSS-L (HMMWV), DTSS-H (5-ton), DTSS-D (COTS, Transportable), DTSS-B (COTS, Garrison) and HVMP (FY02/03). The current terrain analysis, topographic and reproduction support provided by Army Engineer Terrain Teams is a slow, labor intensive process that does not meet the needs of the Force XXI battlefield on which the commander must have the ability to rapidly obtain terrain information and topographic products. The DTSS will provide digital maps and updates to commanders and weapons platforms in support of mission planning (e.g., imagery exploitation, Cover and Concealment, other IPB), rehearsal (e.g., 3D fly through, simulations) and execution (e.g., Common Tactical Picture, route planning). The DTSS automates terrain analysis and visualization, data base development/update/management/distribution, and graphics reproduction. The Combat Terrain Information Systems (CTIS) Modernization Plan emphasizes the development of a combined, integrated, tactically deployable, fully autonomous terrain analysis and graphics reproduction capability. These capabilities are being provided in 5-ton (DTSS-H) and HMMWV (DTSS-L) configurations. Fielding of the DTSS-H was completed in Dec 99. The DTSS-H systems will eventually be replaced by DTSS-Ls as part of a HQDA approved technology refreshment program. The DTSS-L is highly mobile and capable of supporting a full range of military operations, as well as peacetime stability and support operations. Both the DTSS-L and DTSS-H have been Type Classified-Standard. The DTSS-D provides a Commercial Off the Shelf (COTS) configuration that is capable of operating all of the terrain analysis software. The DTSS-D consists of transportable workstations and peripherals that can be set up to augment the tactical configurations. The DTSS-D does not include tactically deployable shelters and vehicles or tactical communications. The DTSS-D has been Type Classified-Standard. The DTSS-B was procured in response to a USAEUR initiative to develop the capability to generate terrain information over sparsely mapped areas to support training, mission rehearsal and contingency operations. The DTSS-B is designed to augment NIMA capabilities at the EAC level by providing quick response, special purpose mapping, terrain analysis and data base generation. The DTSS-B currently includes a Top Secret - SCI component that is capable of handling national technical means information in a secure environment. The DTSS-B has been Type Classified-Standard. The HVMP will provide a tactical capability to rapidly reproduce large volumes of topographic materiel. HVMP will be capable of reproducing information from a variety of digital and hardcopy sources via direct digital interfaces. CTIS systems will be deployed from Brigade through EAC. Products developed as part of the CTIS RDT&E program (e.g., improved Army Battle Command Systems (ABCS) interoperability, migration to Joint Technical Architecture - Army (JTA-A) and Defense Information Infrastructure Common Operating Environment (DII COE), improved data base management and distribution, automated feature extraction, improved tactical decision aid functionality, rapid terrain visualization, improved graphics reproduction) will be incorporated into all of the DTSS hardware and software architectures. Additionally, the TSS is outdated and must be modernized to keep pace with Army digitization. The modernization initiatives associated with the TSS include updating the Operations, Distribution and Photomechanical Sections with computer workstations, copiers and printers. The Survey section will be downsized to a HMMWV configuration and the Drafting section will be updated to include digital cartographic equipment.

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)****June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604716A - Terrain Information Engineering  
Development**

PROJECT

**579****FY 2000 Accomplishments**

- 4858 Continued P3I development for DTSS - map server architecture, Windows NT migration, COTS upgrades, architecture improvements, TSS upgrades
  
  - 150 ABCS Systems Engineering & Integration (SE&I)
  - 300 Conducted architecture analysis for FY01 COTS cyclic upgrade of DTSS-B
- Total 5308

**FY 2001 Planned Program**

- 4865 Continue P3I development for DTSS - map server architecture, rapid terrain visualization, automated feature extraction, embedded training, exploitation of new data sources, TSS upgrades
  - 179 ABCS Systems Engineering & Integration (SE&I)
  - 500 Conduct evaluation of system upgrade alternatives for follow-on DTSS-L production contract
- Total 5544

**FY 2002 Planned Program**

- 7240 Continue P3I development for DTSS - map server/data dissemination improvements, improved data base design (Geodata model), Tactical Decision Aid (TDA) enhancements (integrated weather and mobility), automated feature extraction
  - 1600 Continue Engineering and Manufacturing Development (EMD) of HVMP (initiated in FY01 under project D598)(Project D598 was combined with D579 in FY02 and designated D579)
- Total 8840

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604716A - Terrain Information Engineering Development</b>	PROJECT <b>579</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA - KA2550 - DTSS	24395	20121	20124	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The Acquisition Strategy for the DTSS - Light EMD phase is to utilize Army standard equipment and the Common Hardware/Software (CHS) computer workstations in conjunction with non-development item (NDI) components to develop an integrated baseline hardware configuration. The previous Combat Terrain Information Systems (CTIS) System Engineering and Integration (SE&I) contractor (Lockheed Martin Corp) executed the EMD phase, performing system integration, and provided units for formal test and evaluation. Milestone III for the DTSS-L was successfully completed in Jan 98. Production of the DTSS-L commenced in February 1999. Previously existing DTSS units have been upgraded to a 5-ton ISO 20-foot shelter configuration (DTSS-H). Funding to support technology refreshment of the DTSS-H (DTSS-H will be replaced by DTSS-L in FY02/03 timeframe) and DTSS-L has been programmed on a 5-yr. cycle. Acquisition of the DTSS-D and DTSS-B was completed in FY 1995 and FY 1996, respectively. Based upon CINC, TRADOC and PEO C3S User Evaluation approvals, the DTSS-D was Type Classified - Standard and added to the gaining unit's Table of Organization and Equipment. Funding to support a 5-yr. technology refreshment program for the DTSS-D and DTSS-B commenced in FY 2000 and FY 2001, respectively. The DTSS-B has also been Type Classified-Standard. The acquisition of the DTSS-D and DTSS-B relied upon existing contracts and commercial-off-the-shelf to the fullest extent possible. The Project Office will continue with this strategy for all technology refreshment programs. The Acquisition Strategy for the HVMP is to utilize COTS and NDI components integrated with Army standard hardware (e.g., trucks, shelters, power equipment) to develop an integrated baseline. The pre-planned product improvement program (P3I) will be executed with the current SE&I contractor (Litton/TASC, Inc.). The contracting strategy for the DTSS-Light program was to execute the EMD phase through the previous SE&I contractor, Lockheed Martin Corporation. A Competitive Cost Plus Fixed Fee (CPFF) contract was awarded for both the previous and existing CTIS SE&I contracts. A competitively awarded, Firm Fixed Price (FFP) contract was awarded to Sechan Electronics, Inc. for the Full Rate Production of the DTSS-Light. Production of the DTSS-H was accomplished through FFP production contracts with Lockheed Martin Corporation and SFA Inc. The contracting strategy for the HVMP is to execute the EMD phase through the current SE&I contractor. A competitively awarded FFP contract is anticipated for the Full Rate Production of the HVMP. The computer workstations for CTIS programs are being procured through the project manager for CHS.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Award DTSS-L Production Contract/Options	1Q	2Q	2Q	0	0	0	0	0
DTSS-L Production	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Complete Fielding of DTSS-H	1Q			0	0	0	0	0
Field DTSS Build 6.2 Software	4Q			0	0	0	0	0
Continue DTSS P3I Program	1-4Q	1-4Q	1-4Q	0	0	0	0	0
DTSS-L FUE	3Q			0	0	0	0	0
Field DTSS-L	3Q	1-4Q	1-4Q	0	0	0	0	0
Technology Refreshment and Fielding of DTSS-D	3-4Q	1-3Q		0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604716A - Terrain Information Engineering Development</b>	PROJECT <b>579</b>
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<b>D. Schedule Profile (continued)</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Field DTSS Build 7.0 Software		3Q		0	0	0	0	0
DTSS-L IOC		3Q		0	0	0	0	0
Technology Refreshment and Fielding of DTSS-B		3-4Q	1Q	0	0	0	0	0
Continue EMD for HVMP (initiated in FY01)			1-3Q	0	0	0	0	0
Milestone III for HVMP				0	0	0	0	0
Production of HVMP				0	0	0	0	0
Field DTSS Build 8.0 Software			2Q	0	0	0	0	0
Field DTSS Build X.X Software				0	0	0	0	0
Technology Refreshment of DTSS-L				0	0	0	0	0
Conduct Technology Refreshment of Institutional Training Classroom				0	0	0	0	0
Technology Refreshment and Fielding of DTSS-D				0	0	0	0	0
Technology Refreshment and Fielding of DTSS-B				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604716A - Terrain Information Engineering**  
**Development**

**PROJECT**  
**579**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Primary Hardware Development	C/CPFF C/CPFF	Loral Corp, OH Lockheed Martin, PA	23280	0		0		0	0	0	0	0
b . Primary Hardware Development	C/CPFF	TASC, Reston, VA	850	535	1Q	1910	1Q	0	0	0	0	Continue
c . ABCS SE&I	TBD	PEO C3S, Ft. Monmouth, NJ	150	179	1Q	0		0	0	0	0	0
Subtotal:			24280	714		1910		0		0	0	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Software Development	C/CPFF	Loral Corp, OH Lockheed Martin, PA	34919	0		0		0	0	0	0	0
b . Software Development	C/CPFF	TASC, Reston, VA	5005	3602	1Q	5345	1Q	0	0	0	0	Continue
Subtotal:			39924	3602		5345		0		0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604716A - Terrain Information Engineering Development</b>	<b>PROJECT</b> <b>579</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Acceptance Testing	MIPR	TECOM	705	0		50	2Q	0	0	0	0	Continue
<b>Subtotal:</b>			705	0		50		0		0	0	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Contractor Eng Support	MIPR	MITRE, McLean, VA	4817	200	1Q	200	1Q	0	0	0	0	Continue
b . Government Eng Support	MIPR	CECOM, et.al.	16068	200	1Q	460	1Q	0	0	0	0	Continue
c . Program Mgmt Support*	Requisition	Various	2530	150	1Q	175	1Q	0	0	0	0	Continue
d . Program Mgmt Personnel	MIPR	TEC, Ft. Belvoir, VA	10402	678	1Q	700	1Q	0	0	0	0	Continue
<b>Subtotal:</b>			33817	1228		1535		0		0	0	Continue

Remarks: \*This category primarily covers Office Automation

<b>Project Total Cost:</b>			98726	5544		8840		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604726A - INTEGRATED METEOROLOGICAL SUPPORT SYSTEM</b>				PROJECT <b>D85</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
D85 IMETS (TIARA)	2301	1754	1911	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element, Integrated Meteorological System (IMETS), funds the development of evolving upgrades to the fielded system. It is essential to provide the battlefield commander at all echelons with accurate, high resolution, near real time weather data in order to conduct intelligence preparation of the battlefield (IPB). The IMETS is a mobile tactical automated weather data receiving, processing, and dissemination system designed to provide timely weather and environmental effects, forecasts, observations, and decision aid support to the Army. The IMETS is an Army-furnished system, which is operated by Air Force weather personnel and maintained within Army support channels. IMETS provides weather information overlays for the Common Tactical Picture, meteorological (met) messages and other tailored products. IMETS provides all Army Battle Command (ABC) Systems mission planning and situation awareness with direct client access to the IMETS 4-D (position and time) meteorological database and to the database of weather impacts on friendly and threat systems. IMETS consists of three basic configurations: 1) command post (CP) configuration for fixed facilities at echelon above corps (EAC) level where the IMETS is permanently integrated into the local area network, so a tactical IMETS is not required; 2) vehicle-mounted configuration for tactical operations where the supported echelon moves frequently; and c) light configuration for task-organized elements of a supported echelon, integrated into a small task force, where lightweight, easily deployed core weather functions can be performed without its own vehicle to shelter the system. These configurations enable support for the full range of military operations from large Major Regional Conflicts to small task forces supporting Military Operations Other Than War. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 391 Integrated IMETS applications to ABCS 6.0 foundation software, including weather overlays, weather overlay provider, Joint Mapping Tool Kit map services; and delivered to CTSF for implementation in First Digitized Division. Participated in demonstrations and AWE exercises such as the Division Capstone Exercise and JCF-AWE. Began conversion of IMETS Weather Effects Workstation applications to a dismounted laptop version (UNIX and PC/NT). Provide weather symbol information/warnings on the Common Tactical Picture (CTP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604726A - INTEGRATED METEOROLOGICAL  
SUPPORT SYSTEM**

PROJECT

**D85**

## FY 2000 Accomplishments (Continued)

- 550 Extended the IMETS weather forecast and decision aid capability from 24 to 72 hr at 15 km resolution. Produced a fast analysis version of the Battlescale Forecast Model (BFM) to produce short range (3 hr) forecasts over small user-defined Areas of Interest. Started work on the BFM forecast output time resolution to one hour. Began development of a common Atmospheric Sounding Program (ASP) to consistently post-process both BFM and MM5 data into weather hazards and features. Extended the IMETS Gridded Meteorological Database (GMDB) to incorporate multiple numerical weather prediction model data (MM5, BFM and 1 deg NOGAPS), including their different data grid definitions and geographic coordinate projections. Developed an initial version of the GMDB that can be hosted on the DTSS terrain data server, and developed special subsets of meteorological data and products that will reside on the Joint Common Data Base (JCDB).
- 250 Interfaced the first release of tri-service Target Acquisition Weather Software - Army (TAWS-A) to the GMDB and IMETS. Developed a JAVA client version of IWEDA and evaluate as a prototype for platform independent IMETS applications. Improved the Vis5D visualization to support the new GMDB data sets. Developed meteograms and other new contour displays. Developed IMETS products and parameters to support Aviation Mission Planning and data visualization from the GMDB met data. Developed initial meteorological satellite remote sensing products for IMETS using the Air Force Small Tactical Terminal or other sources of multi-band met satellite imagery, and special sounder data; and configured to IMETS satellite data registration, calibration and display.
- 210 Purchased six IMETS Light test articles at \$35K each for development, integration and test of weather applications being ported to the IMETS Light laptop.
- 150 Continued to develop IMETS interoperability with other BFA systems, including MCS, ASAS, AFATDS, CSSCS and AMDWS.
- 550 Continued to evaluate, configure and integrate tech base prototype capabilities into operational IMETS.
- 200 Continued to integrate ABCS digitization products and supported test and security evaluation at the CTSF.

Total 2301

## FY 2001 Planned Program

- 246 Integrate IMETS applications to ABCS 7.0 foundation software. Continue the conversion of emerging weather applications to the various IMETS platforms, such as IMETS data ingest, weather forecast, Integrated Weather Effects Decision Aids (IWEDA), graphical user interface, and 5D data visualizations. Objective is to have all available applications running on IMETS Light, a dismounted laptop configuration. Certify DII/COE level 5 compliance for the laptop configuration. Continued to develop and integrate TAWS-A decision aids. Take IMETS Light through government acceptance testing and begin developmental testing.



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604726A - INTEGRATED METEOROLOGICAL  
SUPPORT SYSTEM**

PROJECT

**D85**

**FY 2001 Planned Program (Continued)**

- 526 Extend the IMETS nested BFM and MM5 forecasts to 120 hours. Extend the IMETS Gridded Meteorological Database (GMDB) to incorporate latest METOC standards for common environmental data across services. Complete development of a common Atmospheric Sounding Program (ASP) to consistently post-process both BFM and MM5 data into weather hazards and features. Continue to develop a GMDB that can be hosted on the DTSS terrain data server for distributing IMETS gridded meteorological data and weather impacts database information to ABCS clients at lower echelons where there is no full IMETS capability. Continue to develop special subsets of meteorological data and products that will reside on the Joint Common Data Base (JCDB), to include hosting the GMDB on the JCDB.
- 150 Continue to develop IMETS interoperability with other BFA systems, including MCS, ASAS, AFATDS, CSSCS and AMDWS.
- 382 Continue to evaluate, configure and integrate tech base prototype capabilities into operational IMETS.
- 200 Continue test and evaluation support for ABCS digitization products.
- 250 Implement a capability for IMETS to participate with both live and synthetic weather scenarios in live, virtual and constructive simulation exercises leading to First Digitized Corps. Develop a capability to ingest climatological and synthetic weather scenarios into IMETS for play in exercises. Interface to Air Force Combat Climatology Center and NCAR historical weather databases. Integrate to M&S through a C4I to HLA interface to allow the IMETS data to be used to support simulations and existing M&S weather servers.

Total 1754

**FY 2002 Planned Program**

- 219 Integrate IMETS applications to ABCS 7.0 foundation software. Continue to convert emerging weather effects applications to the various IMETS platforms. Refine IMETS data ingest, weather forecast, weather impact applications, graphical user interface, and 5-D data visualizations to execute on a light configuration. Implement ABCS client version of target acquisition weather software to display recognition and detection ranges of E-O sensors over the Common Tactical Picture on any ABCS system.
- 230 Improve the Weather Feature application, based on user feedback and configuration management change requests, on the Common Tactical Picture. Continue enhancements to TAWS-A. Develop an improved nowcast capability that can ingest and fuse non-conventional battlefield observations such as UAV and mobile met sensors to provide weather situation awareness updates within a threshold update time of 30 minutes (objective update in 10 minutes). Implement optimization ingest of artillery-met observations into IMETS forecasts.
- 300 Initiate a sensitivity capability in IWEDA to forecast the timing of the changes expected in IWEDA weather impact status for each component system. Implement automated mission inputs into IWEDA from ABCS digital OP-ORD information archived in the JCDB or other databases.
- 315 Continue upgrading IMETS interoperability with other BFA systems in compliance with updates from DII COE.
- 435 Continue test and evaluation support for ABCS. Conduct a Combined DT/OT on the IMETS Light in February 2002. Conduct final security and JITC testing on IMETS Light. Obtain a Milestone III IPR decision to procure and field IMETS Light in 3Q 02.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604726A - INTEGRATED METEOROLOGICAL  
 SUPPORT SYSTEM**

PROJECT  
**D85**

**FY 2002 Planned Program (Continued)**

- 412 Improve the ability for joint sharing of common meteorological forecasts, weather hazards/warnings and weather impact decision aids. Develop new IMETS products to supply to DTSS including support to heavy precipitation and flood potential warnings. Develop new prototype model for weather effects on illumination to include cloud and low-visibility effects on flares and nighttime light pollution from cities. Implement model to forecast optical turbulence and its effects on target acquisition and weapons systems.

Total 1911

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	2318	1771	1903	0
Appropriated Value	2318	1771	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0	0
d. Below Threshold Reprogramming	0	0	8	0
e. Rescissions	-17	-17	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	0	0
Current Budget Submit (FY 2002/2003 PB )	2301	1754	1911	0

FY02 was increased by \$8K; dollars realigned due to DA alignment of priorities.  
 FY03 was increased by \$13K; dollars realigned due to DA alignment of priorities.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604726A - INTEGRATED METEOROLOGICAL  
SUPPORT SYSTEM**

PROJECT  
**D85**

<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA 2 - SSN: BW0021-IMETS	5445	6954	2521	0	0	0	0	0	0	0

**D. Acquisition Strategy:** The IMETS development program integrates efforts from the Air Force, Army, and OSD's DII COE. It is consistent with the development of the C4I Joint Technical Architecture-Army. The IMETS Non Developmental Item acquisition strategy has proven successful in the fielding of twenty systems since program initiation in FY 1992. This development strategy will be continued to include software modules as they mature and become part of the COE library. A common map server update is of primary focus along with increased user interoperability. Current improvement efforts are to incorporate new numerical weather prediction forecasts and products communicated from centralized Air Force Hubs to the individual IMETS and its Battlescale Forecast Model in the field. Weather tactical decision aid upgrades and updated forecaster aids are developed to include products from Air Force initiatives such as the New Tactical Forecast System and Small Tactical Terminal for high resolution domestic and foreign weather satellite data. IMETS data and applications will be accessible to Battlefield Functional Area C4I systems as clients through weather database services with the Combat Terrain Information System (CTIS) Digital Topographic Support System (DTSS) environmental database and through the Joint Common Data Base. Application modules from the Army Research Laboratory will be integrated and fielded as an upgrade to the current software baseline. These include: improvements in generation and display of higher time resolution and higher spatially resolved weather forecast and effects information; inclusion of physics-based weather decision aids and models; development of more versatile weather databases that support a variety of service and allied weather forecast models and environmental databases; development of weather applications consistent with joint METOC data standards; development of weather remote-sensing products from meteorological satellites; and ingest of battlefield sensor data to augment initializing mesoscale forecasts. Imets functionality will be ported to a laptop computer to respond to requirements for a lighter more flexible IMETS for the highly mobile units.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Extend Battlescale Forecast Model (BFM) and Air Force MM5 forecast data resolutions	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Develop/Integrate Visualization 5D program	3-4Q	1-4Q	1-4Q	0	0	0	0	0
Develop common BFM and MM5 Atmospheric Sounding Program (ASP) post processor	1-4Q	1-4Q		0	0	0	0	0
Develop Gridded Met Database on DTSS terrain server and support Joint Common Database products	1-4Q	1-4Q		0	0	0	0	0
Convert emerging weather effects applications to the various IMETS platforms	1-4Q	1-4Q	1-4Q	0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604726A - INTEGRATED METEOROLOGICAL SUPPORT SYSTEM</b>	PROJECT <b>D85</b>
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<b><u>E. Schedule Profile (continued)</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Integrated Weather Effects Decision Aid update (client and laptop integration)	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Develop TAWS-A decision aids	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Support ABCS/IMETS integration effort	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Conduct Combined DT/OT on IMETS Light			2Q	0	0	0	0	0
Milestone III IPR on IMETS Light			3Q	0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604726A - INTEGRATED METEOROLOGICAL**  
**SUPPORT SYSTEM**

**PROJECT**  
**D85**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Product Integration Efforts	GSA Task Order	Logicon RDA in Lakewood, Washington	10416	338		661		0	0	0	0	Continue
b . Weather Applications SW Development and Integration	MIPR	ARL at White Sands Missile Range, NM	3295	437		450		0	0	0	0	Continue
c . GFE	MIPR	PM CHS, Fort Monmouth, NJ	210	0		0		0	0	0	0	Continue
d . Inflation Withhold			8	0		0		0	0	0	0	0
e . SBIR/STTR			47	0		0		0	0	0	0	0
Subtotal:			13976	775		1111		0		0	0	Continue

Remarks: Each Task order issued using the GSA Schedule is independent of others and of relatively short term. Cost to complete, Total Cost and Target value of the Contract are not applicable to this acquisition strategy.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604726A - INTEGRATED METEOROLOGICAL SUPPORT SYSTEM</b>	<b>PROJECT</b> <b>D85</b>
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Documentation Coordination	MIPR	CECOM	610	240		200		0	0	0	0	Continue
b . Program Management Support	MIPR	PMO Intel Fusion, Fort Belvoir VA	892	200		200		0	0	0	0	Continue
Subtotal:			1502	440		400		0		0	0	Continue

Remarks: MIPRs are used to pay for work by other government organizations and are issued incrementally contiguous with the fiscal year. Cost to Complete, Total Cost and Target Value of the Contract are not applicable.

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ABCS Developmental Testing	MIPR	EPG, Ft. Huchuca, AZ	300	239	1Q	100	1Q	0	0	0	0	Continue
b . Operational Testing	MIPR	ATEC	252	300	1Q	300		0	0	0	0	Continue
Subtotal:			552	539		400		0		0	0	Continue

Remarks: MIPRs are used to pay for work by other government organizations and are issued incrementally contiguous with the fiscal year. Cost to Complete, Total Cost and Target Value of the Contract are not applicable.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604726A - INTEGRATED METEOROLOGICAL SUPPORT SYSTEM</b>	PROJECT <b>D85</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: No management services are purchased.

Project Total Cost:			16030	1754		1911		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604738A - JSIMS Core Program</b>					PROJECT <b>J11</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
J11 ALLIANCE EXECUTIVE DEVELOPMENT & INTEGRATION	0	0	30985	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

Joint Simulation System (JSIMS) is the next generation Modeling and Simulation (M&S) tool to support training for Commanders in Chief (CINCs), their components, Joint Task Force (JTF) staffs, other Joint organizations, DoD agencies, and the Services. JSIMS will provide the ability to jointly train, educate, develop doctrine and tactics, formulate and assess operational plans, assess warfighting situations, define operational requirements, provide operational input into the development of new weapon systems and perform mission planning and mission rehearsal. JSIMS will support all phases of military operations and Military Operations Other Than War (MOOTW). JSIMS will allow warfighters to train as they intend to fight by interfacing into the simulation through their real-world Command, Control, Communications, Computers and Integration (C4I) systems. JSIMS is key in supporting the operational concepts of Joint Experimentation and will improve the interoperability and efficiencies of the Services. Funding for this program will transfer to the Department of Army in FY02. Funds will buy Software Development for the JSIMS Joint Models and C4I adaptors, Test and Evaluation Support and Common Component Development. This system supports the Legacy, Interim, and Objective transition paths of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

Program funded in Joint Staff PE 0902740J.

**FY 2001 Planned Program**

Program funded in Joint Staff PE 0902740J.



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604738A - JSIMS Core Program**

PROJECT  
**J11**

**FY 2002 Planned Program**

- 4145 Software Development for the JSIMS Joint Models and C4I adaptor by the Joint Development Agent.
- 1200 Test and Evaluation Activity Support.
- 5676 Research and development support services for JSIMS Integration.
- 1939 Government engineering support services for JSIMS Integration.
- 18025 Common Component Development is a functional component of JSIMS used by multiple JSIMS federates in order to accomplish individual Service and Joint training objectives.

Total 30985

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY 2001 PB)	0	0	0	0
Adjustments to Budget Years Since FY 2001 PB	0	0	30985	0
Current Budget Submit (FY 2002/2003 PB )	0	0	30985	0

JSIMS transfer to the Department of the Army started in FY02.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604738A - JSIMS Core Program</b>	PROJECT <b>J11</b>
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<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OMA - Joint Models and C4I Adaptor Maintenance for JSIMS by the Joint Development Agent.	0	0	2820	0	0	0	0	0	0	0
OMA - Common Component Maintenance for JSIMS software support.	0	0	2708	0	0	0	0	0	0	0
OMA - Alliance Software Support Facility for Baseline Integration/Upgrades.	0	0	1672	0	0	0	0	0	0	0

**D. Acquisition Strategy:** Deliver JSIMS as defined in the Operational Requirements Document (ORD) by integrating partner software and doing competitive development of Common Core.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Block 1 - Federation Integration Event 4			1Q	0	0	0	0	0
Federation Integration Event 5			2Q	0	0	0	0	0
Systems Test and Version Release Milestone (Version 1.0)			2Q	0	0	0	0	0
User Events				0	0	0	0	0
System Functional Assessment/Operational Test Event Observation			1Q	0	0	0	0	0
DT/OT			3-4Q	0	0	0	0	0
IOC/MOT&E Event				0	0	0	0	0
MS C, Block 1				0	0	0	0	0
MS B, Block 2		4Q		0	0	0	0	0
Version Release Milestone 2.0 (VRM 2.0)				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604738A - JSIMS Core Program</b>	<b>PROJECT</b> <b>J11</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Software Development	CPAF	TRW, Orlando, FL	44753	0		4145	1Q	0	0	0	0	Continue
b . Common Component Development	MIPR	Various	21049	0		18025	1Q	0	0	0	0	Continue
<b>Subtotal:</b>			65802	0		22170		0		0	0	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Systems R&D Development Support	IDIQ/T&M	Nations, Inc./BTG, Orlando, FL	4651	0		1795	1Q	0	0	0	0	Continue
b . Systems R&D Development Support	FFRDC/CPF F	Mitre Corp., McLean, VA	3689	0		1635	1Q	0	0	0	0	Continue
c . Government Engineering Support	MIPR	Various	931	0		2246	1-2Q	0	0	0	0	Continue
<b>Subtotal:</b>			9271	0		5676		0		0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604738A - JSIMS Core Program</b>	<b>PROJECT</b> <b>J11</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Developmental Test & Evaluation	MIPR	Army, APG, MD	675	0		1200	1Q	0	0	0	0	Continue
Subtotal:			675	0		1200		0		0	0	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Support	MIPR	Navy, Orlando, FL	2878	0		1709	1Q	0	0	0	0	Continue
b . Travel/Utilities/Misc.	MIPR	Navy, Orlando, FL	3892	0		230	1Q	0	0	0	0	Continue
Subtotal:			6770	0		1939		0		0	0	Continue

<b>Project Total Cost:</b>			82518	0		30985		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604741A - Air Defense C2I Engineering Development**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	11753	16310	18233	0	0	0	0	0	0	0
126 FAAD C2 ED	7278	8089	6148	0	0	0	0	0	0	0
146 AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)	4475	8221	12085	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

The Forward Area Air Defense Command, Control, and Intelligence (FAAD C2I) System is the first C2I System to digitize. FAAD C2I provides critical, automated threat aircraft, cruise missile, and unmanned aerial vehicle (UAV) Battle Management/Command, Control, Communication, and Intelligence (BM/C4I) information to support the planning and decision process at various levels of command. The mission is to collect, digitally process, and disseminate real time target cueing and tracking information, common tactical air picture, and C2I information to all Short Range Air Defense (SHORAD) weapons [Avenger, Bradley Linebacker, Manportable Air Defense System (MANPADS), joint and combined arms]. Unique FAAD C2I software will provide this mission capability by integrating FAAD C2 engagement operations software with the Joint Tactical Information and Data System (JTIDS), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced Position Location Reporting Systems (EPLRS), Global Positioning System (GPS), Airborne Warning and Control System (AWACS), Sentinel, and the Army Battle Command System (ABCS) architecture. Provides joint C2 interoperability and horizontal integration with PATRIOT, THAAD, MEADS, JLENS and SHORAD weapon systems by providing an integrated air picture at Army divisions and below. FAAD C2I is the first system to digitize for Army Transformation in the First Digitized Division (FDD), III (Digitized) Corps, the Joint Contingency Force (JCF) and the Interim Brigade Combat Teams (IBCTs).

The Air and Missile Defense Planning and Control System (AMDPCS) is the backbone of Army Air Defense through the BM/C4I capability it provides to Air Defense Artillery Brigades at corps and echelons above corps (EAC), the Army Air and Missile Defense Commands (AAMDC) headquarters, and joint force command and control elements, such as the Battlefield Coordination Detachment (BCDs). The AMDPCS provides ADA Brigades with a fire control system via the Air Defense System Integrator (ADSI) for monitoring and controlling air battle engagement operations by subordinate battalions. The AMDPCS provides a common air and missile defense staff planning and battlespace situational awareness tool via the Air and Missile Defense Workstation (AMDWS) to achieve the common tactical and operational air picture. The AMDWS, like ADSI, will be fielded to air and missile defense units at all echelons of command, battery through theater. The AMDPCS provides the ABCS architecture, Army AMD Transformation and the Army AMD Task Forces (AMDTF) with Joint BM/C4I capability and the Army component of interoperable Joint Theater Air and Missile Defense (JTAMD) BM/C4I. The AMDPCS enables Active, Passive and Attack Operations coordination and a correlated single integrated air picture (SIAP) to Army AMD and Joint Forces. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604741A - Air Defense C2I Engineering Development**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	7943	16462	19152	0
Appropriated Value	7995	16462	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-186	0	0	
c. Omnibus or Other Above Threshold Reductions	0	0	0	
d. Below Threshold Reprogramming	3999	0	0	
e. Rescissions	-55	-152	0	
Adjustments to Budget Years Since FY2001 PB	0	0	-919	
Inflation Adjustment for FY 00	-3	0	0	
Current Budget Submit (FY 2002/2003 PB )	11750	16310	18233	0

NOTE: FY 00 \$3.999 increase/reprogramming was for software development for First Digitized Division (FDD)/III (Digitized) Corps and Joint Operations capability with TBMCS/JDP and Air Force and Navy.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604741A - Air Defense C2I Engineering Development</b>					PROJECT <b>126</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
126 FAAD C2 ED	7278	8089	6148	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Forward Area Air Defense Command, Control, and Intelligence (FAAD C2I) System is the first C2I System to digitize. FAAD C2I provides critical, automated threat aircraft, cruise missile, and unmanned aerial vehicle (UAV) Battle Management/Command, Control, Communication, and Intelligence (BM/C4I) information to support the planning and decision process at various levels of command. The mission is to collect, digitally process, and disseminate real time target cueing and tracking information, common tactical air picture, and C2I information to all Short Range Air Defense (SHORAD) weapons [Avenger, Bradley Linebacker, Manportable Air Defense System (MANPADS), joint and combined arms]. Unique FAAD C2I software will provide this mission capability by integrating FAAD C2 engagement operations software with the Joint Tactical Information and Data System (JTIDS), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced Position Location Reporting Systems (EPLRS), Global Positioning System (GPS), Airborne Warning and Control System (AWACS), Sentinel, and the Army Battle Command System (ABCS) architecture. Provides joint C2 interoperability and horizontal integration with PATRIOT, THAAD, MEADS, JLENS and SHORAD weapon systems by providing an integrated air picture at Army divisions and below. FAAD C2I is the first system to digitize for Army Transformation in the First Digitized Division (FDD), III (Digitized) Corps, the Joint Contingency Force (JCF) and the Interim Brigade Combat Teams (IBCTs).

**FY 2000 Accomplishments**

- 4151 Continued Block III software engineering and development for FDD, JCF, ABCS Integration/Interoperability (e.g. FBCB2).
- 3027 Completed common hardware and software (CHS) integration with all Active Army Divisions; conducted digitization integration with FDD, JCF in conjunction with ABCS, FBCB2 and CHS.
- 100 Conducted System Certification Testing for FDD and JCF

Total 7278

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604741A - Air Defense C2I Engineering Development</b>	PROJECT <b>126</b>
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**FY 2001 Planned Program**

- 5000 Continue Block III software engineering and development for Second Digital Division (SDD), IBCTs, III Corps, FBCB2 co-host, CHS re-host.
  
  - 2560 Continue ABCS FBCB2 and CHS integration and testing for Active and Reserve Army requirements; conduct digitization integration with FDD for DCX1, III (Digitized) Corps, IBCTs in conjunction with Army Transformation.
  - 100 Complete Critical Design Review for Block III, III (Digitized) Corps and SDD.
  - 220 ABCS SE&I
  - 209 SBIR/STTR
- Total 8089

**FY 2002 Planned Program**

- 4381 Continue Block III software engineering and development for FDD DCX2, III (Digitized) Corps, IBCTs and SDD.
  - 1767 Continue ABCS, FBCB2 and CHS integration and testing for Active and Reserve Army requirements; continue digitization integration for FDD, III (Digitized) Corps, SDD and IBCTs in support of Army Transformation.
- Total 6148



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604741A - Air Defense C2I Engineering  
Development**

PROJECT  
**126**

<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, 64820.DE10 - Sentinel GBS	5060	13306	5162	0	0	0	0	0	0	0
OPA 2, WK5053 - Sentinel GBS	48298	25944	1887	0	0	0	0	0	0	0
OPA 2, WK5057 - Sentinel MODS	0	0	30885	0	0	0	0	0	0	0
OPA 2, AD5050 - FAAD C2	10548	32066	8900	0	0	0	0	0	0	0
OPA 2, AD5090 - Mods FAAD C2	7770	0	0	0	0	0	0	0	0	0
OPA 2, AD5070 - Air and Missile Defense	2926	4779	10299	0	0	0	0	0	0	0
Spares (BS9702) - FAAD C2	343	581	466	0	0	0	0	0	0	0
Spares (BS9732) - Sentinel GBS	3841	1904	2061	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The acquisition strategy relies heavily on non-development items (NDI) and evolutionary software development to rapidly meet the demands of air defense battle management/command, control, communications, computers, and intelligence (BM/C4I) requirements, and to keep pace with automated information technologies. The concept of evolutionary software development is being followed and will be accomplished in Blocks I, II, III and IV. Blocks I and II have been completed. FAAD C2 Block III is currently being developed for both the Army's Active and Reserve components.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Preliminary/Critical Design Review		3Q		0	0	0	0	0
System Certification Test	4Q	3Q		0	0	0	0	0
First Unit Equipped - Objective System				0	0	0	0	0
Contract Award, BLK IV				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604741A - Air Defense C2I Engineering Development**

**PROJECT**  
**126**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TRW, BLK I	C/CPIF	Dominquez Hills, CA	176461	0		0		0	0	0	0	0
b . TRW, BLK II	SS/CPIF	Dominquez Hills, CA	32206	0		0		0	0	0	0	0
c . TRW, BLK III	SS/CPIF	Dominquez Hills, CA	52751	4791	1Q	4381	1Q	0	0	0	0	0
d . TRW	SS/T&M	Dominquez Hills, CA	6317	320	1Q	290	1Q	0	0	0	0	0
e . Matrix (RDEC)	MIPR	Huntsville, AL	6288	1315	2Q	690	2Q	0	0	0	0	0
f . Sentinel GBS	MIPR	Huntsville, AL	3791	0		0		0	0	0	0	0
g . CECOM	MIPR	Ft. Monmouth, NJ	1200	0		0		0	0	0	0	0
h . JTIDS	MIPR	Ft. Monmouth, NJ	6000	0		0		0	0	0	0	0
i . In-house/Govt Spt	Various	Various	12181	994	2Q	507	2Q	0	0	0	0	0
j . Inflation Withhold			26	0		0		0	0	0	0	0
k . ABCS SE&I			0	220	1Q	0		0	0	0	0	0
Subtotal:			297221	7640		5868		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604741A - Air Defense C2I Engineering Development**

**PROJECT**  
**126**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . SETA	Various	Huntsville, AL	11029	0		0		0	0	0	0	0
b . SBIR/STTR			0	209	1Q	0		0	0	0	0	0
Subtotal:			11029	209		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ADATD, Ft. Bliss/A TEC	MIPR		10016	25	1Q	85	2Q	0	0	0	0	0
b . RTTC/WSMR			2000	215	2Q	195	2Q	0	0	0	0	0
Subtotal:			12016	240		280		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604741A - Air Defense C2I Engineering Development**

**PROJECT**  
**126**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			320266	8089		6148		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604741A - Air Defense C2I Engineering Development</b>					<b>PROJECT</b> <b>146</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
146 AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)	4475	8221	12085	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Air and Missile Defense Planning and Control System (AMDPCS) is the backbone of Army Air Defense through the BM/C4I capability it provides to Air Defense Artillery Brigades at corps and echelons above corps (EAC), the Army Air and Missile Defense Commands (AAMDC) headquarters, and joint force command and control elements, such as the Battlefield Coordination Detachment (BCDs). The AMDPCS provides ADA Brigades with a fire control system via the Air Defense System Integrator (ADSI) for monitoring and controlling air battle engagement operations by subordinate battalions. The AMDPCS provides a common air and missile defense staff planning and battlespace situational awareness tool via the Air and Missile Defense Workstation (AMDWS) to achieve the common tactical and operational air picture. The AMDWS, like ADSI, will be fielded to air and missile defense units at all echelons of command, battery through theater. The AMDPCS provides the ABCS architecture, Army AMD Transformation and the Army AMD Task Forces (AMDTF) with Joint BM/C4I capability and the Army component of interoperable Joint Theater Air and Missile Defense (JTAMD) BM/C4I. The AMDPCS enables Active, Passive and Attack Operations coordination and a correlated single integrated air picture (SIAP) to Army AMD and Joint Forces.

**FY 2000 Accomplishments**

- 370 Continued software engineering and development for PATRIOT, THAAD and the AMD family of systems.
- 106 Conducted Preliminary Design Review/System Certification Testing
- 3999 Software Development for FDD/III (Digitized) Corps and Joint Operations capability with Theater Battle Management Core System/Joint Defense Planner (TBMCS/JDP) and Airforce and Navy

Total 4475

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)****June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604741A - Air Defense C2I Engineering  
Development**

PROJECT

**146****FY 2001 Planned Program**

- 4075 Continue AMDWS software engineering and development for FDD, III (Digitized) Corps, ABCS, AMD family of systems (PATRIOT, THAAD, MEADS, JLENS, Joint Services)
- 2408 Continue AMDWS and ADSI Software Certification Testing; Continue Army and Joint Integration and Interoperability Assessments
- 1273 Conduct AMDPCS sheltered subsystems configuration engineering and development
- 220 ABCS SE&I
- 245 SBIR/STTR

Total 8221

**FY 2002 Planned Program**

- 5457 Continue AMDWS software engineering and development for FDD, III (Digitized) Corps, SDD, AMD family of systems, JTAMD family of systems (FOS), JTAMD FOS integration
- 2300 Conduct ADSI software engineering and development for III (Digitized) Corps, AMD (FOS), JTAMD FOS integration
- 772 Continue software systems certification testing; continue Army and Joint integration and interoperability assessments
- 3556 Continue AMDPCS sheltered subsystems configuration engineering and development, SIAP concept analysis; SIAP concept and analysis

Total 12085

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604741A - Air Defense C2I Engineering Development</b>	PROJECT <b>146</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA, AD 5070 - AMDPCS	2926	4779	10299	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The acquisition strategy relies on non-development items (NDI) and evolutionary software development to rapidly meet the demands of air defense battle management command, control, communications, computers, and intelligence (BM/C4I) requirements and to keep pace with automated information technologies. The concept of evolutionary software development will be accomplished in a series of AMDWS and ADSI Block releases and upgrades. AMDPCS is being developed for both the Army's Active and Reserve components.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Systems Certification Testing - AMDWS/ADSI/AMDPCS	4Q	3Q	4Q	0	0	0	0	0
AMDWS Software Release	2Q	3Q	3Q	0	0	0	0	0
AMDWS Software Certification	4Q	2-4Q	3-4Q	0	0	0	0	0
ADSI Software Release	3Q		3Q	0	0	0	0	0
ADSI Software Certification		1-3Q		0	0	0	0	0
AMDPCS System-First Unit Equipped (ADA Brigade)				0	0	0	0	0
AMDPCS System -First Unit Equipped (AAMDC)				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604741A - Air Defense C2I Engineering Development**

**PROJECT**  
**146**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . AMDWS	SS/CPIF	Huntsville, AL	3289	4075	1Q	5547	1Q	0	0	0	0	0
b . APC, ADSI	SS/CPIF		0	500	2Q	2300	1Q	0	0	0	0	0
c . In-House/Govt Support	VARIOUS		487	1302	2Q	1302	2Q	0	0	0	0	0
d . Inflation Withhold			0	0		0		0	0	0	0	0
e . MATRIX (RDEC) MIPR			606	1449	2Q	1512	2Q	0	0	0	0	0
f . CECOM MIPR			0	196	1Q	384	1Q	0	0	0	0	0
g . ABCS SE&I			0	220	1Q	0		0	0	0	0	0
Subtotal:			4382	7742		11045		0		0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604741A - Air Defense C2I Engineering Development**

**PROJECT**  
**146**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . SBIR/STTR			0	245	1Q	0		0	0	0	0	0
Subtotal:			0	245		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Certification	MIPR	JITC, Ft Huachuca/ADATD	93	75	2Q	825	1Q	0	0	0	0	0
b . Interoperability Assessment	MIPR	CTSF, Ft Hood/RTTC/WSMR	0	159	2Q	215	1Q	0	0	0	0	0
Subtotal:			93	234		1040		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604741A - Air Defense C2I Engineering Development**

**PROJECT**  
**146**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			4475	8221		12085		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>			<b>PE NUMBER AND TITLE</b> <b>0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</b>							
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	0	66164	0	0	0	0	0	0	0
361 INTELLIGENCE SIMULATION SYSTEMS	0	0	4200	0	0	0	0	0	0	0
362 WARFIGHTER SIMULATION	0	0	61964	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element funds the engineering development of constructive and wargame simulations used to realistically train commanders and their battlestaffs on today's complex battlefield conditions. Project D361 funds the engineering development of systems to train Army military intelligence analysts. In FY02, the funding continues the development of the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT), which will provide Battle Command training by creating a realistic intelligence information environment that is exploited and reported by Military Intelligence (MI) soldiers to battle commanders and staff. Project D362, Warfighters' Simulation (WARSIM) develops the Army's premier wargame simulation for training leaders and battlestaffs at Brigade, Division, Corps, and echelons above Corps. WARSIM will replace the current legacy systems Corps Battle Simulation (CBS), Tactical Simulation (TACSIM), and integrate Combat Service Support/Tactical Simulation System (CSS/TSS). It also develops the Land component for the Joint Simulation System (JSIMS). WARSIM will provide functionality not currently available (digital operations, stability and support operations, information ops), link to unit organizational C4I equipment, improve exercise generation and after-action reporting, and significantly reduce the number of role players required to support training exercises, thus reducing operational costs. The FY02 funding supports the completion of software development for the initial Version Release for the Army. This system supports the Objective path of the Transformation Campaign Plan (TCP). Note that these projects transferred beginning in FY02 from PE 604715A, Projects D241 and D396.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604742A - CONSTRUCTIVE SIMULATION SYSTEMS  
 DEVELOPMENT**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	0	0	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	66164	
Current Budget Submit (FY 2002/2003 PB )	0	0	66164	0

This Program Element was established and the program funding transferred from PE 0604715A, Projects D241 and D396.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</b>				PROJECT <b>361</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
361 INTELLIGENCE SIMULATION SYSTEMS	0	0	4200	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project funds the engineering development of systems to realistically train Army military intelligence analysts. In FY02, the funding continues the development of the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT), which will provide Battle Command training by creating a realistic intelligence information environment that is exploited and reported by Military Intelligence (MI) soldiers to battle commanders and staff.

This system supports the Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2002 Planned Program**

- 2418 Continue development of IEWTPT
  - 566 Target Signature Array (TSA) definition and continue integration of IEWTPT with WARSIM/WIM
  - 369 Early user interface at Fort Huachuca for continuous user feedback.
  - 847 Systems engineering and Security accreditation
- Total 4200

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604742A - CONSTRUCTIVE SIMULATION                  SYSTEMS DEVELOPMENT</b>	PROJECT <b>361</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA3, Appropriation NA0100, Training Devices, Nonsystem	77274	115866	74481	0	0	0	0	0	0	0
RDTE, PE 0604715, Project D241	51545	53139	30458	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Competitive development based on performance specifications.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
IEWTPT CONTRACT AWARD			1Q	0	0	0	0	0
IEWTPT Milestone C				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT**

**PROJECT**  
**361**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IEWTPT EMD	C/CPIF/FFP	Motorola Inc., Scottsdale, AZ	0	0		2418	1Q	0	0	0	0	Continue
Subtotal:			0	0		2418		0		0	0	Continue

Remarks: This program transferred from PE 604715A, Project D241 in FY02.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IEWTPT Engineering Support	Multiple	Various	0	0		1187	1Q	0	0	0	0	Continue
Subtotal:			0	0		1187		0		0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604742A - CONSTRUCTIVE SIMULATION SYSTEMS**      **PROJECT**  
**DEVELOPMENT**      **361**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IEWTPT Development Test	Various	Multiple	0	0		180	1Q	0	0	0	0	Continue
<b>Subtotal:</b>			0	0		180		0		0	0	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IEWTPT Program Management	Various	Multiple	0	0		415	1Q	0	0	0	0	Continue
<b>Subtotal:</b>			0	0		415		0		0	0	Continue

<b>Project Total Cost:</b>			0	0		4200		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</b>				PROJECT <b>362</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
362 WARFIGHTER SIMULATION	0	0	61964	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This Project funds the engineering development of Warfighter Simulation (WARSIM), the Army's premier wargaming simulation for training leaders and battlestaffs at Division, Corps, and echelons above Corps. WARSIM will replace the current legacy systems Corps Battle Simulation (CBS), Tactical Simulation (TACSIM), and Combat Service Support/Tactical Simulation System (CSS/TSS). It also develops the Land component for the Joint Simulation System (JSIMS). WARSIM will provide functionality not currently available (digital operations, stability and support operations, information ops), link to unit organic C4I equipment, improve exercise generation and after-action reporting, and significantly reduce the number of role players required to support training exercises, thus reducing O&M costs. The FY02 funding supports the completion of software development for the initial Version Release for the Army.

This system supports the Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2002 Planned Program**

- 11442 Procure the balance of the equipment needed for the Operational Test Corps/Div suite for XVIII Abn Corps, Fort Bragg and the Bde/Bn suite for 101st Abn Div, Fort Campbell.
- 14332 Complete the software development, integration and release of WARSIM Version 1.0.
- 29880 Continue development of the software models for WARSIM Version 2.0.
- 4225 Initiate requirements analysis and definition of the functionality and begin software development of WARSIM Version 3.0.
- 2085 Perform Post Deployment Software Support.

Total 61964

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604742A - CONSTRUCTIVE SIMULATION                  SYSTEMS DEVELOPMENT</b>	PROJECT <b>362</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE,A 0604715A Non system Training Devices Engineering Development, D241	51545	53139	30458	0	0	0	0	0	0	0
RDTE,A 0604715A Non system Training Devices Engineering Development, D396	12318	19717	0	0	0	0	0	0	0	0
RDTE,A 0604715A, Project 24A, WARSIM, 3 YR FUNDS, P.L. 106246	5000	0	0	0	0	0	0	0	0	0
OPA3 Appropriation NA0100, Training Devices, Nonsystem	77274	115866	74481	0	0	0	0	0	0	0

This PE was established and funding transferred from PE 0604715A, D241 and D396. The OPA3 project funds the production and fielding of WARSIM world-wide.

**C. Acquisition Strategy:** Competitive development based on performance specifications.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Award WARSIM System Development Contract			1Q	0	0	0	0	0
Award WIM System Development Contract			1Q	0	0	0	0	0
Army Functional Assessments			1Q	0	0	0	0	0
Hardware Initial Production Decision			2Q	0	0	0	0	0
WARSIM/JSIMS Version 1.0 Release			2Q	0	0	0	0	0
WARSIM IOTE			3Q	0	0	0	0	0
Milestone C/System Materiel Release				0	0	0	0	0
*Dates indicated are completion dates				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604742A - CONSTRUCTIVE SIMULATION SYSTEMS**  
**DEVELOPMENT**

**PROJECT**  
**362**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . WARSIM EMD	C/CPAF	Lockheed Martin Info Sys, Orlando FL	0	0		34544	1Q	0	0	0	0	Continue
b . WIM EMD	C/CPAF	MRJ Inc, Orlando FL	0	0		11127	1Q	0	0	0	0	Continue
c . WARSIM PDSS	C/CPAF	Lockheed Martin Info Sys, Orlando FL	0	0		2085	4Q	0	0	0	0	Continue
Subtotal:			0	0		47756		0		0	0	Continue

Remarks: FY02 WARSIM/WIM EMD values include procurement of IOTE test suites.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering & Tech Spt	C/CPFF	MITRE FFRDC	0	0		440	1Q	0	0	0	0	Continue
b . Data Mgt Repository	C/CPFF	Veridien, Orlando FL	0	0		316	1Q	0	0	0	0	0
c . Software Engineering	C/CPFF	AST, Orlando FL	0	0		1110	1Q	0	0	0	0	Continue
d . Functional Description of the Battlespace	Multiple	Various	0	0		4305	1Q	0	0	0	0	Continue
e . WARSIM IPT	Multiple	Various	0	0		2549	1Q	0	0	0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</b>	<b>PROJECT</b> <b>362</b>
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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		8720		0		0	0	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Army Functional Assessments	Multiple	Various	0	0		1814	1Q	0	0	0	0	Continue
b . Verification, Validation and Accreditation	Multiple	Various	0	0		1614	1Q	0	0	0	0	Continue
Subtotal:			0	0		3428		0		0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604742A - CONSTRUCTIVE SIMULATION SYSTEMS**  
**DEVELOPMENT**

**PROJECT**  
**362**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	Multiple	Various	0	0		1895	1Q	0	0	0	0	Continue
b . Cost Analysis Support	C/CPFF	Adv Sys Tech, Inc., Orlando FL	0	0		165	1Q	0	0	0	0	Continue
Subtotal:			0	0		2060		0		0	0	Continue

<b>Project Total Cost:</b>			0	0		61964		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604746A - Automatic Test Equipment Development**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	15585	12837	11582	0	0	0	0	0	0	0
L59 DIAGNOST/EXPERT SYS DE	12716	3509	3568	0	0	0	0	0	0	0
L65 TEST EQUIPMENT DEVELOPMENT	2869	2960	982	0	0	0	0	0	0	0
L66 EMBEDDED DIAGNOSTICS/PROGNOSTICS DEVELOPMENT	0	6368	7032	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element provides for the development of diagnostic/prognostic hardware and software to support the increasingly complex electronics of Army weapon systems. The program focuses on commercial state-of-the-art test technologies which are common to multiple weapons platforms to minimize the cost of troubleshooting and maintenance in the field. Expert systems and artificial intelligence applications are being developed under this program element as part of the Army Diagnostics Improvement Program (ADIP) to support the overall Army strategy of improving the self-diagnostic capability of weapon systems through use of embedded sensors and built-in diagnostics. The goal of embedding diagnostics is to minimize the need for external testers and to improve the troubleshooting abilities of soldiers in the field. This program element further provides for the development of modular, reconfigurable automatic and semi-automatic systems to satisfy the test and diagnostic requirements of Army weapon systems and also the calibration and repair requirements of Army general purpose test, measurement, and diagnostic equipment. A rapidly deployable calibration set with emphasis on digital electronics and tailored to support Army field units is being developed to alleviate the serious deployability and survivability shortfalls in the current systems, and the Army's participation in development of a Joint Service automatic test system is funded through this program. This project supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604746A - Automatic Test Equipment Development**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	16063	12956	8332	0
Appropriated Value	16252	12956	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-423	0	0	
c. Omnibus or Other Above Threshold Reductions (Inflation)	-65	0	0	
d. Below Threshold Reprogramming	-55	0	0	
e. Rescissions	-124	-119	0	
Adjustments to Budget Years Since FY2001 PB	0	0	3250	
Current Budget Submit (FY 2002/2003 PB )	15585	12837	11582	0

FY 2002 - Increase of \$3250 funds embedded diagnostic/prognostic developmental projects under the Army Diagnostics Improvement Program

FY 2003 - Increase of \$3442 funds embedded diagnostic/prognostic developmental projects under the Army Diagnostics Improvement Program

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604746A - Automatic Test Equipment Development</b>					PROJECT <b>L59</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L59      DIAGNOST/EXPERT SYS DE	12716	3509	3568	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project funds development of diagnostic systems and general-purpose test and diagnostic equipment. These systems and equipment are required to overcome existing deficiencies and voids in organic test and diagnostic capabilities and to ensure the operational readiness, accuracy, and effectiveness of the Army's weapons and combat support systems. The project provides for development of diagnostic technologies and state-of-the-art general-purpose automatic test equipment to support the Army's weapon systems; improvement of general-purpose automatic test equipment to meet new testing and technological requirements; market surveys of commercially available test equipment, methods, and procedures to determine applicability to Army requirements; and development and validation of test and diagnostic software. Applications of state-of-the-art technologies and electro-optical diagnostics for battlefield use will be developed to meet identified requirements. This project supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 1390      Expanded ground vehicle-based anticipatory maintenance system to brigade level.
  - 1519      Developed initial helicopter-based anticipatory maintenance system.
  - 1444      Developed horizontal technology insertion interface for the Bradley Fighting Vehicle System.
  - 7021      Completed preplanned product improvement program and testing of Electro-Optics Test Facility (EOTF).
  - 1342      Developed EOTF test programs.
- Total 12716



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604746A - Automatic Test Equipment Development**

PROJECT

**L59**

## FY 2001 Planned Program

- 1000 Evaluate new hardware upgrades for the Integrated Family of Test Equipment (IFTE).
- 482 Conduct user assessment of EOTF.
- 934 Develop and evaluate new software applications for the IFTE.
- 1000 Commence Army developmental efforts on a Department of Defense (DoD) joint service automatic test system.
- 93 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR).

Total 3509

## FY 2002 Planned Program

- 1400 Evaluate hardware enhancements for new Integrated Family of Test Equipment (IFTE) test requirements.
- 1002 Continue development of new software test applications for the IFTE.
- 1166 Continue developmental efforts on Department of Defense (DoD) joint service automatic test system.

Total 3568

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604746A - Automatic Test Equipment Development</b>	PROJECT <b>L59</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA3, MB4000, Integrated Family of Test Equipment (IFTE)	65538	67754	52397	0	0	0	0	0	0	0

**C. Acquisition Strategy:** This project funds a number of separate but related efforts to develop and upgrade general-purpose automatic test equipment and diagnostic software to support Army weapon systems. The projects are managed by the Product Manager, Automatic Test Support Systems and are focused on ensuring maximum use of commercial technologies and equipment to satisfy the Army's test and diagnostic requirements. When the necessary expertise and capability are available within the Department of Defense (DoD), services required for the individual developmental projects are ordered from the government source; otherwise, commercial contracts are used. Equipment required for developmental projects is obtained by contract from the commercial supplier. Developmental efforts on the Electro-Optics Test Facility (EOTF) preplanned product improvement program are being completed under a sole source contract awarded to the prime contractor for the system. The Army will participate with the other services in development of a DoD standard automatic test system. The Army requirement is stated in the Integrated Family of Test Equipment (IFTE) operational requirements document (ORD). This developmental effort will be competitive contractual action and is being managed by a joint service NxTest Technical Working Group.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
IFTE ORD Approval	2Q			0	0	0	0	0
Complete EOTF User Assessment			1Q	0	0	0	0	0
EOTF Type Classification-Standard/Materiel Release Approval				0	0	0	0	0
EOTF Initial Operational Capability				0	0	0	0	0

NOTE: This is a continuing program of developmental activities to provide a means for satisfying test and diagnostic support requirements of Army weapon systems. It consists of a number of similar and related efforts, many of which do not entail distinct major milestones.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604746A - Automatic Test Equipment Development**

**PROJECT**  
**L59**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Systems Engineering	SS/CPFF	Northrop Grumman, Rolling Meadows, IL	3225	978	2-3Q	689	2-3Q	0	0	0	0	0
b . Software Development	SS/CPFF	Northrop Grumman, Rolling Meadows, IL	1716	663	1-3Q	559	2-3Q	0	0	0	0	0
c . Systems Engineering	Various	Various	35699	735	1-4Q	659	1-4Q	0	0	0	0	0
d . Software Development	Various	Various	24115	175	1-4Q	586	1-3Q	0	0	0	0	0
e . Testing	Various	Various	4303	200	1-4Q	200	1-4Q	0	0	0	0	0
f . Support Equipment	Various	Various	75	0		0		0	0	0	0	0
g . Government Engineering	Various	Various	7270	200	1-4Q	350	1-4Q	0	0	0	0	0
Subtotal:			76403	2951		3043		0		0	0	0

Remarks: Test and evaluation costs are included as part of the product development costs.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604746A - Automatic Test Equipment Development**

**PROJECT**  
**L59**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Contractor Technical Services	Various	Various	862	150	1-4Q	150	1-4Q	0	0	0	0	0
b . Integrated Logistics Development	Various	Various	1016	0		0		0	0	0	0	0
c . Training Plans/Material	Various	Various	214	0		0		0	0	0	0	0
d . Technical Publications	Various	Various	625	0		0		0	0	0	0	0
Subtotal:			2717	150		150		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: See product development remark.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604746A - Automatic Test Equipment Development**

**PROJECT**  
**L59**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Personnel	In House	Various	6952	408	1-4Q	375	1-4Q	0	0	0	0	0
Subtotal:			6952	408		375		0		0	0	0
<b>Project Total Cost:</b>			86072	3509		3568		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604746A - Automatic Test Equipment Development</b>					<b>PROJECT</b> <b>L66</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L66 EMBEDDED DIAGNOSTICS/PROGNOSTICS DEVELOPMENT	0	6368	7032	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project funds the developmental efforts under the Army Diagnostics Improvement Program (ADIP). The ADIP has three main thrusts: Embed diagnostics on all major Army platforms, develop an anticipatory maintenance system, and improve the diagnostics on current systems. Generic procedures, software applications, and hardware devices that can be embedded in weapon systems will be developed and tested under this project. Included in this effort will be a basic, generic Health and Usage Monitoring System for Army helicopters. A similar system will be developed for ground-based systems, and an inexpensive system will be developed for use in the ground-based diesel engine truck fleet. An anticipatory maintenance system for air and ground weapon systems will be developed and tested. This project supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

Funded as part of Project DL59 in FY 2000.

**FY 2001 Planned Program**

- 1815 Test and evaluate an initial generic, helicopter-based anticipatory maintenance system (a health and usage monitoring system (HUMS)).
- 120 Initiate helicopter-based anticipatory maintenance data collection.
- 1827 Develop and test generic embedded diagnostics for ground vehicles.
- 1951 Test initial predictive maintenance capability for ground vehicles.
- 325 Investigate new technologies for adaptation to Army maintenance.
- 140 Coordinate diagnostics technologies/architectures for new systems.
- 190 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR).

Total 6368

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604746A - Automatic Test Equipment Development**

PROJECT

**L66**

## FY 2002 Planned Program

- 900 Continue to test initial health and usage monitoring system (HUMS).
  - 1941 Adapt and test the generic embedded diagnostics for Paladin.
  - 2034 Finalize predictive maintenance initial operating capability for ground vehicles.
  - 1300 Continue helicopter-based anticipatory maintenance data collection and initiate analysis of data.
  - 697 Continue investigations of new technologies and their application to Army systems.
  - 160 Continue coordination of diagnostic technologies/architectures for new systems.
- Total 7032

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604746A - Automatic Test Equipment Development</b>	PROJECT <b>L66</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA3, N11400, Army Diagnostics Improvement Program	5172	17142	18344	0	0	0	0	0	0	0

**C. Acquisition Strategy:** This project funds a continuing program for development of maintenance systems, methods, and procedures to improve diagnostic support capabilities for Army weapon systems and for integration of commercial diagnostics applications into Army maintenance concepts. The project is managed by the Product Manager, Automatic Test Support Systems and is focused on ensuring maximum use of commercial technologies to satisfy the Army's test and diagnostic requirements. When the necessary expertise and capability are available within the Department of Defense, services required for the individual initiatives under this project will be ordered from the government source; otherwise, existing or new commercial contracts will be used. Equipment required for developmental projects will be obtained by contract from the commercial supplier. Candidate equipment and maintenance methods will be identified and evaluated through market research and government testing and evaluation.

**D. Schedule Profile:** Not applicable for this item.

This is a continuing program of developmental activities to improve diagnostics of Army weapons and combat support systems. It consists of a number of similar and related efforts that do not entail distinct major milestones.



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604746A - Automatic Test Equipment Development**

**PROJECT**  
**L66**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Systems Engineering	Various	Various	0	1986	1-4Q	3338	1-4Q	0	0	0	0	0
b . Software Development/ Engineering	Various	Various	0	3453	1-4Q	2844	1-4Q	0	0	0	0	0
c . Testing	Various	Various	0	220	1-4Q	200	1-4Q	0	0	0	0	0
d . Government Engineering	Various	Various	0	200	1-4Q	200	1-4Q	0	0	0	0	0
Subtotal:			0	5859		6582		0		0	0	0

Remarks: Test and evaluation costs are included as part of the product development costs.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Contractor Technical Services	Various	Various	0	150	1-4Q	150	1-4Q	0	0	0	0	0
Subtotal:			0	150		150		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604746A - Automatic Test Equipment Development**

**PROJECT**  
**L66**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: See product development remark.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Personnel & Support	In House	Various	0	359	1-4Q	300	1-4Q	0	0	0	0	0
Subtotal:			0	359		300		0		0	0	0

<b>Project Total Cost:</b>			0	6368		7032		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	7999	20501	26058	0	0	0	0	0	0	0
C73 SYNTHETIC THEATER OF WAR	1333	1106	1837	0	0	0	0	0	0	0
C74 DEVEL SIMULATION TECH	0	3313	7384	0	0	0	0	0	0	0
C77 INTERACTIVE SIMULATION	4168	1041	2239	0	0	0	0	0	0	0
C78 COMPUTER GENERATED FORCES	2498	15041	14598	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

Advanced Simulation Technologies (AST) is a synthetic environment within which humans may interact through a systematic connection of different subcomponent simulations, simulators and/or instrumented live task forces. These components may be located together or distributed at geographically dispersed locations, yet can interoperate using various simulation hardware linked through use of standard communication architecture. This program element supports the Army's Advanced Simulation Program to enable operational readiness and support the development of concepts and systems for Force XXI and the Army After Next through the application of new simulation technology and techniques. This engineering development and application of simulation technology will provide the tools to electronically link all subcomponents together in a manner that is transparent to the user. The synthetic environment is used to verify the scenarios, tactics/techniques and procedures, train testers on new hardware/software and conduct trial test runs before costly live field tests. The tools developed are available for reuse by developers and users of simulations throughout the Army. Project C73, Synthetic Theater of War, STOW-A, provides innovative applications of legacy systems (live, virtual and constructive, Command, Control, Communications, Computers and Integration (C4I) Surveillance and Reconnaissance) to meet the urgent requirements of the domains (e.g. training shortfalls) until availability of the next generation systems. STOW-A provides direct support to the Training, Exercises and Military Operations (TEMO) domain and the Advanced Concepts Requirements (ACR) domain. TEMO support derives from the demonstrated, low cost training capabilities that are provided by the toolkit. ACR support derives from the demonstrated capability of the kit to support battle lab and Army Warfighting Experiments (AWE) exercises and the development of Tactics, Techniques and Procedures to support digital operations. Project C74, Developmental Simulation Technology, provides simulator equipment upgrades, network upgrades, software upgrades, and resolves interoperability issues in support of the Army's Core DIS Facilities (CDFs) at Fort Knox, Fort Benning, Fort Rucker and the Operational Support Facility in Orlando, Florida. Project C77, Interactive Simulation, focuses on engineering development of advanced simulation technology and tools to provide a reusable synthetic environment. This program will benefit the Army and DOD by providing standards for interoperability and software. The project also develops and enhances reconfigurable simulators which are used as Advanced Concepts Research Tools (ACRT) that will allow the battlelabs to accomplish their mission in support of the ACR, Research, Development and Acquisition (RDA), and TEMO domains. Project C78 develops and upgrades computer generated forces software systems that support experimentation, concept evaluation, materiel development and training. The One Semi-Automated Forces (OneSAF) program will combine and improve the functionality and behaviors of several current semi-automated forces to provide a single SAF for Army use in simulations.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION**

The FY02, STOW-A, C73 Project line will continue the development of the software to link entity-based simulations and simulators to live tactical command and control systems and incorporate live simulations through the instrumented operating systems at the Combat Training Centers (CTCs). The FY02, Developmental Simulation Technology, C74 Project line continues the development of an integration of full fidelity Advanced Research Concept Tools and starts the development and management of the Simulation to C4I interoperability (SIMCI) effort between the models and simulations and tactical C4I Systems. FY02, Interactive Simulation, C77 Project line supports the development of the Environmental Data Base (EDB) for rapid extraction of terrain and environmental data at the user level. The FY02, Computer Generated Forces, C78 Project line will continue development of the functionality to provide OneSAF with terrain, editing and data collection tools, and infrastructure as well as continue the development of life cycle applications and infrastructure enhancements for OneSAF version 1.0. This program line supports the Interim, Objective and Legacy to Objective transition paths of the Transformation Campaign Plan (TCP).

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	7605	20689	30858	0
Appropriated Value	7657	20689	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-184	0	0	
c. Omnibus or Other Above Threshold Reductions (Inflation)	-28	0	0	
d. Below Threshold Reprogramming	578	0	0	
e. Rescissions	-24	-188	0	
Adjustments to Budget Years Since FY2001 PB	0	0	-4800	
Current Budget Submit (FY 2002/2003 PB )	7999	20501	26058	0

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)****June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION**

Funds realigned in FY02 (-\$4800) to higher priority requirements.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION</b>				PROJECT <b>C73</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C73 SYNTHETIC THEATER OF WAR	1333	1106	1837	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This program supports development and integration activities for the STOW-A Digital Sustainment Training (DST) software baseline that includes integration of fielded simulations and simulators with C4ISR systems. The development and integration to be accomplished will result in the capability to provide a seamless synthetic environment which will support digital training, test and mission rehearsal requirements. Specific efforts will include integration of a ground maneuver simulation into the Fire Support Simulation Tools (FSST) architecture and enhancement of the extant intelligence capability of FSST. Additionally better representation and fidelity of other battlefield operating systems functionality will be gained. Development focuses on leveraging existing and emerging technology in a manner that produces substantial and continual improvements in combat readiness through the use of full spectrum, high fidelity, distributed simulation capability to support a large scale user-based exercise/experiment for JOINT VENTURE training and analytical needs. The Digital Battlefield Sustainment Trainer (DBST) program is a DCSOPS directed, strategic agility program designed to meet the Operational Needs and other critical initiatives from the field. It will do this through the application of available legacy and emerging technologies. This project develops innovative applications of legacy systems (live, virtual, constructive, C4ISR) to meet urgent needs across the domains (e.g., training shortfalls) until the next-generation systems are available. STOW-ADST (DBST) will contribute to providing the required digital training capability to the field, helping to overcome unique digital training challenges that currently exist in the U.S. Army at the brigade level. This project supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 455 Continued to develop the software required to link entity-based simulations and simulators to live tactical command and control systems in support of periodic releases of Army Battle Command Systems (ABCS) software. Supported Joint Venture and Joint Contingency Force Simulation - Simulation Integration.
  - 300 Developed linkages between C4I to live simulations.
  - 578 Management Support.
- Total 1333

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604760A - DISTRIBUTIVE INTERACTIVE  
SIMULATION**

PROJECT

**C73****FY 2001 Planned Program**

- 344 Develop the software to link entity-based simulations and simulators, particularly to support Joint Venture and Division Capstone Exercise.
- 292 Incorporate Warfighter Simulation (WARSIM) software as the primary model and early applications of High Level Architecture(HLA).
- 277 Continue development of improved C4I fidelity.
- 162 Verification and validation of software integration.
- 31 Small Business Innovative Research (SBIR)/Small Business Technology Transfer Program (STTR).

Total 1106

**FY 2002 Planned Program**

- 758 Continue to develop the software to link entity-based simulations and simulators to live tactical command and control systems
- 511 Incorporate live simulations through the instrumented operating systems at the CTCs.
- 409 Continue development and integrations of HLA protocols.
- 159 Verification and validation of software integration.

Total 1837

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION</b>	PROJECT <b>C73</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA3, KA6000, Reconfig Simulators MDEP TBIS	80	22	0	0	0	0	0	0	0	0
OMA, TBIS, 121014	849	764	1070	0	0	0	0	0	0	0

OPA funds in FY00 and FY01 support fielding of hardware/software procured in prior years.

**C. Acquisition Strategy:** Development is accomplished through delivery orders to competitively selected contractors based on performance specifications.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Award Engr & Integration Contract	2Q	1Q	1Q	0	0	0	0	0
Annual SW Version Release	3Q	3Q	3Q	0	0	0	0	0

FY00 Milestones Completed.



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION</b>	<b>PROJECT</b> <b>C73</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CCTT TSIU Interface	C/CPIF	Coleman Research, Huntsville, AL	2073	226	2Q	519	2Q	0	0	0	0	Continue
b . STOW-A/DBST Software Development	Various	Multiple	6081	100	1Q	209	1Q	0	0	0	0	Continue
c . Architecture Development	C/CPIF	DSCS/AMB, Columbus OH	100	129	1Q	125	1Q	0	0	0	0	Continue
<b>Subtotal:</b>			8254	455		853		0		0	0	Continue

Remarks: Each award is Delivery Order against CPIF contract.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engr & Subject Matter Expertise	Various	Multiple	1324	145	1Q	320	1Q	0	0	0	0	Continue
<b>Subtotal:</b>			1324	145		320		0		0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION</b>	<b>PROJECT</b> <b>C73</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DBST Integration, evaluation and test	C/CPFF	TBD	789	162	4Q	150	1Q	0	0	0	0	0
Subtotal:			789	162		150		0		0	0	0

Remarks: Required for evaluation of annual version release.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	Various	Multiple	2127	344	1Q	514	1Q	0	0	0	0	Continue
Subtotal:			2127	344		514		0		0	0	Continue

<b>Project Total Cost:</b>			12494	1106		1837		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION</b>				<b>PROJECT</b> <b>C74</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C74 DEVEL SIMULATION TECH	0	3313	7384	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Project C74 - Developmental Simulation Technology: This project supports the Core Distributed Interactive Simulation (DIS) Facilities (CDF) at Fort Knox, KY, Fort Rucker, AL, and the Operational Support Facility in Orlando, FL. The project provides a virtual combined arms battlefield with the warfighter-in-the-loop to evaluate weapon system concepts, tactics, doctrine and test plans. Development supports related simulations and simulator efforts, including the Advanced Concepts Research Tools (ACRT) and the C4I Interoperability.

FY02 continues integration of full fidelity Advanced Concepts Research Tools. Starts the development and management of the Simulation-to-C4I interoperability (SIMCI) effort between the models and simulations and tactical C4I Systems. Provides Army level synchronization of SIMCI-related initiatives (development, configuration management, certification, and distribution). Provides recommendations on DA level policy to improve interoperability between M&S and tactical C4I systems.

This project supports the Objective transition path of the Transformation Campaign Plan (TCP).

NOTE: ACRT transferred from C77 to C74 in FY01.

**FY 2000 Accomplishments**

Project not funded in FY 2000. Refer to C77.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604760A - DISTRIBUTIVE INTERACTIVE  
SIMULATION**

PROJECT

**C74**

## FY 2001 Planned Program

- 3214 Integrate additional full fidelity and Desktop Advanced Concepts Research Tools (ACRT). Continue development support of the Core Distributed Interactive Simulation Facilities and related simulations and simulator tools.
- 99 Small Business Innovative Research (SBIR)/Small Business Technology Transfer Program (STTR).

Total 3313

## FY 2002 Planned Program

- 4593 Continue development and integration of full fidelity Advanced Concepts Research Tools.
- 2791 Develop and manage the Simulation-to-C4I interoperability (SIMCI) initiatives between the models and simulations (M&S) and tactical C4I Systems. Conduct studies to align the Army's operational, systems, and technical architectures to define and enable interoperable solutions between the modeling and simulation community and the C4I community. Award contract to develop a Modeling & Simulation data model to align the Army's integrated core data model.

Total 7384

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION</b>	PROJECT <b>C74</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA3, KA6000, Reconfigurable Simulators	2398	2309	365	0	0	0	0	0	0	0
OMA, 121014, C4I Simulation Interoperability/Army Modeling Simulation Support Facility	2836	2750	2071	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Competitive development leading to competitive procurement against performance specifications

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Integration, Installation Desktop Aviation systems		2Q		0	0	0	0	0
Integration, Installation Dismounted Infantry systems		1Q		0	0	0	0	0
ACRT Contract Award		2Q	1Q	0	0	0	0	0
C4I Interoperability Contract Award			1Q	0	0	0	0	0
Integration, Installation Ground systems		2Q		0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION</b>	<b>PROJECT</b> <b>C74</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ACRT Modify Integrate Existing Simulators	C/CPAF	TBD	0	2914	2Q	4267	1Q	0	0	0	0	Continue
b . C4I Interoperability	C/CPAF	TBD	0	0		2640	1Q	0	0	0	0	Continue
<b>Subtotal:</b>			0	2914		6907		0		0	0	Continue

Remarks: Each award is Delivery Order (DO) against CPAF.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal:</b>			0	0		0		0		0	0	0

Remarks: Not Applicable

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604760A - DISTRIBUTIVE INTERACTIVE**  
**SIMULATION**

**PROJECT**  
**C74**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	Multiple	Various	0	399	1Q	477	1Q	0	0	0	0	0
Subtotal:			0	399		477		0		0	0	0

Remarks: Not Applicable.

Project Total Cost:			0	3313		7384		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION</b>				PROJECT <b>C77</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C77 INTERACTIVE SIMULATION	4168	1041	2239	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Project C77 - Interactive Simulation: This project focuses on engineering development of techniques and Distributed Simulation technology [e.g. Higher Level Architecture (HLA)] of wide area simulation networking in support of modeling and simulation, doctrinal development, training, and operations, utilizing live, virtual and constructive simulations. Development also supports related simulations and simulator efforts, including the Advanced Concepts Research Tools (ACRT).

In FY02 the project supports the development of the Environmental Data Base (EDB) for rapid extraction of terrain and environmental data at the user level.

This project supports Interim and Objective transition paths of the Transformation Campaign Plan (TCP).  
(NOTE: ACRT was transferred from C77 to C74 in FY01)

**FY 2000 Accomplishments**

- 3105 Completed contract modification to integrate additional full fidelity and desktop Advanced Concepts Research Tools (ACRT) at TRADOC's Battlelabs.
- 391 Developed and managed the Advanced Simulation Program to achieve Army-wide modeling and simulation infrastructure objectives.
- 672 Continued development of High Level Architecture technology and tools to support Simulation Object Modeling, Federation Object Model development and federation exercise management, data collection and after action review, and HLA compliance tools.

Total 4168



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BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604760A - DISTRIBUTIVE INTERACTIVE  
SIMULATION**

PROJECT

**C77**

## FY 2001 Planned Program

- 390 Continue development and management of the Advanced Simulation Program to achieve Army-wide modeling and simulation infrastructure objectives.
- 633 Continue development of High Level Architecture technology and tools to support Simulation Object Modeling, Federation Object Model development and federation exercise management, data collection and after action review, and HLA compliance tools.
- 18 Small Business Innovative Research (SBIR)/Small Business Technology Transfer Program (STTR).

Total 1041

## FY 2002 Planned Program

- 2239 Develop Environmental Data Base (EDB) to support rapid extraction of terrain and environmental data at user level.

Total 2239

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BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION</b>	PROJECT <b>C77</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA3, KA6000, Reconfigurable Simulators	2398	2309	365	0	0	0	0	0	0	0
OMA, 121014, TBIS	3985	4002	4702	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Competitive development leading to competitive procurement against performance specifications.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Advanced Distributed Simulation Technology II Delivery Order Contract Awarded	3Q			0	0	0	0	0
SNE Tools Development Award			1Q	0	0	0	0	0
HLA Tool Development		1Q		0	0	0	0	0

FY00 Milestone completed.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION</b>	<b>PROJECT</b> <b>C77</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ACRT Development and Integration	C/CPAF	Various	5766	0		0		0	0	0	0	0
b . HLA Tool Development	Multiple	Various	4483	473	1Q	0		0	0	0	0	0
c . SNE Tools Development	TBD	TBD	0	0		1240	1Q	0	0	0	0	Continue
Subtotal:			10249	473		1240		0		0	0	Continue

Remarks: Battlelab Reconfigurable Simulator Program replaced by ACRT.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604760A - DISTRIBUTIVE INTERACTIVE**  
**SIMULATION**

**PROJECT**  
**C77**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . HLA Tools program mgt	Multiple	Various	419	160	1Q	0		0	0	0	0	0
b . ASP PM Management	Multiple	Various	391	408	1Q	0		0	0	0	0	0
c . SNE Tools	Multiple	Various	0	0		999	1Q	0	0	0	0	Continue
Subtotal:			810	568		999		0		0	0	Continue

<b>Project Total Cost:</b>			11059	1041		2239		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION</b>				PROJECT <b>C78</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C78    COMPUTER GENERATED FORCES	2498	15041	14598	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project develops software systems to realistically represent activities of units and forces in simulation. This representation is used to support concept evaluation, experimentation, materiel acquisition and training communities. Initiatives include the systems engineering and design for improvements to the architecture and interoperability of Army SAFs, and the evolution to an Army universal computer generated forces system, OneSAF. This evolutionary approach includes development of OneSAF Testbed (OTB) to iteratively upgrade existing SAF capability, while concurrently developing OneSAF. This will provide the various Army domains with an interim SAF to utilize until development of OneSAF is complete. OneSAF is a next generation SAF that will represent a full range of operations, systems and control processes for support of training research, development and acquisition simulation applications including human-in-the-loop. OneSAF is uniquely postured to support the constructive training challenges presented by transformation. Current initiatives include the Joint Virtual Battlefield (JVB), with OTB at the core, which allows tactics and doctrine development for the Future Combat System (FCS) from concept (today) through fielding (2010 and beyond).

The FY02 program will continue development of the functionality to provide OneSAF with terrain, editing and data collection tools, and infrastructure as well as continue the development of life cycle applications and infrastructure enhancements for OneSAF version 1.0.

This project supports the Interim and Objective transition paths of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 1373        Completed management planning and acquisition efforts for award of the OneSAF system development Task Order contracts.
  - 626        Completed development of OTB software Builds B and C and released OneSAF Testbed (OTB) Version 1.0A (Beta Test) for initial use and evaluation.
  - 499        Initiated development of OTB build D.
- Total    2498

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604760A - DISTRIBUTIVE INTERACTIVE  
SIMULATION**

PROJECT

**C78**

## FY 2001 Planned Program

- 13661 Develop software functionality to provide OneSAF with terrain, editing and data collection tools and infrastructure.
- 951 Verification and validation of newly developed and integrated software.
- 429 Small Business Innovative Research (SBIR)/Small Business Technology Transfer Program (STTR).

Total 15041

## FY 2002 Planned Program

- 10120 Continue development of functionality to provide OneSAF with terrain, editing and data collection tools and infrastructure.
- 2050 Continue development of life cycle applications and infrastructure enhancements for OneSAF Version 1.0.
- 1369 Develop functionality to represent behaviors, physical models, and communication models for OneSAF.
- 1059 Verification & Validation of newly developed and integrated software.

Total 14598

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION</b>	PROJECT <b>C78</b>
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<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OMA, 121014	500	497	1561	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Development based on performance specifications via multiple Task Orders on competitively selected contracts.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Release OneSAF Testbed (OTB) Version 1.0		1Q		0	0	0	0	0
Release OTB Version 2.0			1Q	0	0	0	0	0
Award OneSAF Development Task Orders for individual components to meet block requirement	1Q	1Q	1Q	0	0	0	0	0
OneSAF IOC				0	0	0	0	0

FY00 Milestones Completed.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604760A - DISTRIBUTIVE INTERACTIVE**  
**SIMULATION**

**PROJECT**  
**C78**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Architecture Dev & System Integration	CPFF	Various/TBD	0	6250	2-3Q	6500	1-2Q	0	0	0	0	0
b . Integrated Environment Dev	CPFF	Advanced Systems Technology, Inc., Orlando FL	0	2003	2Q	1000	1-2Q	0	0	0	0	Continue
c . Synthetic Environment Dev	CPFF	Science Applications International Corp, Orlando, FL	0	1196	1-2Q	1000	1Q	0	0	0	0	Continue
d . Knowledge Acquisition/Knowledge Engineering	CPFF	Aegis Technologies Group, Huntsville, AL	0	1156	2-3Q	869	1-2Q	0	0	0	0	0
e . OneSAF System Development	C/CPFF	Various/TBD	758	1248	1-2Q	1050	1-2Q	0	0	0	0	Continue
f . OneSAF Testbed	C/CPAF	Lockheed-Martin Inc., Orlando, FL	7012	0		0		0	0	0	0	0
g . Model Development	C/CPFF	Various/TBD	0	0		500	1Q	0	0	0	0	Continue
Subtotal:			7770	11853		10919		0		0	0	Continue

Remarks: New Competitive Contract for OneSAF Development. Each award is DO against CPFF contract.



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604760A - DISTRIBUTIVE INTERACTIVE SIMULATION</b>	<b>PROJECT</b> <b>C78</b>
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Analysis	Various	Multiple	745	470	1Q	685	1Q	0	0	0	0	Continue
b . Domain Analysis	Various	Multiple	0	915	1-3Q	915	1-3Q	0	0	0	0	Continue
c . Architecture Engr & Tech Spt	C/CPFF	MITRE FFRDC	652	238	1Q	250	1Q	0	0	0	0	Continue
<b>Subtotal:</b>			1397	1623		1850		0		0	0	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . OTB Verification & Validation	Various	Multiple	478	0		0		0	0	0	0	0
b . OneSAF integration, evaluation and test	C/CPAF	TBD	0	207	1-2Q	400	1-2Q	0	0	0	0	Continue
c . OneSAF Verification, Validation & Accreditation	Various	Multiple	0	166	1-2Q	659	1-2Q	0	0	0	0	Continue
<b>Subtotal:</b>			478	373		1059		0		0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604760A - DISTRIBUTIVE INTERACTIVE**  
**SIMULATION**

**PROJECT**  
**C78**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program management	Various	Multiple	1022	1192	1Q	770	1Q	0	0	0	0	Continue
Subtotal:			1022	1192		770		0		0	0	Continue
<b>Project Total Cost:</b>			10667	15041		14598		0		0	0	Continue

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604766A - Tactical Exploitation System/DCGS-A (TIARA)**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	71879	57884	68205	0	0	0	0	0	0	0
909 TACTICAL SURVEILLANCE SYSTEMS-ENG DEV(TIARA)	71879	43104	0	0	0	0	0	0	0	0
957 TACTICAL EXPLOITATION SYSTEM (TES)/DCGS-A (TIARA)	0	14780	68205	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This project supports the engineering development/enhancement of the Tactical Exploitation System (TES), Division TES (DTES), TES Light (TES-L), Distributed Common Ground Station -Army (DCGS-A), Advanced Electronic Processing Dissemination System (AEPDS) Mobile Integrated Tactical Terminal (MITT), and Forward Area Support Terminal (FAST). TES and DCGS-A will incorporate the standards and protocols dictated by the Common Imagery Ground/Surface System (CIG/SS) program. TES brings all of the existing and emerging capabilities Advanced Electronic Processing Dissemination System (AEPDS), Modernized Imagery Exploitation System (MIES) and Enhanced Tactical Radar Correlator (ETRAC) into an integrated common baseline that is downsized, modular and scaleable to meet a wide range of contingency requirements. TES interfaces with numerous satellite and aircraft tactical sensors and processes and exploits their data, imagery, and information. TES provides the commander with maximum flexibility to satisfy intelligence needs under a wide range of operational scenarios. TES operators can perform multiple imagery Intelligence (IMINT), Signal Intelligence (SIGINT), cross-intelligence, or dissemination functions from any workstation. TES provides extensive communication capabilities, including UHF, S,X,C and Ku radio frequency band communications. TES interfaces with and serves as the preprocessor for the All Source Analysis (ASAS), Common Ground Station (CGS), and the Digital Topographical Support System (DTSS). TENCAP Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to multiple TENCAP systems. DCGS-A will incorporate the capabilities of TES, Guardrail/Information Node (GR/IFN), and Common Ground Station (CGS). TES and DCGS-A will incorporate emerging theater and national Intelligence, Surveillance, and Reconnaissance (ISR) capabilities. MIES, ETRAC, and the CIG/SS portion of TES are funded under PE 0305208A. Specific details are provided in the Tactical Intelligence and Related Activities (TIARA) Congressional Budget Justification Book and the Joint Military Intelligence Programs (JMIP) Congressional Budget Justification Book. These systems support the Legacy to Objective transition path of the Transformation Campaign Plan.

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**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604766A - Tactical Exploitation System/DCGS-A (TIARA)**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	71879	57419	76674	0
Appropriated Value	72440	58419	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	0	0	0	
c. Omnibus or Other Above Threshold Reductions	-298	0	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	-263	-535	0	
Adjustments to Budget Years Since FY2001 PB	0	0	-8469	
Current Budget Submit (FY 2002/2003 PB )	71879	57884	68205	0

Per Congressional recommendation, a new PE (0603766A, Tactical Support Development) was created to fund those advanced developmental efforts that leverage national and theater technology. Funds were transferred from PE 0604766 to PE 0603766 in FY02 and out.

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<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>			<b>PE NUMBER AND TITLE</b> <b>0604766A - Tactical Exploitation System/DCGS-A</b> <b>(TIARA)</b>					<b>PROJECT</b> <b>957</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
957 TACTICAL EXPLOITATION SYSTEM (TES)/DCGS-A (TIARA)	0	14780	68205	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project supports the engineering development/enhancement of the Tactical Exploitation System (TES), Division TES (DTES), TES Light (TES-L), and Distributed Common Ground Station -Army (DCGS-A). TES interfaces with numerous satellite and aircraft tactical sensors and processes and exploits their data, imagery, and information. TES provides the commander with maximum flexibility to satisfy intelligence needs under a wide range of operational scenarios. TES operators can perform multiple imagery Intelligence (IMINT), Signal Intelligence (SIGINT), cross-intelligence, or dissemination functions from any workstation. TES provides extensive communication capabilities, including UHF, S,X,C and Ku radio frequency band communications. TES interfaces with and serves as the preprocessor for the All Source Analysis (ASAS), Common Ground Station (CGS), and the Digital Topographical Support System (DTSS). TES incorporates the standards and protocols dictated by the Common Imagery Ground/Surface System (CIG/SS) program. TES brings all of the existing and emerging capabilities Advanced Electronic Processing Dissemination System (AEPDS), Modernized Imagery Exploitation System (MIES) and Enhanced Tactical Radar Correlator (ETRAC) into an integrated common baseline that is downsized, modular and scaleable to meet a wide range of contingency requirements. DCGS-A will incorporate the capabilities of TES, Guardrail/Information Node (GR/IFN), and Common Ground Station (CGS). TES and DCGS-A will incorporate emerging theater and national Intelligence, Surveillance, and Reconnaissance (ISR) capabilities. These systems support the Legacy to Objective transition path of the Transformation Campaign Plan. CIG/SS portion of TES are funded under PE 0305208A. Specific details are provided in the Tactical Intelligence and Related Activities (TIARA) Congressional Budget Justification Book and the Joint Military Intelligence Programs (JMIP) Congressional Budget Justification Book.

ASPO program management support costs for these efforts are funded under PE 0603766 Project D907 in FY02 and out.

**FY 2000 Accomplishments**

Effort is funded under project D909 of this PE in FY 2000.

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BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604766A - Tactical Exploitation System/DCGS-A  
(TIARA)**

PROJECT

**957**

## FY 2001 Planned Program

- 750 Provide program management support and upgrades to Semi Automated Imagery Processor (SAIP) activities. This effort was funded under Project D909 in FY 2000.
- 2360 Initiate development of SAIP miniaturization prototype.
- 2544 Complete engineering development of TES #2 Forward and Main, including integration of existing reusable components (i.e. MIDAS, DE, CIP, MIST) and the purchase and integration of COTs/GOTs GFE. This effort was funded under Project D909 in FY 2000.
- 9126 Continue engineering development of TES #3 Forward and Main, including integration of existing reusable components (i.e. MIDAS, DE, CIP, MIST) and the purchase and integration of COTs/GOTs GFE. This effort was funded under Project D909 in FY 2000.

Total 14780

## FY 2002 Planned Program

- 11850 Ensures that TES has joint interoperability with current and future sensors (Global Hawk, Future Imagery Architecture).
- 9572 Complete engineering development of TES #3 Forward and Main, including integration of existing reusable components (i.e. MIDAS, DE, CIP, MIST) and the purchase and integration of COTs/GOTs GFE. This effort was funded under Project D909 in FY 2000.
- 10664 Initiate engineering development of TES #4 Forward, including integration of existing reusable components (i.e. MIDAS) and the purchase and integration of COTs/GOTs GFE.
- 11203 Initiate engineering development of TES #5 Forward, including integration of existing reusable components (i.e. MIDAS) and the purchase and integration of COTs/GOTs GFE.
- 4500 Continue development of miniturized SAIP prototype.
- 4876 Initiate engineering development of TES Basic for Corps and EAC not receiving a TES-Main.
- 9488 Continue software upgrades and enhancements of TES baseline to fully exploit national and theater capabilities.
- 3746 Continue support to TES/DCGS-A development (Army Topographic Engineering Center (TEC) and FFRDC (Aerospace)).
- 2306 TES-Light prototype development

Total 68205

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**0604766A - Tactical Exploitation System/DCGS-A  
(TIARA)**

PROJECT  
**957**

<b>B. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PE 0603766A Project D907	0	0	16749	0	0	0	0	0	0	0
PE 0604766A TENCAP Project D909 (TIARA)	71879	43087	0	0	0	0	0	0	0	0
PE 0305208A (JMIP)	8004	7839	8242	0	0	0	0	0	0	0
Other Procurement Army, OPA-2	0	0	0	0	0	0	0	0	0	0
BZ7315 TENCAP (TIARA)	4351	12735	0	0	0	0	0	0	0	0
BZ7316 CIG/SS (JMIP)	2779	2807	2611	0	0	0	0	0	0	0
BZ7317 Tactical Surveillance System (TIARA)	0	0	26168	0	0	0	0	0	0	0

**C. Acquisition Strategy:** As pioneers in streamlined acquisition, ASPO's success in delivering systems as those described above to warfighters can be directly attributed to an environment emphasizing stable funding, low density acquisition, minimal use of MILSPECS, and managed competition. By tailoring existing technology, leveraging the best commercial practices and using commercial and government-off the shelf software, ASPO minimizes risk while maximizing efficiency. Finally, Government and contractor personnel and facilities accomplish dedicated cradle to grave Integrated Logistics Support (ILS) for all systems through a coordinated effort.

<b>D. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete development of TES #2 Forward, Main (-)		4Q		0	0	0	0	0
Complete development of TES #3 Main (-)		4Q		0	0	0	0	0
Complete development of TES #3 Forward			4Q	0	0	0	0	0
Complete development of TES-Light prototype			4Q	0	0	0	0	0
Complete development of TES #4 Forward				0	0	0	0	0
Complete development of TES #5 Forward				0	0	0	0	0
Complete development of TES BASIC #1				0	0	0	0	0
Complete development of TES Basic #2-#4				0	0	0	0	0
Complete development of TES #6 Forward				0	0	0	0	0
Complete development of TES #2 MAIN(+)				0	0	0	0	0
Complete development of TES #3 MAIN(+)				0	0	0	0	0

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June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604766A - Tactical Exploitation System/DCGS-A (TIARA)</b>	PROJECT <b>957</b>
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<u>D. Schedule Profile (continued)</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete development of TES Trainer				0	0	0	0	0



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604766A - Tactical Exploitation System/DCGS-A**  
**(TIARA)**

**PROJECT**  
**957**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TES #2 EDM *	SS/CPAF	Northrop Grumman, Linthicum, MD	0	2544	1Q	0		0	0	0	0	0
b . TES #3 EDM *	SS/CPAF	Northrop Grumman, Linthicum, MD	0	9126	2Q	9572	2Q	0	0	0	0	0
c . TES #4 EDM *	SS/CPAF	Northrop Grumman, Linthicum, MD	0	0		10664	2Q	0	0	0	0	0
d . TES #5 EDM *	SS/CPAF	Northrop Grumman, Linthicum, MD	0	0		11203	2Q	0	0	0	0	0
e . TES #6 EDM *	SS/CPAF	Northrop Grumman, Linthicum, MD	0	0		0		0	0	0	0	0
f . TES Basic	SS/CPAF	Northrop Grumman, Linthicum, MD	0	0		4876	2Q	0	0	0	0	0
g . CCRB	SS/CPAF	Northrop Grumman, Linthicum, MD	0	0		9488	2Q	0	0	0	0	0
h . SAIP Prototype	SS/CPAF	Northrop Grumman, Linthicum, MD	0	2360	2Q	4500	2Q	0	0	0	0	0
i . TDL	SS/CPAF	Northrop Grumman, Linthicum, MD	0	0		11850	2Q	0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604766A - Tactical Exploitation System/DCGS-A</b> <b>(TIARA)</b>	<b>PROJECT</b> <b>957</b>
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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . DCGS-A Study	TBD	TBD	0	0		0		0	0	0	0	0
k . TES-L prototype		Northrop Grumman. Linthicum, MD	0	0		2306	2Q	0	0	0	0	0
Subtotal:			0	14030		64459		0		0	0	0

Remarks: \* Effort funded in project D909 prior to FY01.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Engineering (Government)	N/A	TEC, Alexandria, VA	0	400	1Q	2141	1Q	0	0	0	0	Continue
b . Contractor	C/FFP	Litton TASC, Westfields, VA	0	350	2Q	350	2Q	0	0	0	0	Continue
c . FFRDC	OGA	Aerospace Corp, Chantilly, VA	0	0		1255	1Q	0	0	0	0	Continue
Subtotal:			0	750		3746		0		0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604766A - Tactical Exploitation System/DCGS-A (TIARA)</b>	PROJECT <b>957</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			0	14780		68205		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604768A - BAT**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	139899	97203	123899	0	0	0	0	0	0	0
2NT    BAT OPERATIONAL TEST	2096	50	72	0	0	0	0	0	0	0
641    BAT	28055	0	0	0	0	0	0	0	0	0
687    BAT P3I	75294	69820	123827	0	0	0	0	0	0	0
688    ATACMS BLK II	34454	27333	0	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

The Army Tactical Missile System (ATACMS) Block II with the BAT submunition is a Legacy to Objective Force Weapon System and plays a critical role in the Army Transformation. The Objective Force requires the destruction and disruption of threat forces and weapons from ranges of 35-145 kilometers to prevent them from influencing the maneuver battle. In the past, the only options to engage these targets were attack helicopters or fixed wing aircraft. These options place critical resources, particularly air crews, at risk and are limited by inclement weather. The capability of the BAT submunition significantly reduces the risk to rotary and fixed wing platforms and crews through its acquisition and terminal guidance capabilities, and its ability to attack well-defended armored forces, well behind enemy lines in near all-weather conditions. The ATACMS Block II missile system includes the basic BAT submunition, a pre-planned product improvement (P3I) BAT submunition, and the Army Tactical Missile System Block II (ATACMS BLK II) missile. The basic BAT submunition is a dual-sensor (acoustic and infrared) precision guided submunition that autonomously seeks out and destroys moving armored vehicles. Thirteen BAT and BAT P3I submunitions are carried deep into enemy territory by the ATACMS Block II and dispensed over a large target area, selectively attacking and destroying individual targets. The BAT P3I program will provide a new sensor suite (millimeter wave and imaging infrared), which greatly improves inclement weather capability and effectiveness against countermeasures. The P3I BAT submunition will attack time critical high priority targets, including cold, stationary, armored targets, Surface-to-Surface Missile (SSM) Transporter Erector Launchers (TELs), and Heavy Multiple Rocket Launchers (MRLs). P3I BAT will conduct the Limited User Tests (LUTs) in FY 04 with the purchase of missile and submunition hardware in FY 02. The ATACMS BLK II missile is a version of the currently fielded and combat-proven Army TACMS Block I missile and is designed to carry 13 BAT or BAT P3I submunitions. The primary mission of the ATACMS Block II (loaded with BAT or P3I submunitions) is to provide the Army's Objective Force and Joint Forces with a deep strike capability to delay, disrupt, neutralize, or destroy armored combat vehicles/organization. The ATACMS Block II missile is fired from the M270A1 launcher and the High Mobility Artillery Rocket System (HIMARS). The HIMARS is a Legacy to Objective Force Weapons System. The ATACMS Block II missile system with BAT and P3I BAT supports the Legacy to Objective Force transition path of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604768A - BAT**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	142753	96102	58392	0
Appropriated Value	144026	98102	0	
Adjustments to Appropriated Value		0	0	
a. Congressional General Reductions		0	0	
b. SBIR / STTR	-3844	0	0	
c. Omnibus or Other Above Threshold Reductions	-590	0	0	
d. Below Threshold Reprogramming	-2740	0	0	
e. Rescissions	-683	-899	0	
Adjustments to Budget Years Since FY2001 PB		0	65507	
Current Budget Submit (FY 2002/2003 PB )	136169	97203	123899	0

**Change Summary Explanation:**

FY02/03: Increase to BAT P3I for Heavy Multiple Rocket Launcher/Transporter Erector Launcher (MRL/TEL) Initiatives.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604768A - BAT</b>					PROJECT <b>687</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
687     BAT P3I	75294	69820	123827	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The BAT P3I is the submunition in the ATACMS Block II missile system, a Legacy to the Objective Force Weapon System supporting the Army Transformation. The P3I BAT submunition maintains basic BAT length, diameter, and weight configurations. The P3I BAT provides increased capability in inclement weather conditions and against countermeasured targets. The P3I BAT expands the target set and overcomes large target location error. The P3I BAT program will incorporate new seeker and microprocessor technologies while maintaining the current form, fit, and maximum commonality of components. This program includes studies/demonstrations pertaining to technology advancements, target recognition, and acoustic/infrared/millimeter wave characterizations of expanded target sets. The BAT P3I is a multi-sensored, terminally-guided submunition that searches, tracks, and destroys specific targets including mobile armored combat vehicles, cold stationary armored combat vehicles, Surface-to-Surface Missile (SSM) Transporter Erector Launchers (TELS), and Heavy Multiple Rocket Launchers (MRLs). P3I BAT will conduct Limited User Tests (LUTs) in FY 04 to support a continued production decision in 2nd Quarter FY 05. Hardware purchase for six missiles with 13 P3I BATs for this test will occur in FY 02. The ATACMS Block II with P3I BAT has a very low operation and sustainment cost. The primary mission of the ATACMS BLK II (loaded with the P3I submunition) is to provide the Army's Objective Force and Joint Forces with a precision strike capability to delay, disrupt, neutralize, or destroy armored combat vehicles and TELs/MRLs. The ATACMS Block II missile is fired from the M270A1 launcher and the High Mobility Artillery Rocket system (HIMARS). The HIMARS is also a Legacy to Objective Force Weapon System. The ATACMS Block II missile with P3I BAT supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 29599     Continued P3I BAT Seeker Development and Design
- 18213     Conducted CFTs and Recoverable Flight Tests
- 17900     Started Fabrication of Engineering Test Hardware (47 Submunitions with Seekers and 19 Seeker Stand Alone Test Articles)
- 2000     Conducted Seeker Simulant Validation Test
- 3500     Continued Hardware-in-the-Loop Operations
- 3500     Simulation Analysis and Modeling
- 582     Missile Carrier Integration

Total 75294

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)****June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604768A - BAT**

PROJECT

**687****FY 2001 Planned Program**

- 31017 Continue Seeker Integration and Armor Design Analysis
- 14200 Fabricate and Assemble P3I BAT Test Hardware (47 Submunitions with Seekers and 19 Seeker Stand Alone Test Articles)
- 14277 Conduct Recoverable Flight Test II, CFT, and Engineering Development Test
- 8000 Continue Simulation Analysis to include Hardware-in-the-Loop and Software Integration Lab
- 2076 Small Business Innovation Research/Small Business Technology Transfer Programs
- 250 Trade Studies, CAIV Initiatives, Risk Reduction and System Improvement and Optimization Activities

Total 69820

**FY 2002 Planned Program**

- 42288 Complete Seeker Integration and Armor Design Analysis
- 11849 Initiate MRL/TEL Engineering Design Analysis
- 38902 Develop Items for Submunition, DT Testing, and LUT testing (103 Submunitions with Seekers, 4 Seeker Stand Alone Test Articles and 7 Block II Missile Hardware Kits)
- 23430 Conduct Recoverable Flight Test III, DVT, PPT, Missile Developmental Test and Recoverable Flight Test IV
- 6858 Simulation Analysis to include Hardware-In-Loop and Software Integration Lab
- 500 Trade Studies, CAIV Initiatives, Risk Reduction and System Improvement and Optimization Activities

Total 123827

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604768A - BAT</b>	PROJECT <b>687</b>
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<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Missile Procurement, Army CA6101 ARMY TACMS BLK II	229051	213359	61000	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The BAT P3I system employs a sole source contract with the prime contractor, Northrop Grumman Corporation. Production cut-in of BAT P3I onto the ATACMS Block II will provide capability against moving and stationary armored targets.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Captive Flight Test (CFT)	1-3Q	2Q		0	0	0	0	0
Continuous CFT (Seeker Tests)	1-3Q	1-4Q		0	0	0	0	0
Warhead Testing	1-2Q			0	0	0	0	0
Continue Dual Mode Radar Seeker Design	1-4Q	1-4Q		0	0	0	0	0
Hardware-in-the-Loop Testing	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Tactical Prototype Seeker Integration	2-4Q	1-4Q	1Q	0	0	0	0	0
Recoverable BAT Tests	2-3Q	3-4Q	1-4Q	0	0	0	0	0
Engineering Development Tests (EDTs)			1Q	0	0	0	0	0
Design Verification Tests			1-2Q	0	0	0	0	0
Pre-Production Tests (PPTs)			2Q	0	0	0	0	0
Warhead Delta LFT&E Hard/Target				0	0	0	0	0
Warhead LFT&E Soft/Target				0	0	0	0	0
Software CDR			2Q	0	0	0	0	0
Envir Stress Test (EST) Prod Qual Tests (PQT)			1-2Q	0	0	0	0	0
DT System Tests (Block II)			3Q	0	0	0	0	0
Blk II/P3I BAT Production Cut-In Decision			3Q	0	0	0	0	0
Blk II/P3I BAT Limited User Tests (LUTs)-Armor				0	0	0	0	0
MRL/TEL LUTs				0	0	0	0	0
Blk II/P3I BAT Continued Production Decision				0	0	0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604768A - BAT**

**PROJECT**  
**687**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Northrop Grumman Corp	SS-CPIF		189214	47535		79917		0	0	0	0	0
b . RDEC Support*	PO		17644	3057		2698		0	0	0	0	0
c . TRW	SS-CPIF		2849	0		0		0	0	0	0	0
d . Lockheed	SS-CPIF		582	1550		8690		0	0	0	0	0
e . MLRS Launcher Pool	SS-CPIF		0	0		0		0	0	0	0	0
Subtotal:			210289	52142		91305		0		0	0	0

Remarks: \*Includes Hardware-in-the Loop costs

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Sys Eng Tech Assist & Program Mgmt Spt	SS-CPFF		5020	1234		1400		0	0	0	0	0
b . Misc Other Gov Act	PO		3284	236		125		0	0	0	0	0
Subtotal:			8304	1470		1525		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604768A - BAT</b>	<b>PROJECT</b> <b>687</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Range Support	PO		1376	6750		8040		0	0	0	0	0
b . Other Test Activities	PO		14315	6080		18216		0	0	0	0	0
Subtotal:			15691	12830		26256		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support	PO		9878	3378		4741		0	0	0	0	0
Subtotal:			9878	3378		4741		0		0	0	0

<b>Project Total Cost:</b>			244162	69820		123827		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>			<b>PE NUMBER AND TITLE</b> <b>0604770A - Joint Surveillance and Target Attack Radar Sys</b>					<b>PROJECT</b> <b>202</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
202 ARMY COMMON GROUND STATION (CGS) (TIARA)	25676	28632	8093	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

The Common Ground Station (CGS) is a rapidly deployable and mobile tactical sensor data processing and dissemination center mounted on 2 High Mobility Multi-Wheeled Vehicles (HMMWVs). CGS integrates imagery and signals Intelligence Surveillance and Reconnaissance (ISR) data products into a single visual presentation of the battlefield, providing commanders at EAC, Corps, Divisions and Brigades with Near Real Time (NRT) situational awareness, enhanced battle management and targeting capabilities. CGS initially served as the ground station for the Joint Surveillance Target Attack Radar System (Joint STARS), but has evolved into a multi-sensor ground station that receives, processes and displays sensor data from Predator, Tactical UAV (TUAV), Airborne Reconnaissance Low (ARL), U2, Guardrail/Common Sensor (GRCS) and Integrated Broadcast Service (IBS) while preserving a small tactical footprint. CGS is the Army's premier radar Moving Target Indicator (MTI) ground station, receiving MTI data from Joint STARS, ARL and U2 sensors. Additionally, CGS receives, processes and cross cues data to include SAR, EO/IR, video and Signals Intelligence (SIGINT). CGS disseminates timely targeting and battlefield surveillance data to Army Battle Command System (ABCS) nodes such as the All Source Analysis System (ASAS) and Army Field Artillery Tactical Data System (AFATDS). A robust, self-contained communications suite insures connectivity with both sensors and command and control nodes under a wide range of battlefield scenarios and conditions. As part of the Future Digitized Division (FDD), CGS provides a key interface between intelligence and command and control systems by concurrently providing timely intelligence data and receiving the Common Tactical Picture (CTP) via the Tactical Operations Center (TOC) LAN. CGS contains a robust modeling and simulation capability that supports linkage to sensor simulations, system-of-systems training and participation in a wide range of exercises on a worldwide basis. The Joint Services Workstation (JSWS) is a single operator, transportable, reduced footprint, dismounted workstation variant of the CGS. The JSWS uses the same hardware and software and provides the same functionality as the CGS. The CGS/JSWS with its Joint STARS and other sensor feeds, fulfills an urgent air-land battlefield requirement by providing an Army/Air Force sensor and attack control capability to locate, track, classify and assist in attacking moving and stationary targets beyond the Forward Line of Troops (FLOT). The CGS/JSWS has repeatedly provided high value targeting and intelligence data to Field Commanders during contingencies (e.g. Operation Joint Endeavor), as well as during standard mission operations of fielded units. The CGS acquisition approach is predicated on a Spiral Development that leverages commercial technological advances. New Capabilities initiated and/or implemented in FY03 and beyond include: architecture upgrades to facilitate dissemination of CGS products to command and control systems located across multiple echelons, and expansion of modeling and simulation capabilities to support in unit and staff training, operational testing of the CGS in a virtual battle space environment. Planned CGS enhancements also include the integration of high-speed data link connectivity with the Predator UAV and tactical UAV, resulting in a decreased overall TOC footprint IAW CSA Transformation Strategy Initiative. Migration of CGS capability into a DCGS-A network centric environment will begin with improving connectivity of CGS with the Tactical Exploitation System (TES) and Guardrail Information Node (GRIFN) legacy systems to increase data sharing at the product library/database level. The next step will develop an early objective capability based on legacy hardware that would improve

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604770A - Joint Surveillance and Target Attack  
Radar Sys**

PROJECT

**202**

information transfer and visualization/collaboration.

The long-term objective capability is a modular/scalable network centric design utilizing objective hardware that integrates signal, imagery, and other intelligence processing into a common ground station. Spiral development will address the upgrade of existing CGS data links, CGS software and ADP suite to receive and process the increased intelligence data generated by the JSTARS Radar Technology Improvement Program (RTIP), Aerial Common Sensor (ACS) and other sensors. The radar enhancements and associated modifications to the Joint STARS air platform are fully funded within the USAF RDT&E PE 060440F. The CGS/JSWS is an integral component to the Brigade Combat Teams. This system supports the legacy transition path of the Transformation Campaign Plan. (TCP)

## **FY 2000 Accomplishments**

- 1788 Integration of the Tactical Control Data Link (TCDL) with Airborne Reconnaissance Low (ARL) System.
- 12001 Development of Joint Services Wide Band Data Link / Surveillance Control Data Link (SCDL) Improvement/Risk Reduction Effort as principal data link to the Air Force E8 Aircraft.
- 11887 Block 20 Pre-Planned Product Improvement (P3I) (System High Accreditation, Joint Common Database, MTI/Track Overlay, and Virtual STARS Capabilities).

Total 25676

## **FY 2001 Planned Program**

- 3235 Develop the interfaces and software modifications that support Common Ground Station (CGS) Interoperability with Tactical Exploitation System (TES), Guardrail Information Node (GRIFIN) and participate in DCGS-A working Groups.
- 2936 Joint Service Work Station (JSWS) Battle Lab Hardware and Support.
- 905 Coalition Aerial Surveillance and Reconnaissance (CEASAR) Support.
- 3970 Limited User Test for Block 10 Pre-Planned Product Improvement to CGS V(2).
- 4702 Develop and Support Enhanced CGS Interoperability Capability for Division Capstone Exercise I and II.
- 7000 Commercial-Off-The-Shelf (COTS) Technology Insertion for the CGS technology relative to modeling & simulation, Open Wings/MTI, Digitization, Visualization and Collaborative Tools.
- 4000 Complete Phase 3 of the SCDL System Improvement Program (SIP 3) to include UAV connectivity.
- 1884 Integration of SATCOM higher data rate.

Total 28632

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604770A - Joint Surveillance and Target Attack Radar Sys</b>	PROJECT <b>202</b>
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**FY 2002 Planned Program**

- 2655 Conduct integration and enhance CGS Collaboration/Data sharing with other tactical processing nodes located on the digital TOC LAN and across Battlefield echelons
  - 2272 Expand Modeling & Simulation capabilities to include staff operation and multiple system exploitation via network environment.
  - 995 Coalition Aerial Surveillance and Reconnaissance (CEASAR) Support.
  - 1671 Develop Sensor Exploitation, Operator, Visualization and Collaboration tools in coordination with TES, GRIFIN and the evolution of DCGS-A.
  - 500 System High Certification and Accreditation of CGS P3I software
- Total 8093

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	25676	17898	17713	0
Appropriated Value	26035	28898	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-359	-266	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	-9620	0
Current Budget Submit (FY 2002/2003 PB )	25676	28632	8093	0

**Change Summary Explanation:**

FY2002 - Funds were realigned from this project to support other Army higher priority requirements.  
 FY2003 - Funds were realigned from this project to support other Army higher priority requirements.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604770A - Joint Surveillance and Target Attack Radar Sys</b>	PROJECT <b>202</b>
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<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
BA1080 Joint STARS (TIARA)	94840	65805	21304	0	0	0	0	0	0	0
BS9724 Joint STARS Spares	5434	6122	4361	0	0	0	0	0	0	0
1001018A NATO AGS C35	200	500	2109	0	0	0	0	0	0	0

**C. Other Program Funding Summary:** The Joint STARS Program is also related to Air Force PE 060477

**D. Acquisition Strategy:** The Milestone III approval for Common Ground Station (CGS) was granted by the Defense Acquisition Board in August 2000 and the remaining production quantity was procured in FY01. The baseline CGS is being fielded and is being enhanced via a spiral development approach which improves sensor interfaces, integration into Army Battle Command System (ABCS) networks, networked collaboration and exploitation tools. A block approach to migrate the CGS, Guard Rail Information Node (GRIFN), and Tactical Exploitation System (TES) capabilities into an objective Distributed Common Ground Station Army (DCGS A) is being coordinated with Project Manager Signal Warfare (PM SW) and Army Space Program Office (ASPO.)

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Conduct TCDL Integration Effort and Demonstration	2-4Q			0	0	0	0	0
SCDL Risk Reduction	1-4Q	1-3Q		0	0	0	0	0
Block 20 P3I Program	1-4Q	1-4Q		0	0	0	0	0
Modeling and Simulation	1-4Q	1-4Q		0	0	0	0	0
Block 10 P3I Reliability Growth Test	3Q			0	0	0	0	0
Milestone III	4Q			0	0	0	0	0
DCGS-A Spiral Development		2-4Q	1-4Q	0	0	0	0	0
Demonstrations at Division Capstone Exercises I and II		2-4Q	1Q	0	0	0	0	0
Block 10 Limited User Test (LUT)		3Q		0	0	0	0	0
Sensor Exploitation/Operator Tools Development			1-4Q	0	0	0	0	0
FOT&E for Block 20				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604770A - Joint Surveillance and Target Attack Radar**  
**Sys**

**PROJECT**  
**202**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TC DL	CPFF	Motorola, Scottsdale, AZ	1645	0		0		0	0	0	0	0
b . SCDL/JSWB Data Link Improvement	C/FP	Cubic Corp, San Diego, CA	11641	4500	3Q	0		0	0	0	0	0
c . Sensor Exploitation & Operator Tools/P3I Development	C/FP	Motorola, Scottsdale, AZ	10612	0		2706	1Q	0	0	0	0	Continue
d . Modeling & Simulation	C/FP	Motorola, Scottsdale, AZ	0	830	2Q	1494	1Q	0	0	0	0	Continue
e . JSWS Battle Lab Hardware Support	FFP	Motorola, Scottsdale, AZ	0	2388	1Q	0		0	0	0	0	0
f . Field Support	T&M	Motorola, Scottsdale, AZ	5764	1286	1Q	0		0	0	0	0	0
g . Technology Insertion	FFP	Motorola, Scottsdale, AZ	0	7000	1Q	0		0	0	0	0	0
h . SATCOM Interface	T&M	Motorola, Scottsdale, AZ	0	1487	3Q	1000	1Q	0	0	0	0	Continue
i . Next generation high speed datalink	CPFF	To Be Selected	0	0		0		0	0	0	0	Continue
Subtotal:			29662	17491		5200		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604770A - Joint Surveillance and Target Attack Radar Sys</b>	<b>PROJECT</b> <b>202</b>
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	CECOM	1557	1149	1Q	1099	1Q	0	0	0	0	Continue
b . Joint Test Force Support	MIPR	Various	228	200	1Q	205	1Q	0	0	0	0	Continue
<b>Subtotal:</b>			1785	1349		1304		0		0	0	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Operational Reliability Demonstration Test (ORDT)	MIPR	TEXCOM/OEC	6770	0		0		0	0	0	0	0
b . ORDT	C/T&M	Motorola, Scottsdale, AZ	5387	0		0		0	0	0	0	0
c . Block 10 Limited User Test (LUT) and Preparation	T&M	Motorola, Scottsdale, AZ	0	3970	1-3Q	0		0	0	0	0	0
d . Division Capstone Exercise I & II	CPFF	Motorola, Scottsdale, AZ	0	4202	2-4Q	0		0	0	0	0	0
e . Spiral Developmental Test	T&M	Motorola, Scottsdale, AZ	0	842	1Q	898	1Q	0	0	0	0	Continue



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604770A - Joint Surveillance and Target Attack Radar</b> <b>Sys</b>	<b>PROJECT</b> <b>202</b>
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III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			12157	9014		898		0		0	0	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management		PM, Common Ground Station	2058	778	1Q	691	1Q	0	0	0	0	Continue
Subtotal:			2058	778		691		0		0	0	Continue

<b>Project Total Cost:</b>			45662	28632		8093		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604780A - Combined Arms Tactical Trainer (CATT)**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	37742	18328	13645	0	0	0	0	0	0	0
571 CLOSE CBT TACT TRAINER	20784	7667	5009	0	0	0	0	0	0	0
582 SYNTHETIC ENVIR CORE	6458	10661	8636	0	0	0	0	0	0	0
585 AVIATION COMBINED ARMS TACTICAL TRAINER - WRAP	10500	0	0	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

The Combined Arms Tactical Trainer (CATT) is a family of combined arms simulation systems designed to support the Army's simulation-based Combined Arms Training Strategy. The initial CATT system is the Close Combat Tactical Trainer (CCTT) which provides the underlying baseline (architecture, terrain data bases, after action review [AAR], semi-automated forces [SAF], and models/algorithms) for future CATT expansions, pre-planned product improvements and system enhancements. Synthetic Environment Core provides for the expansion of the Synthetic Environment baseline to include enhanced Aviation, Engineer, Fire Support, and Air Defense capabilities needed to support integration of hardware/simulators funded by System Program Managers. The second CATT system is the Aviation Combined Arms Tactical Trainer - Aviation Reconfigurable Manned Simulator (AVCATT-A) which provides the prototype suite of an Army aviation reconfigurable training system for both active and reserve components. CATT enables units, from crew to the battalion task force level, to conduct a wide variety of combat tasks on a realistic, interactive synthetic battlefield. CATT's combination of manned simulators and staff officer workstations enables units to train as a combined arms team in a cost effective manner. CATT reinforces the successes and corrects the shortcomings of the Simulator Network (SIMNET) and Aviation Network (AIRNET) demonstration programs executed by the Defense Advanced Research Projects Agency (DARPA). By practicing skills in CATT, units are able to make more effective use of scarce resources and costly live fire and maneuver exercises as well as train tasks deemed too hazardous to conduct in the field. Fielded in both fixed site and mobile/transportable versions, CATT enables both Active and Reserve component units to prepare for real world contingency missions. By being able to process a wide array of terrain data bases and modify the behavior of the computer generated opposing forces, CATT offers a virtually unlimited array of training options to support the Army's many regional contingency missions. The combination of tough field and live fire training and realistic simulation training in CATT is the catalyst to prepare soldiers and their leaders for the uncertainties they will face in an unpredictable world. This program line supports the Objective and Legacy to Objective transition paths of the Transformation Campaign Plan (TCP).

FY02 provides Pre-Planned Product Improvements to CCTT components and completion of the Synthetic Environment developments for the AVCATT-A operational requirements. These efforts improve readiness by providing more realistic collective training that will prepare the soldiers for the U.S. Army missions.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604780A - Combined Arms Tactical Trainer (CATT)**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	19775	18498	8881	0
Appropriated Value	19925	18498	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-533	0	0	
c. Omnibus or Other Above Threshold Reductions Inflation	-81	0	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	-69	-170	0	
Adjustments to Budget Years Since FY2001 PB	18500	0	4764	
Current Budget Submit (FY 2002/2003 PB )	37742	18328	13645	0

Change Summary Explanation: Funding - FY 2000: A \$10500K WRAP funding increase was for AVCATT-A and \$8000K funding increase was for CCTT. Funding - FY 2002: An increase of \$4764K is for Comanche, Longbow upgrades to the Semi-Automated Forces, visual models, and control software, and inflation adjustment. Funding - FY 2003: An increase of \$2536K is for continued development of Synthetic Environment Core (SE Core) beyond AVCATT-A and for inflation adjustment.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604780A - Combined Arms Tactical Trainer (CATT)</b>					PROJECT <b>571</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
571 CLOSE CBT TACT TRAINER	20784	7667	5009	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This program provides for engineering and manufacturing development (EMD) and pre-planned product improvements (P3I) for the Close Combat Tactical Trainer (CCTT) which will enhance readiness of both active and reserve component forces. The program develops a networked system of interactive computer driven simulators, emulators and semi-automated forces that replicate combat vehicles and weapon systems, combat support systems, combat service support systems, and command and control systems to create a fully integrated real-time collective task training environment. This trainer will allow soldiers to practice, repetitively, techniques that, if performed on real equipment, would be too hazardous, time-consuming and expensive. These trainers enhance realism and allow soldiers and units to learn tactical combat lessons on maneuver, command and control, and improved teamwork for increased survivability. The pre-planned product improvements provide CCTT an opportunity to enhance its capabilities as a tactical trainer as well as maintain concurrency with the structural changes that today's battleforce is experiencing.

The FY02 funding for the Close Combat Tactical Trainer will provide the U.S. Army with a Dismounted Infantry module which immerses the soldier into the fighting environment and keeps the system concurrent with the fielded weapon systems. This capability provides the soldiers the necessary training to prepare for the missions of the U.S. Army.

This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 9729 Developed Training Support Packages (TSPs) to support structured approach to preparation for training exercises, continued High Level Architecture (HLA) compliance efforts, and began Pre-Planned Product Improvements (P3I) for After Action Reports (AAR) and Dismounted Infantry (DI) components of CCTT and other user prioritized P3I.
- 2415 Developed Korean terrain database.
- 80 Maintained support services to the program office.
- 560 Provided government program management, engineering, technical, contract and continuous operational evaluation support.
- 4957 Integrated Army Battlefield Command System (ABCS) into CCTT to allow training with Army Digital Command and Control Systems.
- 1776 Developed design change of computer operating system to reduce life cycle cost.

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)****June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604780A - Combined Arms Tactical Trainer  
(CATT)**

PROJECT

**571****FY 2000 Accomplishments (Continued)**

- 1267 Developed Bradley Fire Support Team Vehicle modification kit design.

Total 20784

**FY 2001 Planned Program**

- 6719 Develop additional Training Support Packages (TSPs), continue High Level Architecture (HLA) compliance efforts, Pre-Planned Product Improvements (P3I) for After Action Reports (AAR), and Dismounted Infantry (DI) components of CCTT, integration of PC Image Generator, and other user prioritized items.
- 80 Maintain support services to the program office.
- 640 Provide government program management, engineering, technical, contract and continuous operational evaluation support.
- 228 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)

Total 7667

**FY 2002 Planned Program**

- 4509 Begin developments for Second Generation Forward Looking Infrared (GEN II FLIR) sights for tanks and Bradley Fighting Vehicles and tank extended range munition (TERM). Continue development for product improvements for Dismounted Infantry (DI) module, high level architecture (HLA), and other prioritized items.
- 84 Maintain support services to the program office.
- 416 Provide government program management, engineering, technical, contract and continuous operational evaluation support.

Total 5009

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604780A - Combined Arms Tactical Trainer (CATT)</b>	PROJECT <b>571</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA3, Appropriation NA0170 SIMNET/CCTT	63709	41615	36783	0	0	0	0	0	0	0
Operation and Maintenance, Appro. 122015 Support of Oper. Testing (CCTT Portion)	1581	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Competitive cost plus award fee contract for EMD phase. Competitive procurement against performance specifications as part of basic contract.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
P3I Software/Hardware Insertions	4Q	4Q	4Q	0	0	0	0	0
Kosovo Database Delivery	4Q			0	0	0	0	0
Korean Database Development Award	3Q			0	0	0	0	0
Korean Database Delivery			1Q	0	0	0	0	0

FY00 Milestones Completed

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604780A - Combined Arms Tactical Trainer (CATT)**

**PROJECT**  
**571**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CCTT EMD	C/CPAF/T&M/FFP	Lockheed/Martin Orlando, FL	206891	0		0		0	0	0	0	0
b . Pre-Planned Product Improvements (P3I)	C/CP	Lockheed/Martin Orlando, FL	21690	6719	1Q	4509	1Q	0	0	0	0	Continue
c . Database Development	BAA/CPFF	SAIC, Orlando, FL	4415	0		0		0	0	0	0	0
Subtotal:			232996	6719		4509		0		0	0	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering and Technical Support	MIPRs/T&M	Various activities	30318	80	1Q	84	1Q	0	0	0	0	0
Subtotal:			30318	80		84		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604780A - Combined Arms Tactical Trainer (CATT)**

**PROJECT**  
**571**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Office Support	MIPR	STRICOM/NAWC-TSD, Orlando, FL	12054	640		416		0	0	0	0	0
b . STTR/SBIR			0	228		0		0	0	0	0	0
Subtotal:			12054	868		416		0		0	0	0

Project Total Cost:			275368	7667		5009		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604780A - Combined Arms Tactical Trainer (CATT)</b>				PROJECT <b>582</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
582      SYNTHETIC ENVIR CORE	6458	10661	8636	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Synthetic Environment Core (SE Core) provides for the engineering, manufacturing, and development (EMD) enhancements to the Synthetic Environment baseline for virtual training in a Combined Arms Collective environment. The EMD will transform the current heavy force environment to support the transformation to light and medium force for virtual training. The program will provide terrain databases, aviation behaviors, Air Defense capabilities, natural effects (e.g., wind) that enable the Army, specifically the aviation community, to conduct collective training and aviation combined arms training in the virtual environment. SE Core will provide the Semi-Automated Forces (SAF) behaviors to represent the evolving structure, tactics, and procedures of the Army's digitized battlefield. SE Core will provide the additional aviation models to support aviation collective training, and will provide for extended environments to simulate the aviation weapon systems and communication particular to the aviation community. The program will provide for scenario development to support aviation combined arms and collective training and After Action Review of an exercise.

FY02 will complete the Aviation Synthetic Environment engineering design/development supporting the AVCATT-A Operational Requirement Document. This will improve readiness by allowing aviators to "train as they fight" with armor and infantry units on a digitized battlefield.

This system supports the Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 4890      Initiated development of aviation semi-automated forces behaviors, an aviation terrain database, interoperability between aviation and ground simulations, and mission planning and controls for the AVCATT-A system. Initiated refinements to SE Core architecture.
- 1006      Initiated development of an After Action Review capability, training scenarios, and provisions for system High Level Architecture (HLA) compliance. Acquired development hardware to support software development
- 180        Maintained support services to program office.
- 382        Provided government program management, engineering, technical and contract support for the aviation effort and the refinement of the SE Core baseline.

Total    6458

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604780A - Combined Arms Tactical Trainer  
(CATT)**

PROJECT

**582**

## **FY 2001 Planned Program**

- 6808 Continue development of aviation semi-automated forces behaviors, an aviation terrain database, interoperability between aviation and ground simulations, and mission planning and controls for the AVCATT-A system. Development and refinement of SE Core architecture.
- 2900 Continue development of the After Action Review (AAR) capability, training scenarios, and provide for system High Level Architecture (HLA) compliance.
- 200 Maintain support services to program office.
- 436 Provide Government Program management, engineering, technical, and contract support for the aviation effort and the refinement of the SE Core baseline.
- 317 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)

Total 10661

## **FY 2002 Planned Program**

- 7808 Complete development of aviation semi-automated forces (SAF) behaviors, aviation terrain database, interoperability between aviation and ground simulations, and mission planning and controls for the AVCATT-A system. This will include SAF, Battlemaster Control Console and visual model upgrades for the Comanche tactics, techniques and procedures (TTP) tool and Longbow reconfigurable configuration. Complete the aviation refinements of SE Core architecture.
- 628 Provide government program management, engineering, technical, contract, and test support for SE Core refinements.
- 200 Maintain support services and government agency support to program office.

Total 8636

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

**C. Acquisition Strategy:** Engineering Manufacturing & Development (EMD) competitive contract against performance specification.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604780A - Combined Arms Tactical Trainer  
 (CATT)**

PROJECT  
**582**

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Contract Award	1Q			0	0	0	0	0
Software Build 1		3Q		0	0	0	0	0
Software Build 2		4Q		0	0	0	0	0
Software Build 3			1Q	0	0	0	0	0
Software Build 4			2Q	0	0	0	0	0
IOTE			2Q	0	0	0	0	0
Comanche TTP Tool Software Build and Dev. Test			4Q	0	0	0	0	0
Longbow Software Build and Follow-On Test			4Q	0	0	0	0	0

FY00 Milestone Completed

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604780A - Combined Arms Tactical Trainer (CATT)**

**PROJECT**  
**582**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . SE Core	C/CPAF/FPI F/FFP	L-3Com (Raytheon Systems Co.) Arlington, TX	5896	9708	1Q	7808	1Q	0	0	0	0	0
<b>Subtotal:</b>			5896	9708		7808		0		0	0	0

Remarks: Raytheon Systems Co. has sold this part of their company to L-3Com.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering Services & Technical Support	C/FFP/T&M	Madison Research Orlando, FL	180	200	1Q	200	1Q	0	0	0	0	0
<b>Subtotal:</b>			180	200		200		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604780A - Combined Arms Tactical Trainer (CATT)**

**PROJECT**  
**582**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Office Support	MIPR	STRICOM/NAWC-TSD/HRED, Orlando, FL	382	436		628		0	0	0	0	0
b . STTR/SBIR			0	317		0		0	0	0	0	0
Subtotal:			382	753		628		0		0	0	0

<b>Project Total Cost:</b>			6458	10661		8636		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604780A - Combined Arms Tactical Trainer (CATT)</b>					PROJECT <b>585</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
585 AVIATION COMBINED ARMS TACTICAL TRAINER - WRAP	10500	0	0	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Aviation Combined Arms Tactical Trainer-Aviation Reconfigurable Manned Simulator (AVCATT-A) is an Army aviation training system for both the active and reserve components. This engineering, manufacturing, and development (EMD) effort will provide the first prototype suite of AVCATT-A equipment which consists of six (6) reconfigurable networked simulators supporting the AH-64A/D, UH-60A/L, CH-47D, and OH-58D platforms. Supporting roleplayer, semi-automated blue and opposing forces (SAF), and after action review (AAR) workstations are also provided as part of the suite. AVCATT-A will be a fully mobile system, capable of utilizing shore and generator power and is deployable worldwide.

AVCATT-A will permit various aviation units to conduct collective task training on a real-time, computerized battlefield in a combined arms scenario. Other required elements that are present on the modern, high intensity battlefield, such as the combat support and combat service support elements are an integral part of the simulation database. The terrain databases, aviation behaviors, Air Defense capabilities, and natural effects (e.g., wind) will be provided through the Synthetic Environment Baseline developed through the Synthetic Environment Core Program.

AVCATT-A is a key component to the Aviation Combined Arms Training Strategy and is designed to provide realistic, high intensity collective and combined arms training to aviation units. AVCATT-A provides Army aviation units (active, reserve and National Guard) the capability to train as they fight prior to deployment to the field, to prepare for deployment to real world contingencies and to support mission rehearsals in deployment areas.

This system supports the Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 10350 Developed a prototype Aviation Combined Arms Tactical Trainer - Aviation Reconfigurable Manned Simulator (AVCATT-A) and integrated with the Synthetic Environment Baseline.
- 150 Provided government program management office support for the development and integration effort.

Total 10500

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604780A - Combined Arms Tactical Trainer (CATT)</b>	PROJECT <b>585</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA3, Appropriation NA0173 Aviation Combined Arms Tactical Trainer	0	14609	25227	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Engineering Manufacturing & Development (EMD) competitive contract against performance specification.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
AVCATT-A Contract Award	1Q			0	0	0	0	0

FY00 Milestone Completed.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604780A - Combined Arms Tactical Trainer (CATT)**

**PROJECT**  
**585**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604780A - Combined Arms Tactical Trainer (CATT)</b>	PROJECT <b>585</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			0	0		0		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604783A - JOINT NETWORK MANAGEMENT SYSTEM</b>				PROJECT <b>363</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
363 JOINT NETWORK MANAGEMENT SYSTEM	0	0	26130	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE:** This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

The Joint Network Management System (JNMS) is a Commander in Chief (CINC), Commander, Joint Task Forces (CJTF) joint communications planning and management tool. JNMS is an automated software system. It will provide communication planners with a common set of tools to conduct high level planning (war planning), detailed planning and engineering, monitoring, control and reconfiguration, spectrum planning and management, and security of communications and data systems used to support a Joint Task Force (JTF). These systems include circuit switches, data switches, message switches, single channel networks, transmission systems and satellite systems. It will promote force level situational awareness; provide enhanced flexibility to support the commander's intent; improve management of scarce spectrum resources; and provide increased security of these critical systems and networks. JNMS is an outgrowth of the ISYSCON Program. Efforts have been previously funded for FY01 in ISYSCON Program Element/Project 0208010/D107.

This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

PE Begins in FY2002.

**FY 2001 Planned Program**

PE Begins in FY2002. FY2001 funding contained in ISYSCON PE/Proj 0208010/D107.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604783A - JOINT NETWORK MANAGEMENT SYSTEM**

PROJECT  
**363**

**FY 2002 Planned Program**

- 2904 Complete Software Integration for Key Performance Parameters(KPP) Baseline
- 750 Conduct first qualification test (FQT) on KPP Baseline
- 2390 Field, Train and Conduct Initial Operational Test and Evaluation (IOT&E)
- 6160 Continue System Design for Threshold Baseline
- 4250 Continue Concept Requirement and Analysis for Threshold Baseline
- 9676 Software Integration for Threshold Baseline

Total 26130

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	0	0	0	0
Appropriated Value	0	0	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR/STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	0	0	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	26130	0
Current Budget Submit (FY 2002/2003 PB )	0	0	26130	0

FY 02/03: Change Summary Explanation: JNMS PE established since the FY01 President's Budget (FY02 +\$26.0M; FY03 +\$8.0M; plus database adj)

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604783A - JOINT NETWORK MANAGEMENT SYSTEM</b>	PROJECT <b>363</b>
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<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDT&E, PE 0208010, Proj D107, ISYSCON DEV	0	10500	0	0	0	0	0	0	0	0
Other Procurement, Army-2, BX0007, ISYSCON EQUIP	0	0	0	0	0	0	0	0	0	0

**D. Acquisition Strategy:** Obtained Milestone I/II approval 23 August 2000. A competitive contract will be awarded on a best value basis for the development and integration of the JNMS software. Anticipate award April 2001. TRADOC approved ORD on 16 May 00.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Contract Award to begin JNMS Development*		3Q		0	0	0	0	0
Software Integration of Key Performance Parameter (KPP) Software Baseline			1-3Q	0	0	0	0	0
First Qualification Test on KPP Baseline			3Q	0	0	0	0	0
Begin Fielding, Training, Conducting Initial Operational Test & Eval (IOT&E) for KPP Baseline			4Q	0	0	0	0	0
Continue System Design for Threshold Baseline			1-4Q	0	0	0	0	0
Continue Concept Requirement & Analysis for Threshold Baseline			1-4Q	0	0	0	0	0
Software Integration for Threshold Baseline				0	0	0	0	0
Complete IOT&E for KPP Baseline				0	0	0	0	0
Initiate, Design & Integration of 1st Increment Objective Baseline				0	0	0	0	0
Milestone C decision				0	0	0	0	0
Material Release				0	0	0	0	0
First Qualification Test (FQT) for Threshold Baseline				0	0	0	0	0
First Operational Test and Evaluation (FOT&E) Threshold				0	0	0	0	0
FQT Objective Increment 1				0	0	0	0	0
Objective Increment 1 Software Release				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604783A - JOINT NETWORK MANAGEMENT SYSTEM</b>	PROJECT <b>363</b>
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<u>E. Schedule Profile (continued)</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
FQT Objective Increment 2				0	0	0	0	0
Objective Increment 2 Software Release				0	0	0	0	0
FQT Objective Increment 3				0	0	0	0	0
Objective Increment 3 Software Release				0	0	0	0	0
FQT Objective Increment 4				0	0	0	0	0

\* JNMS Development began in ISSCON PE/Proj 0208010/D107 in FY01

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604783A - JOINT NETWORK MANAGEMENT SYSTEM**

**PROJECT**  
**363**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. JNMS Development	CPFF/T&M/FFP	TBD	0	0		22081	3Q	0	0	0	0	0
Subtotal:			0	0		22081		0		0	0	0

Remarks: I.a. FY01 funding for JNMS contained in ISYSCON, PE/Proj 0208010/D107 R-Forms. FY02 funding supports ongoing JNMS Software Development to produce phased products.

CPFF - Cost Plus Fixed Fee  
T&M - Time and Materials

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604783A - JOINT NETWORK MANAGEMENT SYSTEM</b>	<b>PROJECT</b> <b>363</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Support	TBD	TBD	0	0		1565	2Q	0	0	0	0	0
Subtotal:			0	0		1565		0		0	0	0

Remarks: IOT&E Scheduled for 1Q03, FOT&E Scheduled for 1Q04.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Contractor Engineering	TBD	TBD	0	0		1377	1Q	0	0	0	0	0
b . Government Engineering	N/A		0	0		577	1Q	0	0	0	0	0
c . PM Support-Core	N/A		0	0		165	1-4Q	0	0	0	0	0
d . Travel	N/A		0	0		365	1-4Q	0	0	0	0	0
Subtotal:			0	0		2484		0		0	0	0

<b>Project Total Cost:</b>			0	0		26130		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604801A - Aviation Engineering Development</b>					<b>PROJECT</b> <b>C45</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C45 AIRCREW INTEGRATED SYS-ED	13811	11993	2263	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

Aircrew Integrated Systems (ACIS) - Engineering Manufacturing Development (EMD) project provides engineering and manufacturing development for improved aviator safety, survivability, and human performance that amplify the warfighting effectiveness of the Army Transformation aircraft including the RAH-66 Comanche, AH-64 Apache/Longbow, CH-47 Improved Cargo Helicopter, and the UH-60 Black Hawk. These programs include those systems and items of equipment which are unique and necessary for the sustainment, survivability, and performance of Army aircrews and troops on the future integrated battlefield and related training missions. The Air Warrior program will provide the aircrew with a systems approach to chemical and biological (CB) protection, noise protection, microclimatic conditioning, crash and post-crash survivability, concealment and environmental protection, ballistic protection, night vision capability, heads-up display, directed energy eye protection and flame/heat protection. Specifically, Air Warrior will enable the Army Aviation Warfighter to exceed the approved Operational Requirements Document mission length of 5.3 hours, as opposed to the 1.6 hours of mission capability that exists today with aviators in full chemical/biological protective gear. Preplanned block improvements integrating new technologies into the Air Warrior ensemble will continue to enhance and maximize aircrew mission performance, aircrew comfort, aircrew and aircrew station interface, safety and survivability in force modernization aircraft. These funds also resource advanced laser protection against emerging new threat systems and product improvement of existing helmets to improve performance and increased commonality. The Air Warrior program is a vital soldier system, is linked to the Land Warrior program through the Soldier Systems Capstone Requirements document and is one of the Army's 7 core programs for the objective force. The Virtual Retinal Display (VRD) effort develops VRD technology for incorporation into helmet-mounted displays of Army aircrews. Maximum advantage will be taken of simulation to reduce program technical risk through early user evaluation and to reduce program design and test cost and schedules. This project does not duplicate any aircraft platform program efforts. Both joint and service independent efforts continue to be pursued under the scope of this project. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 6569 Continued Air Warrior Engineering Manufacturing Development for basic ensemble and components design
- 6942 Continued Helmet Mounted Display (Virtual Retinal Display) Engineering Manufacturing Development for bi-directional scanning
- 300 Continued Advanced Laser Eye Protection (Joint Service) Engineering Manufacturing Development

Total 13811



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604801A - Aviation Engineering Development**

**PROJECT**  
**C45**

**FY 2001 Planned Program**

- 6861 Continue Air Warrior Engineering Manufacturing Development for the Block I ensemble and components design
- 4803 Continue Helmet Mounted Display (Virtual Retinal Display) Engineering Manufacturing Development to include optical pinch correction for improved image quality
- 329 Small Business Innovative Research and Small Business Technology Transfer

Total 11993

**FY 2002 Planned Program**

- 2263 Continue Air Warrior Engineering Manufacturing Development for the Block I ensemble and components design

Total 2263

**B. Program Change Summary**

	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY01 PB)	13439	7104	2254	0
Appropriated Value	13312	12104	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-328	0	0	0
c. Omnibus or Other Above Threshold Reprogramming	-50	0	0	0
d. Below Threshold Reprogramming	1000	0	0	0
e. Rescissions	-123	-111	0	0
Adjustments to Budget Years Since FY2000/2001 PB	0	0	9	0
Current Budget Submit (FY 2002/2003 PB )	13811	11993	2263	0

Funding FY 2000: \$300 thousand increase to the Advanced Laser Eye Protection for Overseas Contingency Operations and \$700 thousand increase for below threshold reprogramming for Air Warrior and Helmet Mounted Display Engineering manufacturing development. FY 2001: \$5 million Congressional in

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604801A - Aviation Engineering Development**

PROJECT  
**C45**

crease for Advanced Integrated Helmet System Program.

<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE,A PE 0603801A PROJ DB45 - ACIS AD	2864	3963	2677	0	0	0	0	0	0	0
Aircraft Procurement, Army SSN AZ3110 - ACIS	17167	10294	10253	0	0	0	0	0	0	0

**D. Acquisition Strategy:** An Air Warrior Program Definition and Risk Reduction (PDRR) development contract was awarded in FY 1997 to perform a functional requirements analysis and consider user requirements and available technologies to optimize recommended alternatives within the constraints of cost as an independent variable. The Air Warrior basic ensemble program was approved to proceed into an engineering manufacturing development system life cycle phase in 1st Quarter, FY 1999. Currently, a combined government and contractor team is developing Air Warrior improvements and integrating those components into a Block I Air Warrior ensemble that will be integrated with the Objective Force aircraft. Prototypes that represent the Block I Air Warrior ensemble will be developed for test and evaluation. The Air Warrior aircraft platform specific nonrecurring production engineering will begin during FY 02 in preparation for the Block I ensemble production, aircraft integration, and fielding. Beginning in FY 2003, Engineering Manufacturing Development of preplanned product improvements to the Block I ensemble will integrate joint and new technologies as block improvements to the Air Warrior ensemble. Performance specifications for the joint service advanced laser eye protection program are being developed and will be used for production competition. The Virtual Retinal Display technology is being developed for integration into helmet mounted displays for Army aviators and for the Future Combat System crewmembers.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Air Warrior System Preliminary Design Review	4Q			0	0	0	0	0
Air Warrior System Critical Design Review		2Q		0	0	0	0	0
Begin Air Warrior System Test		3Q		0	0	0	0	0
Begin Air Warrior System Operational Test			1Q	0	0	0	0	0
Begin Air Warrior nonrecurring production engineering integration into aircraft platforms			2Q	0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604801A - Aviation Engineering Development**

PROJECT  
**C45**

<u>E. Schedule Profile (continued)</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Air Warrior Basic ensemble Milestone III				0	0	0	0	0
Advanced Development of Air Warrior Block improvements			1Q	0	0	0	0	0
Engineering Development of Air Warrior Block improvements				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604801A - Aviation Engineering Development</b>	<b>PROJECT</b> <b>C45</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Air Warrior Development	SS-CPFF	Various	9087	4520	2Q	1367	1Q	0	0	0	0	Continue
b . Helmet Mounted Display	SS-CPFF	Microvision, Seattle, WA	10952	4609	2Q	0		0	0	0	0	0
c . Adv Laser Eye Protection	C-CPFF	Aotec, Southbridge, MA	1310	0		0		0	0	0	0	0
d . Small Business Innovation Research and Small Business Technology Transfer			0	329		0		0	0	0	0	0
<b>Subtotal:</b>			21349	9458		1367		0		0	0	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR and Project Order	Various Government	1457	825	1-4Q	277	1-4Q	0	0	0	0	Continue
<b>Subtotal:</b>			1457	825		277		0		0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604801A - Aviation Engineering Development</b>	<b>PROJECT</b> <b>C45</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Developmental Testing	MIPR	Various Government	230	735	1Q	518	1Q	0	0	0	0	Continue
<b>Subtotal:</b>			230	735		518		0		0	0	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Administration	Allotment		564	975	1-4Q	101	1-4Q	0	0	0	0	Continue
<b>Subtotal:</b>			564	975		101		0		0	0	Continue

<b>Project Total Cost:</b>			23600	11993		2263		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604802A - Weapons and Munitions Engineering Development**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	56349	32703	7046	0	0	0	0	0	0	0
284 MULTI PURPOSE INDV MUN	16497	14261	0	0	0	0	0	0	0	0
613 MORTAR SYSTEMS	17729	11463	5685	0	0	0	0	0	0	0
695 XM982 PROJECTILE	14481	0	0	0	0	0	0	0	0	0
705 HYDRA 70 ENGINEERING & MANUFACTURING DEVELOPMENT	9	0	0	0	0	0	0	0	0	0
AS1 SMALL ARMS IMPROVEMENT	7633	6979	1361	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

Provides for engineering development of weapons and munitions systems. The Multi-Purpose Individual Munition (MPIM), a fire-and-forget weapon capable of defeating enemy forces in buildings, bunkers, and lightly armored vehicles, will be terminated at the end of FY 2001. FY 2001 funding will be used to fund contract termination costs as necessary. The mortar systems effort supports development of the Mortar Fire Control System (MFCS). The MFCS is a revolutionary improvement in mortar capability, seamlessly linking mortar fires in the future digital battlefield. Additionally, it funds development of a low cost 60mm training round in FY 2000 and the Precision Guided Mortar Munition in FY 2002 - FY 2005. The XM982 extended range Dual Purpose Improved Conventional Munition (DPICM) is an extended range 155mm artillery projectile. It will extend the range of the M198, M190A5, M190A6, 155mm Paladin and the lightweight Howitzer to approximately 37 kilometers, with the Modular Artillery Charge System (MACS) in Crusader extending the range to 47 kilometers. Beginning in FY 2001, funding for the XM982 Program is in Program Element 0604814, Project D708. The small arms improvement program develops technology to enhance lethality, target acquisition, fire control, training effectiveness, and /or reliability for small arms weapon systems. This project develops a universal mounting bracket for the MK19-3 Grenade Machine Gun.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604802A - Weapons and Munitions Engineering Development**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	68464	22505	34336	0
Appropriated Value	69143	33005	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-1817	0	0	
c. Omnibus or Other Above Threshold Reductions	-279	0	0	
d. Below Threshold Reprogramming	-10298	0	0	
e. Rescissions	-400	-302	0	
Adjustments to Budget Years Since FY2001 PB	0	0	-27290	
Current Budget Submit (FY 2002/2003 PB )	56349	32703	7046	0

**Change Summary Expanation:**

Funding -FY 2000/FY 2002/FY 2003: PE 64802/D134 (OICW) funds reprogrammed to PE 63802/DAS3 to support OICW Dem/Val.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604802A - Weapons and Munitions Engineering Development</b>					PROJECT <b>613</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
613 MORTAR SYSTEMS	17729	11463	5685	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This program provides funds to complete development and type classify items that will enhance the effectiveness, lethality, versatility of use, mobility, and accuracy of mortar systems. Current mortar systems include conventional ammunition with a variety of fuzing and applications, weapons that range from man-portable 60mm to vehicle-mounted 120mm mortars, and related equipment such as fire control, mortar ballistic computer, training devices, and ammunition. Current funding for this project completes development of the digital Mortar Fire Control System (MFCS). MFCS is a revolutionary improvement in mortar capability, seamlessly linking mortar fires in the future digital battlefield. MFCS provides an on-board fire control system that includes a fire control computer, position navigation system, and gun pointing system. MFCS allows mortar crews to set-up in one minute, down from the current eight minutes. Accuracy is increased by a factor of four. Shorter exposure times increase crew survivability. The MFCS is fully compatible with the Advanced Field Artillery Tactical Data System (AFATDS), making mortars an integral part of Force XXI and Army 2010 and beyond fire support network. This will increase situational awareness and reduce the probability of fratricide. FY 2001 completes development of the heavy (Mounted) MFCS. Additional FY2001 funds were appropriated to complete development and test of the Mortar Anti-Personnel/Anti-Materiel (MAPAM) and begin development of a 120mm Short Range Training Round (SRTR). The MFCS System supports the legacy to objective transition path of the transformation campaign plan.

**FY 2000 Accomplishments**

- 2888 Continued Contractor/Government Software Development (MFCS Heavy)
- 3713 Initiated Government Hardware Integration (MFCS Heavy)
- 1525 Initiated Component Test (MFCS Heavy)
- 1723 Completed Developmental Engineering (XM769)
- 806 Initiated Developmental Tests/Operational Tests (DT/OT) (XM769)
- 452 Procured Test Hardware (Ammunition destructive tests) (XM769)
- 6622 Awarded Mortar Anti-Personnel - Anti-Materiel (MAPAM) Contract and Initiated Test Hardware Program

Total 17729



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604802A - Weapons and Munitions Engineering  
Development**

PROJECT

**613**

## **FY 2001 Planned Program**

- 2732 Complete Version 1 Software Development/Software Test (MFCS Heavy)
- 1039 Development Test (MFCS Heavy)
- 1214 Hardware Integration (MFCS Heavy)
- 1708 Procure MAPAM test hardware for Production Qualification Test (PQT)
- 1860 Conduct PQT for MAPAM
- 1150 Developmental Engineering for MAPAM
- 260 Engineering Test for 120mm SRTR
- 740 Hardware Development for 120mm SRTR
- 419 Developmental Engineering for 120mm SRTR
- 341 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)

Total 11463

## **FY 2002 Planned Program**

- 2880 Hardware Development of MFCS Light
- 1828 Software Development of MFCS Light
- 977 Developmental Engineering for MFCS Light

Total 5685

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604802A - Weapons and Munitions Engineering Development</b>	PROJECT <b>613</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Other Procurement, Army-2-: K99300 (MFCS)	0	7273	16785	0	0	0	0	0	0	0
Procurement Ammunition, Army: E92200 XM769 60mm Full Range Practice Round	0	2941	7535	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Development was started by the prime contractor (L3 Communications-formerly AlliedSignal Corp. of Teterboro, NJ) teamed with a number of subcontractors, and the Government. Because of impending cost growth if L3 Communications continued with the program, the contract was not further funded. Development is being completed as a Government in-house program. Initial production, scheduled for FY 2001, is planned as fixed price competitive system contract. Development of a light forces variant of the MFCS system will begin in FY 2002. This variant will apply MFCS technology to the 81mm and towed 120mm mortars. The Mortar Anti-Personnel - Anti-Material (MAPAM) round is a program to evaluate and type classify a foreign round. Rounds have been procured for comparative testing via sole source contract to SM Swiss Ammunition Enterprise Corp.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Operational Test (MFCS Heavy)			1Q	0	0	0	0	0
Type Classification (MFCS Heavy) (MS III)			2Q	0	0	0	0	0
First Unit Equipped (MFCS Heavy)			3Q	0	0	0	0	0
Type Classification (MFCS Light)				0	0	0	0	0
First Unit Equipped (MFCS Light)				0	0	0	0	0
Procure NDI Hardware for Evaluation (MAPAM)	4Q			0	0	0	0	0
Conduct Comparative / Safety Tests (MAPAM)		2-3Q		0	0	0	0	0
Prototype Qualification Tests (MAPAM)			1-2Q	0	0	0	0	0
Type Classification (MAPAM)			4Q	0	0	0	0	0
60mm Full Range Practice Round (XM769) Design Review	4Q			0	0	0	0	0
Prototype Qualification Tests (XM769)		1Q		0	0	0	0	0
Type Classification (XM769)		2Q		0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604802A - Weapons and Munitions Engineering**  
**Development**

**PROJECT**  
**613**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MFCS System Development	Cost Share	L3 Com Teterboro, NJ/TACOM-ARDEC	20221	0		0		0	0	0	0	0
b . MFCS Heavy Software Development	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	1261	1432	1Q	0		0	0	0	0	0
c . MFCS Heavy Hardware Integration	Project Order	TACOM-ACALA Rock Island Ill	333	0		0		0	0	0	0	0
d . MFCS Heavy Hardware Integration	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	2662	1214	1Q	0		0	0	0	0	0
e . MFCS Light Software Development	Contract	To Be Determined	0	0		1500	2Q	0	0	0	0	0
f . MFCS Light Hardware Development	Contract	To Be Determined	0	0		2515	2Q	0	0	0	0	0
g . MAPAM Hardware	SS/FP	SM Swiss AEC Zurich, Switzerland	3661	1558	2Q	0		0	0	0	0	0
h . 120mm SRTR Developmental Engineering	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	0	740	2Q	0		0	0	0	0	0
i . 60mm Full Range Training Round	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	1608	0		0		0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604802A - Weapons and Munitions Engineering Development</b>	<b>PROJECT</b> <b>613</b>
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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			29746	4944		4015		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MFCS Heavy Dev Support	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	3335	1039	2Q	0		0	0	0	0	0
b . MAPAM Dev Support	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	1750	1150	2Q	0		0	0	0	0	0
c . 120mm Short Range Training Rd Dev Support	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	0	419	2Q	0		0	0	0	0	0
d . MFCS Light Dev Support	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	0	0		977	2Q	0	0	0	0	0
e . SBIR/STTR			0	341		0		0	0	0	0	0
Subtotal:			5085	2949		977		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604802A - Weapons and Munitions Engineering**  
**Development**

**PROJECT**  
**613**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MFCS Heavy Component Testing	MIPR	ATEC	1038	0		0		0	0	0	0	0
b . MFCS Heavy Developmental Test	MIPR	ATEC	62	645	2Q	0		0	0	0	0	0
c . MFCS Light User Test	MIPR	ATEC	0	0		0		0	0	0	0	0
d . 60mm FRTR XM769 Production Qualification Test	MIPR	ATEC	806	0		0		0	0	0	0	0
e . 60mm FRTR XM769 Test Hardware	C/FP	Various	452	0		0		0	0	0	0	0
f . MAPAM Foreign Comparative Test	MIPR	TACOM-ARDEC Picatinny Arsenal, NJ	1119	0		0		0	0	0	0	0
g . MAPAM Production Qualification Test	MIPR	ATEC	0	1860	3Q	0		0	0	0	0	0
h . 120mm SRTR Production Qualification Test	MIPR	ATEC	0	260	3Q	0		0	0	0	0	0
Subtotal:			3477	2765		0		0		0	0	0

Remarks: Because the XM769 is a training round only, the testing need only prove out that the round is: 1) safe to use, and 2) accurately simulates the tactical round. Formal operational testing is greatly modified. Test hardware is for components that are common to other 60mm rounds. This will be procured by exercising options on existing production contracts.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604802A - Weapons and Munitions Engineering**  
**Development**

**PROJECT**  
**613**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Mortar Fire Control System	In-house	PM Mortars, Picatinny Arsenal NJ	1002	240	2Q	275	1Q	0	0	0	0	0
b . Mortar Fire Control System	T&N Contract	Robbins-Gioia Inc Alexandria VA	600	0		0		0	0	0	0	0
c . Mortar Fire Control System	T & M Contract	CSC, Eatontown, NJ	345	200	2Q	218	2Q	0	0	0	0	0
d . Mortar Fire Control System	T & M Contract	Applied Ordnance Tech., Waldorf,MD	300	200	2Q	200	2Q	0	0	0	0	0
e . MAPAM	In-house	PM Mortars, Picatinny Arsenal NJ	100	165	2Q	0		0	0	0	0	0
f . 60mm FRTR XM769	In-house	PM Mortars, Picatinny Arsenal NJ	115	0		0		0	0	0	0	0
Subtotal:			2462	805		693		0		0	0	0
<b>Project Total Cost:</b>			40770	11463		5685		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604802A - Weapons and Munitions Engineering Development</b>				PROJECT <b>AS1</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
AS1 SMALL ARMS IMPROVEMENT	7633	6979	1361	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project addresses the modernization of existing Small Arms Weapon systems. The existing Small Arms Weapon Systems support the Army Transformation Campaign Plan and will be utilized by legacy, interim and objective forces. This program provides funds to develop existing and emerging technology to enhance lethality, target acquisition, fire control, training effectiveness, and reliability for small arms weapon systems and munitions. Current small arms include a variety of personal defense weapons (.38 caliber, .45 caliber; 9mm), individual weapons (5.56mm), crew-served weapons (5.56mm-40mm) and related equipment such as fire control, training devices, hand grenades and ammunition. Current efforts focus on the Rifle Launched Entry Munition, improvements to the M249 Squad Automatic Weapon, M16/M4 Rifle, M203 Grenade Launcher, MK19 Grenade Machine Gun, M240B Medium Machine Gun, ammunition, and hand grenades.

**FY 2000 Accomplishments**

- 256

• 80

• 204

LIGHTWEIGHT TRIPOD FOR LIGHT MACHINE GUN

Solicitation and Evaluation of Proposals

Completed Milestone (MS) B

Contract Awarded
- 63

• 70

• 73

M249 RAILS/BIPOD/HANDGUARD

Prototype Design

Test Planning & Support

Prototype Design & Fabrication
- 162

• 40

MK 19 MODERN MOUNT

Engineering & Test Hardware samples

Engineering Support
- MK19 REMOTE PLATFORM

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604802A - Weapons and Munitions Engineering  
 Development**

PROJECT  
**AS1**

**FY 2000 Accomplishments (Continued)**

- 372 Completed and Released Request for Proposal (RFP) - Evaluated Proposals
  - 30 Contract Awarded
  - 572 Designed and Fabricated Prototypes  
SMALL ARMS FIRE CONTROL SYSTEM
  - 100 MS B
  - 2000 Contract Awarded
  - 286 Designed & Fabricated Hardware  
ENHANCED CAL .50 MACHINE GUN
  - 108 Contract Awarded
  - 528 Hardware Designed
  - 1364 Engineering Tests  
RIFLE LAUNCHED ENTRY MUNITION
  - 75 Continued Hardware Fabrication
  - 1025 Conducted Developmental Testing/Operational Testing (DT/OT)
  - 225 MS C/In Process Review (IPR) - Type Classification (TC)-Standard (STD)
- Total 7633

**FY 2001 Planned Program**

- 155 Hardware Design  
LIGHTWEIGHT TRIPOD FOR LIGHT MACHINE GUN
- 280 Fabricate Prototypes
- 195 Engineering Test
- 170 Prototype Modification & Redesign  
M249 RAILS/BIPOD/HANDGUARD



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604802A - Weapons and Munitions Engineering  
Development**

PROJECT

**AS1**

**FY 2001 Planned Program (Continued)**

- 97 Prototype Design & Fabrication Support
- 77 Developmental Test Support
- 103 User Evaluation
- 35 Technical Data Prep
- M249 MACHINE GUN BARREL LIFE EXTENSION PROGRAM
- 40 Prepare and Release RFP
- 30 Receive/Evaluate Proposals, Award Contract
- 300 Contract Execution, Design and Fabrication
- 40 Tech Data Preparation
- MK19 MODERN MOUNT
- 143 Definitize Requirements/Final Acq Strategy/Solicitation Preparation
- 50 Milestone B
- 500 Prototype Hardware Fabrication
- 65 Hardware Evaluation
- 37 Engineering Support
- MK19 REMOTE PLATFORM
- 200 Design, Fabricate Prototypes
- 400 Vehicle Integration & Testing
- SMALL ARMS FIRE CONTROL SYSTEM
- 955 Technical Tests
- 1454 Operational Test (OT)
- ENHANCED CAL .50 MACHINE GUN
- 445 Requirements Validation Testing

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604802A - Weapons and Munitions Engineering Development</b>	PROJECT <b>AS1</b>
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**FY 2001 Planned Program (Continued)**

- 80 Milestone B
  - 160 Contract Awards
  - 760 Manufacture Weapons
  - 208 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)
- Total 6979

**FY 2002 Planned Program**

- 330 LIGHTWEIGHT TRIPOD FOR LIGHT MACHINE GUN  
Hardware Modification and Retesting
  - 120 Hardware Fabrication
  - 150 Technical Test Start
  - 50 OT Planning
  - 210 M249 MG BARREL LIFE EXTENSION PROGRAM  
Final Design, Tooling and Fabrication
  - 71 Technical Testing
  - 91 Tech Data Preparation
  - 96 MK19 MODERN MOUNT  
Prototype Hardware Fabrication
  - 193 Hardware Testing & Evaluation
  - 50 Engineering Support
- Total 1361

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604802A - Weapons and Munitions Engineering**  
**Development**

**PROJECT**  
**AS1**

<b><u>B. Other Program Funding Summary</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>To Compl</b>	<b>Total Cost</b>
WTCV, GZ1290, Squad Auto Wpn (MODS)	4139	9865	4450	0	0	0	0	0	0	0
WTCV, GZ2800, M16 Rifle MODS	4331	9504	2100	0	0	0	0	0	0	0
WTCV, GB3000, MK19 MODS	1971	1796	745	0	0	0	0	0	0	0
WTCV, GZ1300, Med MG (MODS)	0	491	746	0	0	0	0	0	0	0
PAA, E93500, Rifle Launched Entry Munition	0	3447	2793	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Primary strategy is to mature and finalize design, award RDTE hardware contracts, and test and evaluate system with ultimate goal of type classification and production award.

<b><u>D. Schedule Profile</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
LIGHTWEIGHT TRIPOD FOR LIGHT MACHINE GUN				0	0	0	0	0
Solicitation & Evaluation of Proposals	3Q			0	0	0	0	0
Complete Milestone B	4Q			0	0	0	0	0
Contract Award	4Q			0	0	0	0	0
Design Hardware		2Q		0	0	0	0	0
Fabricate Prototypes		3Q		0	0	0	0	0
Engineering Test		3-4Q		0	0	0	0	0
Prototype Modification & Redesign		4Q	1-2Q	0	0	0	0	0
Hardware Modification & Retesting			1Q	0	0	0	0	0
Hardware Fabrication			3-4Q	0	0	0	0	0
Technical Test Start			4Q	0	0	0	0	0
OT Planning			4Q	0	0	0	0	0
Technical Testing				0	0	0	0	0
Operational Testing				0	0	0	0	0
Independent Evaluation				0	0	0	0	0
Type Classify/MS C				0	0	0	0	0
M249 RAILS/BIPOD/HANDGUARD				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE							PROJECT
<b>5 - ENG MANUFACTURING DEV</b>	<b>0604802A - Weapons and Munitions Engineering Development</b>							<b>AS1</b>
<b><u>D. Schedule Profile (continued)</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Prototype Designs	1-3Q			0	0	0	0	0
Test Planning & Support	3Q			0	0	0	0	0
Prototype Design & Fabrication Support		1-3Q		0	0	0	0	0
Developmental Test Support		4Q		0	0	0	0	0
User Evaluation		4Q	1Q	0	0	0	0	0
Technical Data Prep			2Q	0	0	0	0	0
<b>M249 RAM IMPROVEMENT/WEIGHT REDUCTION</b>				0	0	0	0	0
Award contract				0	0	0	0	0
Long lead procurements				0	0	0	0	0
Prototype designs				0	0	0	0	0
Prototype fabrication				0	0	0	0	0
Engineering tests				0	0	0	0	0
Final design				0	0	0	0	0
Hardware fabrication				0	0	0	0	0
TT/OT				0	0	0	0	0
Independent Assessment				0	0	0	0	0
ECP				0	0	0	0	0
<b>M249 MACHINE GUN BARREL LIFE EXTENSION</b>				0	0	0	0	0
<b>PROGRAM</b>								
Program release RFP		1-2Q		0	0	0	0	0
Receive/Evaluate Proposals, Award Contract		1-2Q		0	0	0	0	0
Contract Execution, Design & Fabrication		2-4Q		0	0	0	0	0
Technical Data Preparation		3Q		0	0	0	0	0
Final Design, Tooling & Fabrication			1-4Q	0	0	0	0	0
Technical Testing			3-4Q	0	0	0	0	0
Technical Data Preparation				0	0	0	0	0
Tech Eval/Reports				0	0	0	0	0
Tech Data Support				0	0	0	0	0
ECP Prep & Approval				0	0	0	0	0
<b>M249 SHORT RANGE TRAINING AMMUNITION</b>				0	0	0	0	0
Contract award				0	0	0	0	0
Manufacturing Ammunition				0	0	0	0	0
Conduct Developmental Tests				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE							PROJECT
<b>5 - ENG MANUFACTURING DEV</b>	<b>0604802A - Weapons and Munitions Engineering Development</b>							<b>AS1</b>
<b>D. Schedule Profile (continued)</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Obtain Safety Confirmation				0	0	0	0	0
Safety Certification				0	0	0	0	0
Independent assessment reports				0	0	0	0	0
Prepare package				0	0	0	0	0
Staff packages				0	0	0	0	0
Milestone C IPR/TC				0	0	0	0	0
M203 Upgrade				0	0	0	0	0
Finalize requirements				0	0	0	0	0
Competitive contractor selection/award				0	0	0	0	0
Technical assessments/risk reduction				0	0	0	0	0
Prototype Fabrication				0	0	0	0	0
Finalize prototype				0	0	0	0	0
DT/OT				0	0	0	0	0
Independent Evaluations				0	0	0	0	0
Finalize Design				0	0	0	0	0
IPR/TC-STD				0	0	0	0	0
MK19 MODERN MOUNT				0	0	0	0	0
Engineering & Test Hardware Samples	4Q	1Q		0	0	0	0	0
Engineering Support	4Q			0	0	0	0	0
Definitize Requirements/Final Acq Strategy/Solicitation Prep		1-2Q		0	0	0	0	0
Prototype Hardware Fabrication		2Q		0	0	0	0	0
Hardware Evaluation		3-4Q		0	0	0	0	0
Engineering Support		4Q	3-4Q	0	0	0	0	0
Prototype Hardware Fabrication			1-4Q	0	0	0	0	0
Hardware Test & Evaluation			3-4Q	0	0	0	0	0
MK19 REMOTE PLATFORM				0	0	0	0	0
Complete & Release RFP - Evaluate Proposals	1-3Q			0	0	0	0	0
Contract Award		1Q		0	0	0	0	0
Design, Fabricate Prototypes		2-4Q		0	0	0	0	0
Vehicle Integration & Testing		4Q		0	0	0	0	0
Small Arms Fire Control System				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE							PROJECT
<b>5 - ENG MANUFACTURING DEV</b>	<b>0604802A - Weapons and Munitions Engineering Development</b>							<b>AS1</b>
<b><u>D. Schedule Profile (continued)</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
MS B (Use of FY 2000 c/o)		3Q		0	0	0	0	0
Contract Award (Use of FY 2000 c/o)		3Q		0	0	0	0	0
Design & Fabricate Hardware (Use of FY 2000 c/o & use of FY2001 & FY2001 c/o)		3-4Q	1-4Q	0	0	0	0	0
Technical Tests (Use of FY 2001 c/o)			4Q	0	0	0	0	0
Operational Test (Use of FY 2001 c/o)			4Q	0	0	0	0	0
MK19 SELF-DESTRUCT CARTRIDGE				0	0	0	0	0
Update program documentation/market survey				0	0	0	0	0
Performance Specification				0	0	0	0	0
Small purchase				0	0	0	0	0
Technical evaluation				0	0	0	0	0
Prepare procurement package				0	0	0	0	0
Source selection				0	0	0	0	0
Contract Award				0	0	0	0	0
Engineering Development				0	0	0	0	0
Final Development Test				0	0	0	0	0
Critical Design Review				0	0	0	0	0
M240 WEIGHT REDUCTION				0	0	0	0	0
Contract Award				0	0	0	0	0
Design/Prototype Fabrication				0	0	0	0	0
Engineering Tests				0	0	0	0	0
Program Documentation				0	0	0	0	0
Design Review				0	0	0	0	0
Receive Hardware				0	0	0	0	0
Technical test				0	0	0	0	0
User Test				0	0	0	0	0
Independent Assessment				0	0	0	0	0
TC/MS C				0	0	0	0	0
M240 IMPROVED MACHINE GUN BARREL				0	0	0	0	0
Contract award				0	0	0	0	0
Preliminary Design Completed				0	0	0	0	0
Design Review				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE							PROJECT
<b>5 - ENG MANUFACTURING DEV</b>	<b>0604802A - Weapons and Munitions Engineering Development</b>							<b>AS1</b>
<b>D. Schedule Profile (continued)</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Fabricate Prototype Hardware				0	0	0	0	0
Test & Evaluation				0	0	0	0	0
Report/ECP				0	0	0	0	0
Enhanced Cal .50 Machine Gun				0	0	0	0	0
Contract Award	4Q			0	0	0	0	0
Hardware Design (Use of FY 2000 c/o)		1-3Q		0	0	0	0	0
Engineering Tests (Use of FY 2000 c/o)		3Q		0	0	0	0	0
Technical Test (Part Use of FY 2001 c/o)			1Q	0	0	0	0	0
Contract Award (Use of FY 2001 c/o)			3Q	0	0	0	0	0
Manufacture Weapons (Use of FY 2001 c/o)			4Q	0	0	0	0	0
LIGHTWEIGHT HAND GRENADE				0	0	0	0	0
Update Concussion/Mini-Frag (C/M-F) prog dev/market survey				0	0	0	0	0
Award C/M-F grenades eng development option				0	0	0	0	0
C/M-F grenades engineering development				0	0	0	0	0
C/M-F final dev test and Critical Design Review				0	0	0	0	0
Award C/M-F grenades Qual Lot fab option				0	0	0	0	0
C/M-F qual hardware mfg				0	0	0	0	0
Initiate C/M-F final development- DT/OT/LFT				0	0	0	0	0
Complete C/M-F DT/OT/LFT				0	0	0	0	0
Prepare C/M-F MS C IPR Package				0	0	0	0	0
C/M-F MS C IPR/TC-STD				0	0	0	0	0
Update Obscuration/Signaling (O/S) grenades program documentation/Market survey				0	0	0	0	0
Award O/S grenades eng dev option				0	0	0	0	0
O/S grenades engineering development				0	0	0	0	0
NON-TOXIC AMMO				0	0	0	0	0
Market Survey/program documentation				0	0	0	0	0
MS B				0	0	0	0	0
Prepare RFP				0	0	0	0	0
Bid sample testing for 9mm				0	0	0	0	0
Source selection				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604802A - Weapons and Munitions Engineering**  
**Development**

**PROJECT**  
**AS1**

<b><u>D. Schedule Profile (continued)</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Contract award-Toxic free primer development				0	0	0	0	0
Award contracts for all projectile/cartridge dev				0	0	0	0	0
Toxic free primer development				0	0	0	0	0
Projectiles/cartridges development				0	0	0	0	0
Final development test for toxic free primer				0	0	0	0	0
Final development test for projectiles/cartridges				0	0	0	0	0
Modify cart cont f/ integration of toxic free primer				0	0	0	0	0
Integration of toxic free primer				0	0	0	0	0
Critical design review (CDR)				0	0	0	0	0
Award qual lot fabrication option for 9mm				0	0	0	0	0
Award Qual Lot Fabrication Option for 5.56mm,7.62mm and Cal .50				0	0	0	0	0
Manufacture Qualification Hardware				0	0	0	0	0
Initiate DT/OT/LFT				0	0	0	0	0
Complete DT/OT/LFT				0	0	0	0	0
Prepare MS C IPR Package				0	0	0	0	0
MS C IPR/TC-STD				0	0	0	0	0
Rifle Launched Entry System				0	0	0	0	0
Continue hardware fabrication (FY00 c/o)		2Q		0	0	0	0	0
DT/OT (FY00 c/o)		2-4Q		0	0	0	0	0
MS C IPR/TC-STD (FY00 c/o)		4Q		0	0	0	0	0



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604802A - Weapons and Munitions Engineering**  
**Development**

**PROJECT**  
**AS1**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Hardware Development	FP	Multi	6133	2513		662		0	0	0	0	0
Subtotal:			6133	2513		662		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development	MIPR	ARDEC	3574	1710		340		0	0	0	0	0
b . ILS	MIPR	ACALA	96	138		50		0	0	0	0	0
c . HRED	MIPR	APG	134	113		25		0	0	0	0	0
Subtotal:			3804	1961		415		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604802A - Weapons and Munitions Engineering Development</b>						PROJECT <b>AS1</b>		
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DT	MIPR	TECOM	2408	960		120		0	0	0	0	0
b . OT	MIPR	OPTEC	0	953		12		0	0	0	0	0
c . Validation testing	MIPR	TECOM	100	0		32		0	0	0	0	0
d . Below Threshold Reprogramming			114	0		0		0	0	0	0	0
Subtotal:			2622	1913		164		0		0	0	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PGM Management	ALLOT	PM Small Arms	907	551		108		0	0	0	0	0
b . Travel	ALLOT	PM Small Arms	102	41		12		0	0	0	0	0
Subtotal:			1009	592		120		0		0	0	0
Project Total Cost:			13568	6979		1361		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604804A - Logistics and Engineer Equipment Engineering Dev**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	22065	24333	30673	0	0	0	0	0	0	0
194 ENGINE DRIVEN GEN ED	7691	5077	5008	0	0	0	0	0	0	0
429 RIGIDWALL SHELTER ED	0	4063	3515	0	0	0	0	0	0	0
461 MARINE ORIEN LOG EQ ED	3763	1434	6234	0	0	0	0	0	0	0
H01 COMBAT ENGINEER EQ ED	2569	816	2653	0	0	0	0	0	0	0
H02 TACTICAL BRIDGING - ENGINEERING DEVELOPMENT	0	637	1114	0	0	0	0	0	0	0
H14 MATERIALS HANDLING EQUIPMENT - ED	99	590	596	0	0	0	0	0	0	0
L39 ENVIRONMENTAL EQUIPMENT - ED	3216	4487	3003	0	0	0	0	0	0	0
L41 WATER AND PETROLEUM DISTRIBUTION - ED	4298	6280	7366	0	0	0	0	0	0	0
L42 CAMOUFLAGE SYSTEM ED	377	376	329	0	0	0	0	0	0	0
L43 ENGINEER SUPPORT EQUIPMENT - ED	52	573	855	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE:** This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

Included within this program element is the development of military tactical bridging, materiel handling equipment, construction equipment, engineer support equipment, environmental equipment, water purification equipment, petroleum distribution equipment, mobile electric power and water craft. This project supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604804A - Logistics and Engineer Equipment Engineering Dev**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	22844	20457	17664	0
Appropriated Value	22996	24557	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-596	0	0	
c. Omnibus or Other Above Threshold Reductions Inflation	-90	0	0	
d. Below Threshold Reprogramming	-183	0	0	
e. Rescissions	-62	-224	0	
Adjustments to Budget Years Since FY2001 PB	0	0	13009	
Current Budget Submit (FY 2002/2003 PB )	22065	24333	30673	0

Funding - FY 2002: Increase \$13,009K supports Rigidwall Shelters, Engine Driven Generators, Marine Oriented Logistics and combat Engineer Equipment development.

Funding - FY 2003: Increase \$9,555K supports Rigidwall Shelters, Engine Driven Generators, Combat Engineer Equipment, Tactical Bridging and Water and Petroleum Distribution development.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604804A - Logistics and Engineer Equipment Engineering Dev</b>				PROJECT <b>194</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
194 ENGINE DRIVEN GEN ED	7691	5077	5008	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project supports the system development and demonstration of a series of diesel engine driven generator sets/auxiliary power units and provide continual modernization of fielded sets in order to meet federally mandated environmental statutes with reduced weight and size and reduced thermal signatures. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 462 Completed Deployable Power Generation and Distribution System (DPGDS) test and evaluation.
- 4367 Initiated hardware system development and demonstration for 100 & 200kW Tactical Quiet Generator (TQG). (Qty - 8)
- 2862 Designed and fabricated small set prototype 5-60kW Advanced Medium Sized Mobile Power Source (AMMPS). (Qty - 6)

Total 7691

**FY 2001 Planned Program**

- 3544 Continue hardware system development & demonstration for 100 & 200kW TQG. (Qty - 28).
- 1395 Complete fabrication and initiate evaluation and demonstration of 5-60kW AMMPS prototypes. (Qty - 6).
- 138 Small Business Innovation Research/ Small Business Technology Transfer Program

Total 5077

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment Engineering Dev**

**PROJECT**  
**194**

**FY 2002 Planned Program**

- 3900 Continue hardware system development and demonstration for 100/200kW TQG.
  - 558 Complete Performance Specification for AMMPS.
  - 550 Complete testing of AMMPS.
- Total 5008

<b><u>B. Other Program Funding Summary</u></b>	<b><u>FY 2000</u></b>	<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
0603804A - Logistics and Engineer Equipment Adv Dev G11	964	719	1004	0	0	0	0	0	0	0
Other Procurement, Army BA Generators & Assoc. Equip (MA9800)	77834	88047	59768	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Develop and transition to competitive procurement all items in this project.

<b><u>D. Schedule Profile</u></b>	<b><u>FY 2000</u></b>	<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>
Award competitive contract(s) for design, prototype fabrication & testing of 100/200kW TQG (Phase I)	2Q			0	0	0	0	0
Complete testing of DPGDS	4Q			0	0	0	0	0
Award contract for AMMPS proof of principle prototype	2Q			0	0	0	0	0
Milestone C of DPGDS	4Q			0	0	0	0	0
Award Phase II system development and demonstration for fabrication of PPQT 100/200kW TQG sets		3Q		0	0	0	0	0
Complete fabrication 5-60kW AMMPS proof of principle prototype		3Q		0	0	0	0	0
Initiate testing of AMMPS proof of principle prototype		3Q		0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**194**

<b><u>D. Schedule Profile (continued)</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Develop solicitation package for AMMPS			2Q	0	0	0	0	0
Complete AMMPS prototype testing			4Q	0	0	0	0	0
Transition 100/200kW TQG to Procurement (Milestone C)				0	0	0	0	0
Award Phase I contracts for AMMPS: Develop military system				0	0	0	0	0
Initiate Phase I testing of AMMPS				0	0	0	0	0
Award Phase II contract for AMMPS family				0	0	0	0	0
Transition ACE capabilities to Man Portable Power (MPP) program				0	0	0	0	0
Complete testing of Phase II AMMPS				0	0	0	0	0
Begin preparation of Performance Specification for Man Portable Power Program				0	0	0	0	0
AMMPS transition to production and deployment				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604804A - Logistics and Engineer Equipment</b> <b>Engineering Dev</b>	<b>PROJECT</b> <b>194</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . 100/200kW	C-CPFF	Fermont & Gen Dyn Robotics Systems, Bridgeport, CT	3800	3184	3Q	1300	1Q	0	0	0	0	0
b . AMMPS(5-60kW)	Small Purchase	Oak Ridge National Laboratories (ORNL), Oak Ridge, TN	200	0		0		0	0	0	0	0
c . AMMPS(5-60kW)	C-CPFF	CECOM, Ft Belvoir, VA	2871	810	1Q	0		0	0	0	0	0
<b>Subtotal:</b>			6871	3994		1300		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . AMMPS(5-60kW)	In-house	CECOM, Ft Belvoir, VA	730	385	1Q	367	1Q	0	0	0	0	0
b . 100/200kW	In-house	CECOM, Ft Belvoir, VA	409	210	1Q	250	1Q	0	0	0	0	0
c . DPGDS	In-house	CECOM, Ft Belvoir, VA	830	0		0		0	0	0	0	0
<b>Subtotal:</b>			1969	595		617		0		0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**194**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DPGDS	MIPR	Eglin AFB, FL	362	0		0		0	0	0	0	0
b . 100/200kW	TBD	TBD	0	0		2200	1Q	0	0	0	0	Continue
c . AMMPS(5-60kW)	TBD	TBD	75	0		550	1Q	0	0	0	0	0
Subtotal:			437	0		2750		0		0	0	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DPGDS	In-house	CECOM, Ft Belvoir, VA	400	0		0		0	0	0	0	0
b . 100/200kW	In-house	CECOM, Ft Belvoir, VA	372	288	1Q	150	1Q	0	0	0	0	Continue
c . AMMPS(5-60kW)	In-house	CECOM, Ft Belvoir, VA	457	200	1Q	191	1Q	0	0	0	0	0
Subtotal:			1229	488		341		0		0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604804A - Logistics and Engineer Equipment  
Engineering Dev**

PROJECT

**194**

Project Total Cost:

10506

5077

5008

0

0

0

Continue

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604804A - Logistics and Engineer Equipment</b> <b>Engineering Dev</b>					<b>PROJECT</b> <b>429</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
429 RIGIDWALL SHELTER ED	0	4063	3515	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project supports the development of a series of Standardized Integrated Command Post System (SICPS) Platforms such as Rigid Wall Shelters (RWS) and Large SICPS Shelter (LSS), with added capabilities and enhanced survivability in support of Light Digitized Tactical Operational Centers (TOC) requirements.

**FY 2000 Accomplishments**

Program not funded.

**FY 2001 Planned Program**

- 572 RWS Intelligent Power Management System (IPMS) administration and engineering support
  - 500 Contract with Custom Manufacture Engineering (CME) to develop, fabricate, and manufacture IPMS prototypes.
  - 2870 Procure SICPS Platforms, integrate IPMS, and perform development and operational testing.
  - 121 Small Business Innovation Research/Small Business technology transfer (SBIR/STTR) Programs
- Total 4063

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604804A - Logistics and Engineer Equipment  
Engineering Dev**

PROJECT  
**429**

**FY 2002 Planned Program**

- 2000 Initiate development of Large Standardized Integrated Command Post System (SICPS) Shelter
- 1515 Initiate hardware development of improved shelter integration components for TOC shelters

Total 3515

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

Not applicable for this item.

**C. Acquisition Strategy:** Develop and transition to competitive procurement all items in this project

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Develop, fabricate, and manufacture IPMS prototypes		2Q		0	0	0	0	0
Integrate and test IPMS		4Q		0	0	0	0	0
Initiate component procurement/fabrication and integration of Large SICPS prototypes			1Q	0	0	0	0	0
Initiate hardware development of improved integration components for TOC shelters			1Q	0	0	0	0	0
Complete integration of Large SICPS prototypes				0	0	0	0	0
Complete hardware development improved integration components for TOC shelters				0	0	0	0	0
Initiate development testing (DT) of Large SICPS shelter				0	0	0	0	0
Initiate testing of TOC shelter components				0	0	0	0	0
Complete DT of Large SICPS Shelter				0	0	0	0	0
Complete testing of TOC shelter components				0	0	0	0	0
Begin integration of TOC components into shelters				0	0	0	0	0
Complete integration of TOC components into shelters				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604804A - Logistics and Engineer Equipment Engineering Dev</b>	PROJECT <b>429</b>
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<b><u>D. Schedule Profile (continued)</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Begin Operational Testing (OT) of Large SICPS Shelter				0	0	0	0	0
Complete OT of Large SICPS Shelter				0	0	0	0	0
Begin DT/OT of integrated TOC shelters				0	0	0	0	0
Complete DT/OT of integrated TOC shelters				0	0	0	0	0
Type Classify Large SICPS Shelter				0	0	0	0	0
Type Classify TOC shelter				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604804A - Logistics and Engineer Equipment</b> <b>Engineering Dev</b>	<b>PROJECT</b> <b>429</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IPMS Development	In House	Contractor CME, St Petersburg, FL	0	500		0		0	0	0	0	0
b . Large SICPS	In House	SBCCOM, Natick, MA	0	0		1498	1-4Q	0	0	0	0	Continue
c . TOC Components	In House	SBCCOM, Natick, MA	0	0		1000	1-4Q	0	0	0	0	Continue
Subtotal:			0	500		2498		0		0	0	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IPMS admin and engineering support	In House	C2D, Fort Monmouth, NJ	0	693		0		0	0	0	0	0
b . Large SICPS	In House	SBCCOM In-house	0	0		250	1-4Q	0	0	0	0	Continue
c . TOC Components	In House	SBCCOM In-house	0	0		250	1-4Q	0	0	0	0	Continue
Subtotal:			0	693		500		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604804A - Logistics and Engineer Equipment</b> <b>Engineering Dev</b>	<b>PROJECT</b> <b>429</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IPMS integration and test	In House	Contractor CME, St Petersburg, FL	0	2870	1-4Q	0		0	0	0	0	0
Subtotal:			0	2870		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Large SICPS Shelter	In House	SBCCOM, Natick, MA	0	0		267	1-4Q	0	0	0	0	Continue
b . TOC Components	In House	SBCCOM, Natick, MA	0	0		250	1-4Q	0	0	0	0	Continue
Subtotal:			0	0		517		0		0	0	Continue

<b>Project Total Cost:</b>			0	4063		3515		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604804A - Logistics and Engineer Equipment</b> <b>Engineering Dev</b>					<b>PROJECT</b> <b>461</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
461 MARINE ORIEN LOG EQ ED	3763	1434	6234	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project provides funds for the engineering and pre-production development of equipment in support of the Army's Logistics-Over-The-Shore (LOTS), In-theatre Port Control, and Intercoastal/Riverine Logistics missions. Projects supported include engineering development for the Navy led Joint Modular Lighterage System (JMLS), and the Army's Rapidly Installed Breakwater (RIB) Project; both of which are aimed at allowing defense forces to continue to offload critical equipment and supplies under challenging sea state conditions. Funds also support pre-production activity on the Logistics Support Vessel (LSV) Extended Service Program (ESP)/Upgrade and the Harbormaster Command and Control Center (HCCC). The HCCC program will provide for the safe and effective management of Army and Joint Port Operations during deployment of forces; both under LOTS conditions and operations in existing port facilities. Future efforts will complete development effort on the Landing Craft Utility (LCU) Recapitalization and the Theatre Support Vessel(TSV). This system supports the Legacy-to-objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 2620 Continued development of Joint Modular Lighterage System (JMLS) (Sea State 3 Capable) with Navy.
- 400 Completed performance specifications, purchase description and other pre-production documents for the LSV ESP/Upgrade.
- 743 Continued Harbormaster Command and Control Center(HCCC) development.

Total 3763

**FY 2001 Planned Program**

- 612 Continue development of JMLS in preparation for the Military User Assessment(MUA).
- 786 Complete final development, fabricate prototype, and begin testing for Harbormaster Command and Control Center (HCCC).
- 36 Small Business Innovative Research/ Small Business Technology Transfer Program

Total 1434



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**461**

**FY 2002 Planned Program**

- 425 Fabricate and demonstrate Rapidly Installed Breakwater(RIB) delivery system.
- 809 Identify hardware improvements for Landing Craft Utility(LCU) recapitalization.
- 5000 Complete JMLS development.

Total 6234

<b><u>B. Other Program Funding Summary</u></b>	<b><u>FY 2000</u></b>	<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
RDTE, 0603804A, D526, Marine Oriented Logistics, Advanced De	3703	2280	2013	0	0	0	0	0	0	0
OPA 3, R97500, Causeway, Systems	6669	17069	0	0	0	0	0	0	0	0
OPA 3, M11200, Logistic Support Vessel (LSV)	22514	0	25437	0	0	0	0	0	0	0
OPA 3, M11203, Theatre Support Vessel (TSV)	0	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Develop and transition to competitive procurement all items in this project.

<b><u>D. Schedule Profile</u></b>	<b><u>FY 2000</u></b>	<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>
Joint Modular Lighterage System (JMLS) Award	1-2Q	1-2Q		0	0	0	0	0
Rapidly Installed Breakwater (RIB) Awards			1-2Q	0	0	0	0	0
Harbormaster Command & Control Center (HCCC) Contract Award	1-3Q	2-4Q		0	0	0	0	0
LCU Parameters and Performance Characteristics		2-4Q	2-4Q	0	0	0	0	0
Combat Logistics Vehicle Concept Development				0	0	0	0	0
Operations & Support Cost Reduction Study				0	0	0	0	0
EPP Utility Craft Assessment				0	0	0	0	0
New Large Tug				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604804A - Logistics and Engineer Equipment  
Engineering Dev**

PROJECT

**461**

**D. Schedule Profile (continued)**

FY 2000 FY 2001 FY 2002 FY 2003 FY 2004 FY 2005 FY 2006 FY 2007

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**461**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . LSV	MIPR	Navy (NSWC), Suffolk, VA	315	0		0		0	0	0	0	0
b . RIB	FC-FP	Modern Technologies Inc, Warren, MI	477	0		100	1-4Q	0	0	0	0	0
c . JMLS	MIPR	Navy (PM JMLS), Hueneme, CA	1181	362	1-4Q	3700	1-4Q	0	0	0	0	0
d . RIB	MIPR	Corps of Engineers (WES), Vicksburg, MI	756	0		190	1-4Q	0	0	0	0	0
e . LSV ESP/Upgrade	MIPR	Navy (NSWC), Suffolk, VA	251	0		0		0	0	0	0	0
f . HCCC	MIPR	IOC, Rock Island Arsenal	0	150	1-4Q	0		0	0	0	0	0
g . HCCC	FC-FP	Conley & Associates, St.Louis, MO	0	300	1-4Q	0		0	0	0	0	0
h . TSV	MIPR	NSWC, Suffolk, VA	0	0		0		0	0	0	0	0
i . LCU Recap	MIPR	NSWC, Suffolk, VA	0	0		706	1-4Q	0	0	0	0	0
Subtotal:			2980	812		4696		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604804A - Logistics and Engineer Equipment</b> <b>Engineering Dev</b>	<b>PROJECT</b> <b>461</b>
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. JMLS	MIPR	TACOM CBU, Warren, MI	23	100	1-4Q	198	1-4Q	0	0	0	0	0
b. RIB	MIPR	TACOM CBU, Warren, MI	25	0		10	1-4Q	0	0	0	0	0
c. LSV ESP/Upgrade	MIPR	TACOM CBU, Warren, MI	7	0		0		0	0	0	0	0
d. HCCC	MIPR	TACOM CBU, Warren, MI	0	15	1-4Q	0		0	0	0	0	0
e. TSV	MIPR	TACOM CBU, Warren, MI	0	0		0		0	0	0	0	0
f. LCU Recap	MIPR	TACOM CBU, Warren, MI	0	0		5	1-4Q	0	0	0	0	0
<b>Subtotal:</b>			55	115		213		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**461**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. LSV	MIPR	TECOM , ATC, Aberdeen, MD	20	0		0		0	0	0	0	0
b. JMLS	MIPR	TECOM , ATC, Aberdeen, MD	40	50	1-4Q	800	1-4Q	0	0	0	0	0
c. RIB	MIPR	TECOM , ATC, Aberdeen, MD	60	0		25	1-4Q	0	0	0	0	0
d. LSV ESP/Upgrade	MIPR	TECOM , ATC, Aberdeen, MD	10	0		0		0	0	0	0	0
e. HCCC	MIPR	TECOM , ATC, Aberdeen, MD	0	50	1-4Q	0		0	0	0	0	0
f. TSV	MIPR	TECOM, ATC, Aberdeen, MD	0	0		0		0	0	0	0	0
g. LCU Recap	MIPR	TECOM, ATC, Aberdeen, MD	0	0		0		0	0	0	0	0
Subtotal:			130	100		825		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**461**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. CMF	MIPR	PM Army Watercraft Systems , TACOM, Warren, MI	0	0		0		0	0	0	0	0
b. LSV	MIPR	PM Army Watercraft Systems , TACOM, Warren, MI	125	0		0		0	0	0	0	0
c. JMLS	MIPR	TARDEC, Warren, MI	287	195	1-4Q	300	1-4Q	0	0	0	0	0
d. RIB	MIPR	PM Force Projection R&D /TARDEC, Warren, MI	186	0		100	1-4Q	0	0	0	0	0
e. LSV ESP/Upgrade	MIPR	PM Army Watercraft Systems , TACOM, Warren, MI	0	0		0		0	0	0	0	0
f. HCCC	MIPR	PM Force Projection R&D/TARDEC, TACOM, Warren, MI	0	212	1-4Q	0		0	0	0	0	0
g. TSV	MIPR	PM Force Projection R&D/TARDEC, Warren, MI	0	0		0		0	0	0	0	0
h. LCU Recap	MIPR	PM Force Projection R&D/TARDEC, Warren, MI	0	0		100	1-4Q	0	0	0	0	0
Subtotal:			598	407		500		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604804A - Logistics and Engineer Equipment  
Engineering Dev**

PROJECT

**461**

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Project Total Cost:			3763	1434		6234		0		0		0		0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604804A - Logistics and Engineer Equipment</b> <b>Engineering Dev</b>					<b>PROJECT</b> <b>H01</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
H01 COMBAT ENGINEER EQ ED	2569	816	2653	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project supports the Engineering and Manufacturing Development (EMD) of military Construction Equipment such as: Tracked Tractor; Asphalt Equipment; Scrapers and Graders. Many of these systems support the Army's Division Redesign Study (ADRS) to convert National Guard units to Combat Service Support (CSS) units. Lines of Communications (LOC) Bridging EMD efforts prior to FY01 were funded in this DH01 project line before being moved to project DH02 in this PE. Although many military requirements are available on commercial products, military unique requirements such as speed, cross country mobility, crew protection, paint and transportability (air, sea, rail) result in modifications to commercially available products. EMD is required to reduce the risk associated with this integration before entering into production. This project supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 400 Completed Heavy Dry Support Bridge (HDSB) prototype contracts. (Qty - 2)
- 228 Completed PQT of HDSB.
- 441 Awarded Bridge Erection Boat (BEB) prototype contract. (Qty - 4)
- 332 Prepared IRB Production Solicitation.
- 628 Initiated Bridge Crossing Simulator.
- 540 Conducted market investigations, revised performance specifications, performed Non-Developmental Item (NDI) testing, for reprocurments of Construction Equipment (CE).

Total 2569



**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)****June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604804A - Logistics and Engineer Equipment  
Engineering Dev**

PROJECT

**H01****FY 2001 Planned Program**

- 53 Conduct market surveillance.
  - 134 Conduct market investigations and update specifications for reprocurements of CE.
  - 605 Support development of and the revision of CE acquisition documents required prior to milestone "C" decisions.
  - 24 Small Business Innovation Research/Small Business technology transfer (SBIR/STTR) Programs
- Total 816

**FY 2002 Planned Program**

- 119 Conduct market surveillance.
  - 194 Conduct market investigations and update of specifications for reprocurements of CE.
  - 590 Support development of and the revision of CE acquisition documents required prior to milestone "C" decisions.
  - 500 Perform NDI evaluations and testing.
  - 100 LOG demo of IHMEE.
  - 1150 Prototype contract and hardware development.
- Total 2653

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604804A - Logistics and Engineer Equipment Engineering Dev</b>	PROJECT <b>H01</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA3, M06100, Tractor, Full Tracked Low Sp	0	0	2018	0	0	0	0	0	0	0
OPA3, M07000, Crushing/Screen Plan	4101	89	4474	0	0	0	0	0	0	0
OPA3, R02800, Scraper, Earthmoving 14-18 Cu	0	0	0	0	0	0	0	0	0	0
OPA3, R03801, Grader, Mtzd, Hvy	0	0	0	0	0	0	0	0	0	0
OPA3, R05900 Tactical Rapid Ex System (TRES)	0	0	5031	0	0	0	0	0	0	0
OPA3, M08100, Plant, Asphalt Mixing	0	0	2013	0	0	0	0	0	0	0
OPA3, ML5350, Item Less than \$5M (Construction Equipment)	4261	6575	12428	0	0	0	0	0	0	0

**C. Acquisition Strategy:**HMEE - Competitive RDTE followed by competitive procurement.

Construction Equipment- All RDT&E followed by competitive procurement.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
NDI Testing			1-2Q	0	0	0	0	0
Log Demo			3Q	0	0	0	0	0
Market Surveillance	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Market Investigations	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Acquisition documents	1-4Q	1-4Q	1-4Q	0	0	0	0	0
TRES EMD Contracts			3-4Q	0	0	0	0	0
TRES Testing				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**H01**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . BEB EMD Contract	FFP	North American Marine Jet, Benton AK	149	0		0		0	0	0	0	0
b . PM/Matrix Support	MIPR	TACOM, Warren, MI	7424	653	1-4Q	590	1-4Q	0	0	0	0	0
c . TARDEC	In-House	TARDEC, Warren, MI	540	110	1-4Q	294	1-4Q	0	0	0	0	0
d . TRES EMD Contract	FFP	TBD	0	0		1150	3-4Q	0	0	0	0	0
Subtotal:			8113	763		2034		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Studies for Future Capabilities	In House	TARDEC, Warren, MI	0	53	1-4Q	119	1-4Q	0	0	0	0	0
Subtotal:			0	53		119		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604804A - Logistics and Engineer Equipment</b> <b>Engineering Dev</b>	<b>PROJECT</b> <b>H01</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Bridge Crossing Simulation	MIPR	TECOM, Aberdeen, MD	728	0		0		0	0	0	0	0
b . Test and Prep	MIPR	APG, Aberdeen, MD	1121	0		500	1-2Q	0	0	0	0	0
Subtotal:			1849	0		500		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

<b>Project Total Cost:</b>			9962	816		2653		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604804A - Logistics and Engineer Equipment Engineering Dev</b>					PROJECT <b>H02</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
H02 TACTICAL BRIDGING - ENGINEERING DEVELOPMENT	0	637	1114	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project supports the engineering development and transition to procurement of Objective Force tactical bridge systems. These systems include Line of Communication (LOC) bridges and military tactical bridge site mobility equipment. These systems are needed to meet requirements such as the Anchorage System (AS) for the Ribbon Bridge and Improved Ribbon Bridge (IRB), Access/Egress Roadway System (AE) for bridge approaches, and assessment of the Rapidly Emplaced Bridging System (REBS).

**FY 2000 Accomplishments**

Project not funded in FY 2000.

**FY 2001 Planned Program**

- 100 Conduct Market investigation for Anchorage System (AS).
  - 518 Assess the merits of current boats using rebuilt boat engines versus more powerful commercially available boats. Boats for improved ribbon bridge installations.
  - 19 SBIR/STTR
- Total 637

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604804A - Logistics and Engineer Equipment  
Engineering Dev**

PROJECT  
**H02**

**FY 2002 Planned Program**

- 800 Procure Representative Samples for use in developing performance specifications for AS.
- 314 Conduct Market investigation for Access Egress Roadway System (AE).

Total 1114

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA3, M27200 Float Bridge Propulsion	0	1924	1951	0	0	0	0	0	0	0
OPA3, G82402 Rapidly Emplaced Bridging Sys	0	4991	5031	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Not applicable for this item.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
AS Market Investigation complete		3Q		0	0	0	0	0
Conduct Boat Design Analysis		3-4Q		0	0	0	0	0
Procure AS Representatives Samples			2Q	0	0	0	0	0
AE Market Investigation complete			2Q	0	0	0	0	0
AS Testing				0	0	0	0	0
Procure AE Representatives Samples				0	0	0	0	0
LOC Market Investigation complete				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604804A - Logistics and Engineer Equipment</b> <b>Engineering Dev</b>	<b>PROJECT</b> <b>H02</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . AS Samples	C-CPFF	TBD	0	0		800	2Q	0	0	0	0	0
b . AE Samples	C-CPFF	TBD	0	0		0		0	0	0	0	0
c . PM/Matrix Support	MIPR	TACOM, Warren, MI	0	637	3Q	314	2Q	0	0	0	0	0
Subtotal:			0	637		1114		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604804A - Logistics and Engineer Equipment Engineering Dev</b>	<b>PROJECT</b> <b>H02</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. AE	MIPR	APG, Aberdeen, MD	0	0		0		0	0	0	0	0
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			0	637		1114		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604804A - Logistics and Engineer Equipment</b> <b>Engineering Dev</b>				<b>PROJECT</b> <b>L39</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L39 ENVIRONMENTAL EQUIPMENT - ED	3216	4487	3003	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Project develops for transition to procurement large capacity heater and environmental control units (ECU) that do not use ozone depleting refrigerants. These systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

Note: Water Purification System Development after FY00 is reflected in Project DL41.

**FY 2000 Accomplishments**

- 327 Continued engineering and management support of the 1500 GPH PQT/EUT.
- 168 Continued contractor support of PQT and completion of 1500 GPH Tactical Water Purification System (TWPS) SDD contract.
- 351 Continued engineering and management support of 1500 GPH TWPS SDD contract effort.
- 940 Completed 1500 TWPS SDD contract award increment
- 890 Completed PQT/EUT for 1500 GPH TWPS.
- 30 Conducted market survey for the Large Capacity Field Heater (LCFH)
- 84 Initiated program documentation (MS B and SDD Contract Packages) for the LCFH.
- 226 Completed program documentation (MS B and SDD Contract packages) for the Improved Environmental Control Unit (IECU) and conducted MS B program review.
- 200 Developed and tested IECU prototype for verification of SDD Performance Specification. (Quantity 1)

Total 3216

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604804A - Logistics and Engineer Equipment  
Engineering Dev**

PROJECT

**L39****FY 2001 Planned Program**

- 1373 Develop designs for three horizontal IECU configurations.
- 720 Fabricate 36 (12 each 9k, 18k, & 36kBTUH) Engineering Development Models of three horizontal IECU configurations for PQT and User Evaluation.
  
- 650 Initiate PQT of IECU Engineering Development Models.
- 730 Engineering and management support of IECU Program.
- 150 Complete MS B documentation for the LCFH and conduct MS B program review.
- 100 Develop design for Large Capacity Field Heater (LCFH)
- 300 Fabricate 10 Engineering Development Models of LCFH for PQT and IOT&E.
- 115 Initiate PQT of LCFH Engineering Development Models.
- 220 Engineering and management support of for LCFH Program.
- 129 Small Business Innovation Research/Small Business Technology Transfer Program

Total 4487

**FY 2002 Planned Program**

- 182 Procure Logistics Support Documentation for Large Capacity Heater.
- 268 Conduct PQT of LCFH Engineering Development Models.
- 545 Engineering and management support for LCFH Program.
- 750 Engineering and management support for IECU Program.
- 718 Complete PQT and User Evaluation of IECU Engineering Development Models.
- 140 Prepare documentation for and conduct MS C program review for IECU Program.
- 100 Develop design for LCFH.
- 300 Fabricate 10 engineering development models of LCFH for PQT and IOT&E.

Total 3003

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604804A - Logistics and Engineer Equipment Engineering Dev</b>	PROJECT <b>L39</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA3, MF9000, Environmental Control Units (ECU)	5829	6290	5082	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Development and transition to competitive procurement for all items under this project.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete 1500 TWPS prototype fabrication.	2Q			0	0	0	0	0
Complete contractor testing on 1500 TWPS.	2Q			0	0	0	0	0
Complete PQT/EUT on 1500 TWPS	4Q			0	0	0	0	0
MS B IPR for IECU		1Q		0	0	0	0	0
Release SDD RFP for IECU		2Q		0	0	0	0	0
Award SDD contract for IECU		3Q		0	0	0	0	0
Complete Testing for IECU			4Q	0	0	0	0	0
MS C/TC for IECU				0	0	0	0	0
LCFH - MS B		3Q		0	0	0	0	0
LCFH - SDD Contract Award			1Q	0	0	0	0	0
LCFH - Complete SDD Models			3Q	0	0	0	0	0
LCFH - Complete PQT and IOT&E				0	0	0	0	0
LCFH - Conduct MS C				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**L39**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . 1500 GPH TWPS	In-house	TARDEC, Warren, MI	3048	0		0		0	0	0	0	0
b . 1500 GPH TWPS	C-CPFF	SFA, Inc., Frederick, MD	168	0		0		0	0	0	0	0
c . Large Capacity Field Heater SDD	C-CPFF	TBD	0	0		507	1Q	0	0	0	0	0
d . LCFH Engr	In-house	US Army CECOM, Ft. Belvoir, VA	96	359	1-4Q	415	1-4Q	0	0	0	0	0
e . Engr. IECU SDD	In-house	US Army CECOM, Ft. Belvoir, VA	266	474	1-4Q	700	1-4Q	0	0	0	0	0
f . IECU SDD	C-CPFF	TBD	0	2143	2Q	613	1Q	0	0	0	0	0
Subtotal:			3578	2976		2235		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604804A - Logistics and Engineer Equipment Engineering Dev</b>	<b>PROJECT</b> <b>L39</b>
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engr & Mgt Support of 1500 TWPS Contract	MIPR	NFESC, Port Huaneme, CA	351	0		0		0	0	0	0	0
b . 1500 TWPS SDD	MIPR	NFESC, Port Huaneme, CA	940	0		0		0	0	0	0	0
c . Engr & Mgt Support of IECU	MIPR	US Army CECOM, Ft. Belvoir, VA	0	20	3Q	0		0	0	0	0	0
Subtotal:			1291	20		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PQT (1500 TWPS)	MIPR	TECOM (ATC), Aberdeen, MD	910	0		0		0	0	0	0	0
b . PQT (Large Capacity Field Heater)	C-CPFF	TBD	0	0		343	1Q	0	0	0	0	0
c . IOT&E (Large Capacity Field Heater)	MIPR	ATEC, Alexandria, VA	0	0		0		0	0	0	0	0
d . Engineering tests of IECU prototypes	C-CPFF	Various	97	1115	3Q	105	1Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604804A - Logistics and Engineer Equipment Engineering Dev</b>	<b>PROJECT</b> <b>L39</b>
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III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
e . User Evaluation of IECU	MIPR	ATEC, Alexandria, VA	0	0		50	1-4Q	0	0	0	0	0
<b>Subtotal:</b>			1007	1115		498		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Large Capacity Field Heater management	In-house	US Army CECOM, Ft Belvoir, VA	43	140	1-4Q	130	1-4Q	0	0	0	0	0
b . IECU	In-house	US Army CECOM, Ft Belvoir, VA	38	236	1-4Q	140	1-4Q	0	0	0	0	0
<b>Subtotal:</b>			81	376		270		0		0	0	0

<b>Project Total Cost:</b>			5957	4487		3003		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604804A - Logistics and Engineer Equipment</b> <b>Engineering Dev</b>					<b>PROJECT</b> <b>L41</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L41 WATER AND PETROLEUM DISTRIBUTION - ED	4298	6280	7366	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Army has the mission to supply fuel for all land-based forces, including the Marines and the Air Force. This developmental program provides the capability to perform battlefield sustainment operations, including receiving and transferring petroleum from trucks, ships, and permanent and temporary storage facilities; moving petroleum between storage to and within corps and division areas; quality surveillance testing; and dispensing in support of tactical operations, including rapid refueling of airfields. These R&D efforts support the development and enhancement of rapidly deployed Petroleum and Water equipment which enables the Army to achieve its transformation vision by providing it with the means to be highly mobile and self sustaining in very hostile theaters of operations. These systems support the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 2014 Awarded design and fabrication effort for Petroleum Quality Analysis System (PQAS).
- 2037 Awarded incrementally-funded contract for Rapidly Installed Fuel Transfer Systems (RIFTS).
- 247 Program management and general support.

Total 4298

**FY 2001 Planned Program**

- 1880 Continue development and test/evaluation of PQAS EMD prototypes (qty 2).
- 342 Establish system performance requirements and develop purchase description for Petroleum Quality Surveillance Lab (PQSL).
- 1686 Award second increment for RIFTS. Initiate test and evaluation.
- 100 Program management and general support.
- 1590 Continue 1500 Tactical Water Purification System (TWPS) EMD effort.
- 200 Conduct investigation of NBC contamination removal technology for water purification systems.

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604804A - Logistics and Engineer Equipment  
Engineering Dev**

PROJECT

**L41****FY 2001 Planned Program (Continued)**

- 300 Evaluate Pre-Planned Product Improvements (P3I) for water purification systems.
- 182 Small Business Innovative Research/Small Business Technology Transfer Programs

Total 6280

**FY 2002 Planned Program**

- 500 Evaluate commercial water treatment components for Pre-Planned Product Improvements (P3I) for water purification systems.
- 225 Prepare test reports for systems evaluated under water purification P3I program.
- 1100 Complete PQAS testing and conduct MS C IPR.
- 300 Develop PQSL program management documents for Milestone decision and prepare RFP.
- 3409 Initiate EMD contract for RIFTs.
- 300 Program management and support.
- 832 Develop LHS Modular Fuel Farm prototype.
- 400 Complete 1500 TWPS EMD effort.
- 300 Prepare program documentation for 3K Water Purification Unit (WPU).

Total 7366



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604804A - Logistics and Engineer Equipment Engineering Dev</b>	PROJECT <b>L41</b>
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<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, 0603804.DK41, POL Distribution Equipment Advanced Development	1070	2175	2859	0	0	0	0	0	0	0
OPA 3, MB6400, Quality Surveillance Equipment	1696	7056	7694	0	0	0	0	0	0	0
OPA 3, R05600, Water Purification Systems	9351	40354	39289	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Development of and transition to competitive procurement for all items under this project.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Awarded contract for the RIFTs.		2Q		0	0	0	0	0
Evaluate P3I for water purification systems		1-4Q	1-4Q	0	0	0	0	0
Complete 1500 TWPS EMD contract, PQT, and conduct special LRIP IPR.	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Complete DT/OT of pre-production PQAS prototypes.			2Q	0	0	0	0	0
Conduct PQAS MS III IPR.			3Q	0	0	0	0	0
Award second increment for RIFTs. Test & Evaluate.		4Q		0	0	0	0	0
Complete technical evaluation of FTIR spectroscopy as screening tool for PQAS.				0	0	0	0	0
EMD contract for RIFTs.			3-4Q	0	0	0	0	0
Conduct PQSL MS III IPR.				0	0	0	0	0
Evaluate technologies for lubricant quality monitor.				0	0	0	0	0
Evaluate technologies for petroleum quality analyzers.				0	0	0	0	0
Perform market survey of commercial water quality monitoring systems.				0	0	0	0	0
Evaluate commercial water quality monitoring systems.				0	0	0	0	0
Conduct P3I for petroleum storage and distribution systems.		1-4Q	1-4Q	0	0	0	0	0
Continue Development of LMFF				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604804A - Logistics and Engineer Equipment Engineering Dev</b>	PROJECT <b>L41</b>
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<b><u>D. Schedule Profile (continued)</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Test and Evaluate LMFF				0	0	0	0	0
Award 3K WPU EMD Contract				0	0	0	0	0
Develop Mil A/B IPR Package & EMD Contract for 3K WPU			1-4Q	0	0	0	0	0
Develop specification and RFP and award contract for TFAS				0	0	0	0	0
Develop LHS Modular Fuel Farm Prototypes (LMFF)			2-4Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**L41**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. PQAS	In-House	TARDEC, Warren, MI	155	390	2Q	215	2Q	0	0	0	0	0
b. PQAS	MIPR	Rock Island Arsenal, Rock Island, IL	1684	790	2Q	410	1Q	0	0	0	0	0
c. PQAS	FFP	TBD	0	187	3Q	75	1Q	0	0	0	0	0
d. PQSL	CFP	Various	0	215	1Q	0		0	0	0	0	0
e. PQSL	In-House	TARDEC, Warren, MI	0	102	1Q	50	1Q	0	0	0	0	0
f. RIFTS	In-House	TARDEC, Warren, MI	150	131	1Q	200	1Q	0	0	0	0	0
g. RIFTS	C-CPFF	Various	1887	1555	4Q	2509	2Q	0	0	0	0	0
h. 1500 TWPS	In-House	TARDEC, Warren, MI	0	335	2Q	0		0	0	0	0	0
i. 1500 TWPS hardware	C-CPFF	SFA, Inc, Frederick, MD	0	915	2Q	0		0	0	0	0	0
j. Lubricant Quality Monitor	In-House	TARDEC, Warren, MI	0	0		0		0	0	0	0	0
k. Petroleum Quality Analyzer	In-House	TARDEC, Warren, MI	0	0		0		0	0	0	0	0
l. Water Purification P31	In-House	TARDEC, Warren, MI	0	150	2Q	200	1Q	0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**L41**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
m . Water Purification P31	Purchase Orders	TBD	0	0		150	2Q	0	0	0	0	0
n . 3K WPU	In-House	TARDEC, Warren, MI	0	0		100	1Q	0	0	0	0	0
o . 3K WPU	C-CPFF	TBD	0	0		0		0	0	0	0	0
p . Improved Water Quality	In-House	TARDEC, Warren, MI	0	0		0		0	0	0	0	0
q . Improved Water Quality	Purchase Orders	TBD	0	0		0		0	0	0	0	0
r . LHM Modular Fuel Farm	C-CPFF	TBD	0	0		750	2Q	0	0	0	0	0
s . LMFF	In-House	TARDEC, Warren, MI	0	0		82	1Q	0	0	0	0	0
Subtotal:			3876	4770		4741		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**L41**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PQAS	In-House	TACOM, Warren, MI	0	190	2Q	55	2Q	0	0	0	0	0
b . PQSL	In-House	TACOM, Warren, MI	0	0		50	2Q	0	0	0	0	0
c . Lubricant Quality Monitor	In-House	TACOM, Warren, MI	0	0		0		0	0	0	0	0
d . Petroleum Quality Analyzer	In-House	TACOM, Warren, MI	0	0		0		0	0	0	0	0
e . Water Purification P31	In-House	TACOM, Warren, MI	0	0		50	1Q	0	0	0	0	0
f . 3K WPU	In-House	TACOM, Warren, MI	0	0		200	1Q	0	0	0	0	0
Subtotal:			0	190		355		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**L41**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PQAS DT	MIPR	TECOM, Aberdeen, MD	175	323	2Q	0		0	0	0	0	0
b . PQAS	MIPR	APG, Aberdeen, MD	0	0		50	2Q	0	0	0	0	0
c . PQAS OT	MIPR	TEXCOM, Texas	0	0		195	1Q	0	0	0	0	0
d . RIFTS	MIPR	TECOM, Aberdeen, MD	0	0		700	2Q	0	0	0	0	0
e . 1500 GPH TWPS	MIPR	NFESC, Port Huaneme, CA	0	340	2Q	0		0	0	0	0	0
f . Lubricant Quality Monitor	In-House	TARDEC, Warren, MI	0	0		0		0	0	0	0	0
g . Petroleum Quality Analyzer	In-House	TARDEC, Warren, MI	0	0		0		0	0	0	0	0
h . Water Purification P31	In-House	TARDEC, Warren, MI	0	150	2Q	325	1Q	0	0	0	0	0
i . Water Purification P31	MIPR	Dugway PG, Dugway, MD	0	200	3Q	0		0	0	0	0	0
j . 1500 TWPS	In-House	TEXCOM, Texas	0	0		400	2Q	0	0	0	0	0
k . LMFF	MIPR	ATEC, Alexandria, VA	0	0		0		0	0	0	0	0
Subtotal:			175	1013		1670		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**L41**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PQAS	In-House	TARDEC, Warren, MI	0	0		100	1Q	0	0	0	0	0
b . PQSL	In-House	TARDEC, Warren, MI	0	25	2Q	200	1Q	0	0	0	0	0
c . Lubricant Quality Monitor	In-House	TARDEC, Warren, MI	0	0		0		0	0	0	0	0
d . Petroleum Quality Analyzer	In-House	TARDEC, Warren, MI	0	0		0		0	0	0	0	0
e . Program Management Support	In-House	TACOM, Warren, MI	247	282	1Q	300	1Q	0	0	0	0	0
<b>Subtotal:</b>			247	307		600		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			4298	6280		7366		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604804A - Logistics and Engineer Equipment</b> <b>Engineering Dev</b>					<b>PROJECT</b> <b>L43</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L43 ENGINEER SUPPORT EQUIPMENT - ED	52	573	855	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Project develops Engineer Support Equipment (ESE) such as small boats, diving equipment, well drilling modules, fire trucks, tool outfits, large power generator plants, electrical distribution systems, and floodlights which are used for field operations in support of the Objective Force.

**FY 2000 Accomplishments**

- 20 Developed performance specification for outboard motors.
  - 19 Conducted market investigation for outboard motors.
  - 13 Conducted market investigation testing for outboard motors.
- Total 52

**FY 2001 Planned Program**

- 93 Conduct market investigation, develop performance specifications and conduct preproduction award effort for diving equipment.
  - 319 Support the development of large generator sets and associated equipment.
  - 144 Conduct market investigation, develop performance specifications and conduct preproduction award effort for well drilling module.
  - 17 Small Business Innovation Research/Small Business technology transfer (SBIR/STTR) Programs
- Total 573



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**L43**

**FY 2002 Planned Program**

- 100 Conduct market investigation, develop performance specifications and conduct preproduction award effort for diving equipment.
  - 755 Award EMD contract for well drilling module
- Total 855

<b><u>B. Other Program Funding Summary</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>To Compl</b>	<b>Total Cost</b>
OPA 3, MA8050, Items Less than \$5.0M (CSS-Equipment)	4328	1892	4001	0	0	0	0	0	0	0
OPA 3, MA8800, Items Less than \$5.0M (Generator Equipment)	0	0	652	0	0	0	0	0	0	0
OPA 3, M56400, Generator Set, DE, 750KW 60HZ	0	0	7732	0	0	0	0	0	0	0

**C. Acquisition Strategy:**EMD and transition to production.

<b><u>D. Schedule Profile</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Conduct market investigation for well drilling module		1Q		0	0	0	0	0
Award EMD contract for well drilling module			1Q	0	0	0	0	0
Conduct testing for well drilling module				0	0	0	0	0
Conduct market investigation and testing for diving equipment		1Q		0	0	0	0	0
Conduct market investigation and testing for outboard motors	4Q			0	0	0	0	0
Develop performance specifications for 100/200KW Electric Power System		2Q		0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**L43**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Outboard motors product development	IN- HOUSE	TACOM, Warren, MI	52	0		0		0	0	0	0	0
b . Diving equipment product development	IN-HOUSE	TACOM, Warren, MI	0	93	1Q	100	1Q	0	0	0	0	0
c . Generator production development	IN-HOUSE	CECOM, Ft Belvoir, VA	0	336	2Q	0		0	0	0	0	0
d . Well drilling module product development	MIPR	TACOM, Warren, MI	0	144	1Q	0		0	0	0	0	0
e . Well drilling EMD contract	C-CPFF	TACOM, Warren, MI	0	0		755	1Q	0	0	0	0	0
Subtotal:			52	573		855		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604804A - Logistics and Engineer Equipment**  
**Engineering Dev**

**PROJECT**  
**L43**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Well drilling module testing	C-CPFF	TACOM, Warren, MI	0	0		0		0	0	0	0	0
Subtotal:			0	0		0		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604804A - Logistics and Engineer Equipment Engineering Dev</b>	PROJECT <b>L43</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
Project Total Cost:			52	573		855		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications Sys Eng**  
**Dev**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	27896	61254	122644	0	0	0	0	0	0	0
097 C3I INTEROP NETWORK	1996	1879	1913	0	0	0	0	0	0	0
098 TAC RADIO ACCESSORIES	0	2170	0	0	0	0	0	0	0	0
485 C4I SYS CERTIFICATION	4317	3961	3999	0	0	0	0	0	0	0
589 ARMY SYS ENGINEERING & WARFIGHTING TECH SUP	11619	8334	8451	0	0	0	0	0	0	0
591 WPN SYS TECH ARCH (WSTA)	2340	2433	2406	0	0	0	0	0	0	0
615 JTRS-GROUND DOMAIN INTEGRATION	5836	28281	104034	0	0	0	0	0	0	0
629 TACTICAL COMMUNICATIONS SYSTEM - ENGINEERING DEVEL	1788	14196	1841	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This Program Element (PE) supports efforts to develop interoperability of Army programs and products, horizontally and vertically for the digitized battlefield. Project D097 supports development of the C4I Interoperability Network. Also included is the Army portion of engineering development efforts is support of the Combat Survivor Evader Locator System (CSEL) in Project D098. This includes follow-on programs to demonstrated technologies evolving from Wireless Network Access, Communications Network Planning and Management and initiatives to establish a Multiband Radio Integrated testbed. Project D485 supports C4I Systems Certification. It evaluates system's interoperability for the Army XXI battlefield digitization effort, in support of the Vice Chief of Staff of the Army (VCSA) and Army Acquisition Executive (AAE), to identify interoperability issues, develop certification recommendations, and provide architecture assessments by the Digital Integration Lab (DIL). Project D589 Army Systems Engineering & Warfighter Technical Support efforts is recommended by the Army Science Board and directed by the Army Acquisition Executive (AAE) and Vice Chief of Staff of the Army (VCSA). The ASE provides essential technology expertise on all Systems Engineering and Technical Architecture (SE/TA) matters critical to gain Information Dominance and foster interoperability among all Army systems. The Weapons Systems Technical Architecture, Project D591, supports development of the Joint Technical Architecture-Army (JTA-A) which provides the "building code" foundation for designing, building, fielding, and supporting interoperable systems in an expedient and cost-effective manner. Project D615 supports the Near Term Digital Radio System (NTDRS) and the Army Joint Tactical Radio System (JTRS). The NTDRS is not a new start: It was funded in PE 0603713A, D370 in FY2000/2001 & prior and in D615 beginning in FY2000. The Army development effort for the Joint Tactical Radio System (JTRS) hardware development is funded in PE 0603173A, Project D370 in FY2000 and in Project D615 beginning in FY 2001. Project D629, Tactical Communications System - Demonstration Validation, provides for insertion of selected proven communications technology from program elements 0602782A, Project AH92 applied research and 0603006A, advanced technology development, into the next

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications Sys Eng**  
**Dev**

phase of development. Note: This is not a new start effort, previously this effort was funded under PE/Proj. 0603805A/D246. The Applied Communications and Information Networking (ACIN) project provides for the evaluation and capitalization of emerging commercial communications and networking technologies by leveraging advances, influencing development efforts, influencing standards and delivering technical solutions in support of emerging architectures (JTA-A). This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	23836	49316	97718	0
Appropriated Value	23987	61816	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-540	0	0	
c. Omnibus or Other Above Threshold Increases	1018	0	0	
d. Below Threshold Reprogramming	3500	0	0	
e. Rescissions	-69	-567	0	
Adjustments to Budget Years Since FY2001 PB	0	0	24926	
Current Budget Submit (FY 2002/2003 PB )	27896	61249	122644	0

Funding - FY 2000: Omnibus or Other Above Threshold: Inflation Adjustment (-82) & Army Transformation funds (+1100K); Below Threshold Reprogramming: Army reprogram JCF AWE funds (+3500k). In FY2002, Army adjustments reflect Program Budget Decision 817 which provides a plus up of \$25M to

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604805A - Command, Control and Communications Sys Eng  
Dev**

Project D615 for the JTRS program for risk reduction efforts to acquire sufficient near-term hardware and software capability and a net decrease of (-\$74K) resulting from previous adjustments due to Program budget decision for Systems Integration and Engineering. In FY2003, Army adjustments reflect the net decrease due to Program Budget Decision for Systems Integration and Engineering.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604805A - Command, Control and Communications</b>					<b>PROJECT</b> <b>097</b>	
				<b>Sys Eng Dev</b>						
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
097 C3I INTEROP NETWORK	1996	1879	1913	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Project D097 - C3I Interoperability Network: Provide interoperability/integration support for the development and implementation of the Army Modernization, Joint and Coalition, and Objective Force architectures by providing a virtual command, control, communications, computer, intelligence, electronic warfare and sensor (C4IEWS) Digital Integration Lab (DIL). Specifically the DIL supports the integrations of Army's programs and products, horizontally and vertically for the digitized battlefield, by replicating current and future tactical battlefield environments (including Joint and Allied interoperability environments). To attain this goal, utilize on-site and electronically interconnected remote C4IEWS systems, labs/testbeds, field/integration sites, developers facilities and Battle Labs to enable/facilitate comprehensive evaluations of new prototypes, evolutionary system developments, new technologies, commercial products, software and systems interoperability. Develop and apply protocol test tools to assure the capability to support and assess interoperability and compliance with the Joint/Army Technical Architecture's Variable Message Format (VMF) and MIL-STD-188-220 protocol standards suites. This program supports the Legacy to Objective transition path of the Army Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 380 Provide external DIL connectivity to remote battlefield digitization sites for digitization experimentation and tests.
- 764 Upgrade, operate and support DIL Evaluation & Certification Testbed and other facilities supporting experiments/certifications needed for battlefield digitization for Army FDD, Y2K, Joint (e.g. Joint Contingency Force AWE) as well as STO/ACTD/ATD experimentation and evaluations.
- 100 Acquire/update DIL hardware and software interfacing systems, test tools, and supporting systems for 1st Digitized Division and TA/SA evaluations
- 126 Acquire DIL automated scenario drivers and test analysis tools for FDD evaluations and TA/SA evaluations.
- 186 188-220 Protocol Test Tool (Monitor/Decoder) development to support Sync Mode, common PTT components.
- 100 188-220 Protocol Test Tool (Conformance Tester V2) development; develop version 220B.
- 50 188-220 Protocol Test Tool (Network Analyzer V1) development; Supports Net troubleshooting & Net performance.
- 90 VMF Test Tool development and On-site support
- 70 Develop/Field VMF Reissue 3 VMF tool database



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE	PROJECT
<b>0604805A - Command, Control and Communications Sys Eng Dev</b>	<b>097</b>

**FY 2000 Accomplishments (Continued)**

- 130 VTT Message Generation Scripting
- Total 1996

**FY 2001 Planned Program**

- 380 Provide external DIL connectivity to remote battlefield digitization sites for digitization experimentation and tests.
  - 638 Upgrade, operate and support secure DIL Evaluation & Certification Testbed and other facilities supporting experiments/certifications needed for battlefield digitization for Army FDD, Joint Forces as well as STO/ACTD/ATD experimentation and evaluations related to Objective Force development.
  - 100 Acquire/update DIL hardware and software interfacing systems, test tools, and supporting systems for 1st Digitized Division and TA/SA evaluations
  - 127 Acquire DIL automated scenario drivers and test analysis tools for FDD evaluations and TA/SA evaluations.
  - 150 188-220 Protocol Test Tool (Monitor/Decoder) development to support Sync Mode, common PTT components.
  - 140 VTT Message Generation Scripting
  - 100 188-220 Protocol Test Tool (Conformance Tester V3) development; develop version 220C.
  - 50 188-220 Protocol Test Tool (Network Analyzer V2) development; supports Net troubleshooting & Net performance.
  - 88 VMF Test Tool development and On site support
  - 70 Develop/Field VMF Reissue 4 VMF tool database
  - 36 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Program
- Total 1879

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604805A - Command, Control and Communications                  Sys Eng Dev</b>	PROJECT <b>097</b>
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**FY 2002 Planned Program**

- 380 Provide external DIL connectivity to remote battlefield digitization sites for digitization experimentation, and tests.
  - 702 Upgrade, operate and support DIL Evaluation & Certification Testbed and other facilities supporting experiments/certifications needed for battlefield digitization for Army Second Digitized Division (SDD) and First Digitized Corps (FDC) digitization efforts, Joint, Allied as well as STO/ACTD/ATD experimentation and evaluations related to Objective Force development.
  - 100 Acquire/update DIL hardware and software interfacing systems, test tools, and supporting systems for SDD,FDC,and Objective Forces.
  - 127 Acquire DIL automated scenario drivers and test analysis tools for SDD and FDC evaluations and TA/SA evaluations.
  - 150 188-220 Protocol Test Tool (Monitor/Decoder) development to support Sync Mode, common PTT components.
  - 100 188-220 Protocol Test Tool (Conformance Tester V4) development; develop version 220D.
  - 50 188-220 Protocol Test Tool (Network Analyzer V3) development; supports Net troubleshooting & Net performance.
  - 94 VMF Test Tool development and On-site support
  - 70 Develop/Field VMF Reissue 5 VMF tool database
  - 140 VTT Message Generation Scripting
- Total 1913

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

**C. Acquisition Strategy:** The efforts funded in this project are non-system specific, supporting interoperability across multiple systems. The contractual efforts/services are obtained from existing competitive omnibus support services contracts.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications**  
**Sys Eng Dev**

**PROJECT**  
**097**

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Maintain and upgrade remote connectivity between digitization sites	1-4Q	1-4Q	1-4Q	0	0	0	0	0
DIL Testbed support for FDD, JCF AWE, SDD, FDC & Other AWE/ATD's/ACTD's	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Acquire DIL testbed systems to support message compliance certification	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Develop, maintain, certify Protocol test tool (PTT)	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Develop, maintain, certify VMF test tool (VTT)	1-4Q	1-4Q	1-4Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604805A - Command, Control and Communications Sys</b> <b>Eng Dev</b>	<b>PROJECT</b> <b>097</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labor (internal Govt)		USACECOM, Fort Monmouth, NJ	1758	800		800		0	0	0	0	0
b . Travel		USACECOM, Fort Monmouth, NJ	51	15		15		0	0	0	0	0
c . SBIR/STTR Program			0	36		0		0	0	0	0	0
<b>Subtotal:</b>			1809	851		815		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Engineering	C/CPFF	Arinc, Fort Monmouth, NJ	2132	467		499		0	0	0	0	0
b . Development Support	C/CPFF	BAE, Fort Monmouth, NJ	40	40		40		0	0	0	0	0
c . Development Support	C/CPFF	CSC, Fort Monmouth, NJ	300	150		157		0	0	0	0	0
d . Development Support	C/CPFF	C3I, Fort Monmouth, NJ	415	245		265		0	0	0	0	0
e . Security Engineering	C/CPFF	Nations, Fort Monmouth, NJ	51	30		30		0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604805A - Command, Control and Communications Sys Eng Dev</b>						PROJECT <b>097</b>		
II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
f. Equipment	FFP	USA CECOM	550	96		107		0	0	0	0	0
Subtotal:			3488	1028		1098		0		0	0	0
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:												
Project Total Cost:			5297	1879		1913		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604805A - Command, Control and Communications Sys Eng Dev</b>					PROJECT <b>485</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
485 C4I SYS CERTIFICATION	4317	3961	3999	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** C4I Systems Certification: This Program Element (PE) supports efforts to develop interoperability of Army programs and products, horizontally and vertically for the digitized battlefield. Evaluate system's interoperability in support of the Army Enterprise Architecture (AEA) for the development and implementation of Army Modernization, Joint and Coalition, and Objective Force, which are in support of the Vice Chief of Staff of the Army (VCSA) and Army Acquisition Executive (AAE) initiatives. Specifically, identify interoperability issues, develop certification recommendations, and provide architecture assessments. The Digital Integration Lab (DIL) provides evaluation of systems' interoperability throughout the life cycle to identify interoperability issues as early as possible. The DIL, in support of the Army Systems Engineer and the Central Test Support Facility (CTSF) is the Army's messaging standards conformance authority. Establish and sustain interoperability between Army C4I systems, and between the Army and Joint/Allied C4I communities in support of DOD 4630.5, DODI 4630.8, CJSCI 6212.01, and AR73-1. Provide the Army focal point for the review, staffing, coordination, and development of Army positions for interface interoperability standards and specifications. Participate in Joint/Allied and intra-Army interoperability certification testing and represent the Army in the Joint/Allied Configuration Management Process. Develop and configuration manage two key elements of the Joint/Army Technical Architectures - the Variable Message Format (VMF) message and the MIL-STD-188-220 protocol standards, in support of Army Science Board directive and approved Technical Architectures. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 510 Evaluate and certify IT/C4ISR systems interoperability for FDD, Joint experiments to assure compliance with the Technical and System Architectures
- 500 Provide DIL System Engineering and Integration support for conduct of experiments and evaluations to support FDD, Joint Contingency Force AWE, Joint Tests, and testing related to development of ATD's and STO's
- 200 Provide systems engineering, integrated support & field support for identification and resolution of systems' discrepancies and inconsistencies identified during evaluations
- 524 Developed and published 188-220B and 47001C application header standards
- 310 Developed/Joint approved new VMF messages
- 320 Joint approved 43 VMF change proposals

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>0604805A - Command, Control and Communications Sys Eng Dev</b>	<b>485</b>

**FY 2000 Accomplishments (Continued)**

- 65 Maintained VMF database and provided two new versions to customers
  - 310 Conducted 6 Army and Joint Configuration control boards
  - 580 Evaluated, processed and obtained approval of 1100 change proposals
  - 738 Conducted 10 Joint certification testings to include 24 operational systems, and developed over 500 proplem reports for analysis by Joint services
  - 260 Represented the Army in over 24 Joint TADILs, USMTF, OSD Tactical data Link Management plans TDLMP, Joint Interface Requirements
- Total 4317

**FY 2001 Planned Program**

- 479 Evaluate and certify IT/C4ISR systems interoperability for FDD, Joint experiments to assure compliance with the Technical and System Architectures
  - 463 Provide DIL System Engineering and Integration support for conduct of experiments and evaluations to support FDD, Joint Tests, and testing related to development of ATD's and STO's
  - 200 Provide systems engineering, integrated support & field support for identification and resolution of systems' discrepancies and inconsistencies identified during evaluations
  - 409 Developed and published 188-220C and 47001D application header standards
  - 325 Developed/Joint approved new VMF messages
  - 332 Joint Approved 50 VMF change proposals
  - 65 Maintained VMF database and provided two new versions to customers
  - 210 Conducted 6 Army and Joint Configuration control boards
  - 509 Evaluated, processed and obtained approval of 1100 change proposals
  - 707 Conducted 10 Joint certification testings to include 30 operational systems, and developed over 500 proplem reports for analysis by Joint services
  - 167 Represented the Army in over 24 Joint TADILs, USMTF, OSD Tactical data Link Management plans TDLMP, Joint Interface Requirements
  - 95 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Program
- Total 3961

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604805A - Command, Control and Communications                  Sys Eng Dev</b>	PROJECT <b>485</b>
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**FY 2002 Planned Program**

- 500 Evaluate and certify IT/C4ISR systems interoperability for FDD, Joint experiments to assure compliance with the Technical and System Architectures
  - 482 Provide DIL System Engineering and Integration support for conduct of experiments and evaluations to support FDD, Joint Tests, and testing related to development of ATD's and STO's related to the development of the Objective Force.
  - 200 Provide systems engineering, integrated support & field support for identification and resolution of systems' discrepancies and inconsistencies identified during evaluations
  - 303 Developed and published 188-220D and 47001D application header standards
  - 325 Developed/Joint approved new VMF messages
  - 332 Joint approved 50 VMF change proposals
  - 81 Maintained VMF data base and provided two new versions to customers
  - 310 Conducted 8 Army and Joint Configuration control boards
  - 549 Evaluated, processed and obtained approval of 1100 change proposals
  - 750 Conducted 10 Joint certification testings to include 30 operational systems, and developed over 500 proplem reports for analysis by Joint services
  - 167 Represented the Army in over 24 Joint TADILs, USMTF, OSD Tactical data Link Management plans TDLMP, Joint Interface Requirements
- Total 3999

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

**C. Acquisition Strategy:** The efforts funded in this project are non-system specific, interoperability experimentation, evaluation and certification across multiple systems. The contractual efforts/services are obtained from existing competitive omnibus support services contracts.



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications**  
**Sys Eng Dev**

**PROJECT**  
**485**

<b>D. Schedule Profile</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Initial Brigade Combat Teams Experiments/Evaluations	3-4Q	1-4Q	1-4Q	0	0	0	0	0
Evaluate, certify systems for and support FDD	1-4Q	1-3Q		0	0	0	0	0
Evaluate, certify systems for and support Joint Contingency Force AWE	1-4Q			0	0	0	0	0
Evaluate, certify systems for the support Corps AWE			4Q	0	0	0	0	0
Evaluate, experiment, and provide systems integration for testing of ACTD, ATD, & STO's	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Experiment/Evaluate Jint Interoperability in conjunction with CIPO initiatives	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Conduct Joint/Coalition Experiments	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Evaluate, certify systems for and support SDD	4Q	1-4Q	1-4Q	0	0	0	0	0
Evaluate, certify systems for and support FDC			1-4Q	0	0	0	0	0
Support EMPRS WRAP with integration/interoperability experimentation		2-4Q	1-4Q	0	0	0	0	0
DOE/JDEP Initial Concept/Evaluation/Experiments		1-4Q	1-4Q	0	0	0	0	0
Develop and maintain MIL-STD 188-220 B,C,D	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Develop and maintain 47001 standards	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Develop and maintain VMF Standards & standard databases	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Configuration Management and control of TADIL(A,B,J) and USMTF standards	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Represent Army on Army/DOD forums	1-4Q	1-4Q	1-4Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications Sys**  
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**PROJECT**  
**485**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labor (internal Govt)		USACECOM , Fort Monmouth, NJ	4685	1507		1507		0	0	0	0	0
b . Travel		USACECOM, Fort Monmouth, NJ	110	50		50		0	0	0	0	0
c . SBIR/STTR			0	95		0		0	0	0	0	0
Subtotal:			4795	1652		1557		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Support	C/CPFF	Arinc, Fort Monmouth, NJ	3630	824		876		0	0	0	0	0
b . Development Support	C/CPAF	Telos, Fort Monmouth, NJ	2952	784		885		0	0	0	0	0
c . Development Support	C/CPFF	CSC, Fort Monmouth, NJ	1574	226		206		0	0	0	0	0
d . Development Support	C/CPFF	C3I, Fort Monmouth, NJ	1039	172		172		0	0	0	0	0
e . Development Support	SS/CPFF	Mitre, Fort Monmouth, NJ	280	0		0		0	0	0	0	0

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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
f. Technical Support	C/CPFF	Marconi, Fort Monmouth, NJ	110	38		38		0	0	0	0	0
g. Equipment	Reqn	USACECOM	185	100		100		0	0	0	0	0
h. Equipment (Development Support)	FFP	GTE, Tauton, MA	106	0		0		0	0	0	0	0
i. Telecommunications	MIPR	USASC, Fort Huachuca, AZ	660	165		165		0	0	0	0	0
Subtotal:			10536	2309		2442		0		0	0	0

Remarks: \*Contracts/awards cited are 5 year (1 base + 4 option years). Future award dates imply future competitive award, contractor TBD.

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604805A - Command, Control and Communications Sys Eng Dev</b>	PROJECT <b>485</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			15331	3961		3999		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604805A - Command, Control and Communications Sys Eng Dev</b>					PROJECT <b>589</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
589 ARMY SYS ENGINEERING & WARFIGHTING TECH SUP	11619	8334	8451	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Army Systems Engineering & Warfighter Technical Support: The ASE provides essential technology expertise on all Systems Engineering and Technical Architecture (SE/TA) matters critical to gain Information Dominance and foster interoperability among all Army systems. The Joint Technical Architecture-Army (JTA-A) provides the "building code" foundation for designing, building, fielding, and supporting interoperable systems in an expedient and cost-effective manner. Army System Engineer (ASE) supports CIO/DISC4/ADO in defining and maintaining the JTA-A and technically influences development and implementation of the JTA. ASE identifies new and emerging standards for integration of new technologies into existing Army Systems and ATD/ACTDs to support Army 2010. The ASE's work efforts associated with the development and implementation of the JTA-A under this project are critical path elements to achieve the Army's DIV XXI, CORPS XXI, and Army XXI digitization mission and Army's Transformation to the Objective Force and to provide the ability to fight and win on tomorrow's battlefield, and assure compatibility with both Joint and Coalition Warfighters. WTS provides essential technical field expertise, on-site architectural/system analysis and execution planning to integrate emerging technologies and support the next generation of digitization across all 21st Century Battlefield Operating Systems. Promotes joint experiments in conjunction with Joint C4ISR Battle Center (JBC) to foster interoperability between Army Systems and those of other services both joint and coalition. WTS conducts interservice coordination to identify candidate systems, provides expert analysis to define appropriate architecture, evaluates notional designs and conducts performance/cost benefit analysis to recommend viable tradeoffs. Selects target architecture and works with warfighter to engineer appropriate field experiments (Battlelab Warfighter Experiments (BLWE), Army Warfighter Experiments (AWE) and warfighter rotations) to allow selection of appropriate systems and sub-systems for follow-on development and acquisition. Performs technical coordination/integration activities to accelerate system enhancements providing solutions to current user problems in the field capturing soldier ingenuity through on-the-spot soldier input/feedback. Supports development of the operational architecture and implementation of new warfighter information technologies throughout the force structure to achieve Army Enterprise Architecture (AEA) objectives. Develops notional technology driven C4ISR architectures for Army Experimentation Campaign Plan (AECPP) in support of AEA. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604805A - Command, Control and Communications                  Sys Eng Dev</b>	PROJECT <b>589</b>
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**FY 2000 Accomplishments**

- 1260 Conduct Major design evaluations for Joint Technical Architecture-Army (JTA-A) Interoperability. System implementations: ABCS/ABCSLight, CMPS(COBRA), Land Warrior redesign V.1.0, Aviation Migration Planning.
- 1292 Ensure JTA-A Interop Implementation and Assess JTA-A compatibility for Army and S&T Programs. SSEB RFPS: Whole Logistics Modernization, RDFCS, BCT, FCS, TAIS, Aerial Common Sensor, Profiler.
- 779 Assess JTA-A interop for Army Systems. Ad Hoc assessments: Aviation JVMF proposal, aviation symbology, DII COE RDBMS analysis.
- 808 Technically influence the development/implementation of Joint Technical Architecture (JTA). JTA-A V6.0
- 591 Maintain existing JTA-A Information Technical Standards. ATM update/rewrite, imagery update/rewrite, update PKI stds profile with JIEO.
  
- 608 Investigate information technical standards for inclusion in JTA-A/JTA. Sensor payload integration with WSTAWG, IPv(6) assessment, Gigabit ethernet-I3A.
- 482 Technically influence commercial and international standards forums. MANET, TBRPF.
- 942 Engineer joint connections for C4IEWS research & development experiment with upgraded Enroute Mission Planning and Rehearsal System (EMPRS). Extend Joint Contingency Force (JCF) architecture into the joint architecture in conjunction with Joint Forces Command (JFCOM) and the Joint Battle Center. Participate in other Joint Architecture development.
- 785 Introduce early C4IEWS Army 2010 and Beyond concepts into existing programs. Conduct requirements oriented review of next generation tech base programs. Develop plans for the establishment of new ATDs, ACTDs that address emerging architectural deficiencies. Develop plans for the establishment of new ATDs, ACTDs that address emerging architectural deficiencies.
- 572 Integrate digitization technology down to soldier. Provide field engineering support to user experiments. Discover architectural deficiencies through participation in final stages of experiment and continue to enhance solutions to refine the architecture.
- 3500 Support for JCF AWE: ADA support, Central Technical Support Facility (CTSF) Exercise support, Systems engineering support, Integration of installation kits for division and PEO vehicles.

Total 11619

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**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604805A - Command, Control and Communications  
Sys Eng Dev**

PROJECT

**589**

## FY 2001 Planned Program

- 1300 Conduct Major design evaluations for Joint Technical Architecture-Army (JTA-A) Interoperability.
- 1321 Ensure JTA-A Interop Implementation and Assess JTA-A compatibility for Army and S&T Programs.
- 800 Assess JTA-A interop for Army Systems.
- 815 Technically influence the development/implementation of Joint Technical Architecture (JTA).
- 566 Maintain existing JTA-A Information Technical Standards.
- 583 Investigate information technical standards for inclusion in JTA-A/JTA.
- 445 Technically influence commercial and international standards forums.
- 925 Support early BCT field experimentation. Engineer EMPRS system into Army Architecture. Extend digitization experiment to joint/coalition forces. Support the development of conceptual joint/coalition experiment of digitization across all force levels - Light, Medium and Heavy.
- 850 Plan and integrate early introduction to BCT/Future Combat Systems (FCS) fielding with total force digitized/network centric concept. Plan for next generation digitization systems. Incorporate after action, lesson learned transition into Objective Force.
- 532 Implement distributive/network centric concepts to Force XXI. Engineer product improvement/technical insertion into BCT fielding.
- 197 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Program

Total 8334

## FY 2002 Planned Program

- 1350 Conduct Major design evaluations for Joint Technical Architecture-Army (JTA-A) Interoperability.
- 1321 Ensure JTA-A Interop Implementation and Assess JTA-A compatibility for Army and S&T Programs.
- 800 Assess JTA-A interop for Army Systems.
- 811 Technically influence the development/implementation of Joint Technical Architecture (JTA).
- 623 Maintain existing JTA-A Information Technical Standards.
- 640 Investigate information technical standards for inclusion in JTA-A/JTA.
- 506 Technically influence commercial and international standards forums.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
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**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications**  
**Sys Eng Dev**

**PROJECT**  
**589**

**FY 2002 Planned Program (Continued)**

- 950 Extend C4ISR architecture into a joint experiment in conjunction with JFCOM/JBC and TRADOC. Nominate a joint C4ISR ACTD. Assess JTF Rear and Forward information support capabilities for interoperability. Participate in Joint Architecture development.
- 850 Plan and integrate the evolution of AECF initiatives in BCT/Future Combat System (FCS). Plan for BCT/FCS transition strategy. Engineer technical insertion of C4ISR into Objective Force.
- 600 Interact with warfighters and provide field engineering support to future user experiments. Discover architectural deficiencies through participation in final stages of experiments. Provide potential technical solutions to the PM's PEO and OA/SA IPT's.

Total 8451

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

**C. Acquisition Strategy:** The efforts funded in the project are non-system specific, therefore no acquisition strategy is provided.

<b><u>D. Schedule Profile</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
TA - JTA-A 6.0	3Q			0	0	0	0	0
TA - JTA-A 7.0			1Q	0	0	0	0	0
TA - JTA 4.0		2Q		0	0	0	0	0
TA - JTA-A 8.0				0	0	0	0	0
TA - JTA 5.0			3Q	0	0	0	0	0
SA - 1DFSAs Updates	2Q	2Q		0	0	0	0	0
SA - AMC-ISA V2.0		1Q	1Q	0	0	0	0	0
SA-BCT Initial/Interim	4Q			0	0	0	0	0
SA-2DFSAs Updates	2Q	2Q		0	0	0	0	0
SA - 1DCSA Updates	2Q	2Q		0	0	0	0	0
SA - I3A Updates	3Q	3Q		0	0	0	0	0
AECF Field Experimentation Support		4Q		0	0	0	0	0
Joint Architectural Development			3Q	0	0	0	0	0
JCF AWE R&D Architecture Joint Experiment Engineering		2Q		0	0	0	0	0



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<b><u>D. Schedule Profile (continued)</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
AECP Initiative Integration		4Q	4Q	0	0	0	0	0
JCF AWE Initiative Implementation	2Q			0	0	0	0	0
JCF AWE Support	4Q			0	0	0	0	0
Army 2010 and Beyond Concept Introduction	1Q			0	0	0	0	0
AECP to BCT/FCS Transition Strategy Engineering		4Q	3Q	0	0	0	0	0
JCF AWE After Action Technology Insertions		2Q		0	0	0	0	0
Objective Force Technical C4I Concept Support		3Q	3Q	0	0	0	0	0
Joint/Coalition Concept Integration		1Q	2Q	0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications Sys**  
**Eng Dev**

**PROJECT**  
**589**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Government Systems Engineering Support		ASEO, Fort Monmouth, NJ	4579	1784		1880		0	0	0	0	0
b . Engineering Support		ISEC, Fort Huachuca, AZ	842	250		250		0	0	0	0	0
c . Contract Systems Engineering Support	C & FPI	CSC, Eatontown, NJ	3521	1096		1158		0	0	0	0	0
d . Contract Systems Engineering Support	SS & FP	MITRE, Tinton Falls, NJ	2264	798		970		0	0	0	0	0
e . Contract Systems Engineering Support	C & FP	GTE/BBN, Cambridge, MA	410	600		600		0	0	0	0	0
f . Contract Systems Engineering Support	C & FP	Litton, Reading, MA	245	0		0		0	0	0	0	0
g . Contract Systems Engineering Support	C & FP	Battelle, Alexandria, VA	300	200		100		0	0	0	0	0
h . Contract Systems Engineering Support	C & FP	SRI, Menlo Park, CA	0	200		200		0	0	0	0	0
i . Contract Systems Engineering Support	C & FP	SRC, Atlanta, GA	302	140		140		0	0	0	0	0

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . Contract Systems Engineering Support	C & FP	HTPi, Shrewsbury, NJ	125	300		300		0	0	0	0	0
k . Contract Systems Engineering Support	C & FP	Gemini, Billerica, MA	137	78		68		0	0	0	0	0
l . Systems Engineering and Integration		WTS - ISIO CECOM, Fort Monmouth, NJ	1111	833		875		0	0	0	0	0
m . Contract Support	C & T&M-R	C3ISGI, Tinton Falls, NJ	1580	980		0		0	0	0	0	0
n . Contract Support	C & T&M	TBD	0	0		1275		0	0	0	0	0
o . Contract Support	C & T&M	SAIC, Falls Church, VA	932	259		0		0	0	0	0	0
p . Contract Support	C & T&M	PTG, Springfield, VA	88	0		0		0	0	0	0	0
q . Contract Support	C & T&M	Datron, Simi Valley, CA	305	0		0		0	0	0	0	0
r . System Development and Integration		PEO C3S, PM TOCS, Fort Monmouth, NJ	25	0		0		0	0	0	0	0
s . Contract Support	C & FP	CSC, Eatontown, NJ	1600	0		0		0	0	0	0	0
t . Contract Support	C & FP	TRW, Domingues Hills, CA	1281	0		0		0	0	0	0	0

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**589**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
u . Contract Support	C & FP	Lockheed Martin, Eatontown, NJ	545	0		0		0	0	0	0	0
v . Travel		ASEO/ISIO CECOM, Fort Monmouth, NJ	728	200		235		0	0	0	0	0
w . Overhead		ASEO/ISIO CECOM, Fort Monmouth, NJ	664	419		400		0	0	0	0	0
x . SBIR/STTR		Funds reprogrammed for SBIR/STTR programs	0	197		0		0	0	0	0	0
<b>Subtotal:</b>			21584	8334		8451		0		0	0	0

Remarks: The Joint Venture Office at TRADOC sent a one-time, additional \$3.5M under Line D589 to support the Joint Contingency Force Army Warfighter Experiment (JCF AWE) to be exercised Sep 00.

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**PROJECT**  
**589**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

<b>Project Total Cost:</b>			21584	8334		8451		0		0	0	0
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				<b>Sys Eng Dev</b>						
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
591 WPN SYS TECH ARCH (WSTA)	2340	2433	2406	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Weapons System Technical Architecture: The Joint Technical Architecture-Army (JTA-A) provides the "building code" foundation for designing, building, fielding, and supporting interoperable systems in an expedient and cost-effective manner. The Weapons System Technical Architecture (WSTA) identifies new and emerging standards for integration of new technologies into existing Army Weapon Systems in support of Army digitization efforts. WSTA will define weapon system domain exceptions and extensions to the JTA and JTA-Army. It will promote an open systems approach in Army weapon systems. It will work to expand the Defense Information Infrastructure Common Operation Environment concept to properly accommodate Army weapon systems. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 64 Developed, updated and maintained Army Weapon System Common Operating Environment (COE) Application Programming Interfaces (API) for Battlefield Digitization Software
  - 254 Developed and maintained Weapon System Human Computer Interface style guide and Joint Technical Architecture-Army/Joint Technical Architecture (JTA-A and JTA) Appendix F
  - 1071 Developed and maintained weapon software Application Programming Interfaces and developed conformance tests
  - 85 Supported the development of the WSTAWG COE
  - 85 Developed interoperability threads for the Weapon Systems Subdomain
  - 290 Integrated COE software into Army Weapon Systems
  - 136 Developed COE prototype; supported Joint Real Time Defense Information Infrastructure COE
  - 35 Developed First Digitized Division Interoperability Threads
  - 90 Interoperability testing between weapon systems and Army Battle Command Systems
  - 230 Engineering and Program Development
- Total 2340

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Sys Eng Dev**

PROJECT

**591**

## FY 2001 Planned Program

- 350 Update the WSTAWG Framework Version 4.0, develop reference architecture, and perform cost analyses.
  - 538 Mature the Mapping API and OE API.
  - 284 Develop & mature interoperability threads; certify threads interoperable threads
  - 310 Develop Security Architecture and continue to work with National Security Agency on security certification of an Real Time Operating System.
  
  - 528 Develop the Weapon COE Prototype and software components.
  - 351 Engineering and Program Development
  - 72 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program
- Total 2433

## FY 2002 Planned Program

- 249 Update the WSTA Framework to Version 5.0
  - 110 Develop and test OE Version 3.0 and WSMS 2.5
  - 435 Develop and certify interoperability threads for Army Certification Events: Second Digitized Division and First Digitized Corps
  - 475 Test and certify a WSTA security architecture
  - 500 Field Weapon COE in two weapon subdomains; establish COE as an AMC system
  - 262 Maintain and update the JTA-A and JTA
  - 375 Engineering and Program Development
- Total 2406

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**0604805A - Command, Control and Communications  
 Sys Eng Dev**

PROJECT  
**591**

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

**C. Acquisition Strategy:** The efforts funded in this project are non-system specific, interoperability experimentation, evaluation and certification across multiple systems. The contractual efforts/services are obtained from existing competitive Omnibus support services contracts.

<b><u>D. Schedule Profile</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Develop/refine reference Architecture for Weapons mapping software	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Conduct interoperability demonstration	2-3Q	2-3Q		0	0	0	0	0
Complete Version 3.0 OE	4Q			0	0	0	0	0
Update WSTAWG Framework Version 4.0		1-4Q		0	0	0	0	0
Develop Weapon Common Operating Environment Prototype		2-4Q		0	0	0	0	0
Insert/update new computer science technology advances into weapon system software		3-4Q	1Q	0	0	0	0	0
Institutionalize processes for life cycle software maintenance				0	0	0	0	0



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications Sys**  
**Eng Dev**

**PROJECT**  
**591**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . USAISSC	MIPR	Fort Belvoir, VA	64	0		0		0	0	0	0	0
b . TACOM-ARDEC	MIPR	Picatinny Arsenal, NJ	254	355		250		0	0	0	0	0
c . TACOM	MIPR	Warren, MI	1071	1083		1099		0	0	0	0	0
d . GSA	MIPR	Huntsville, AL	550	632		670		0	0	0	0	0
e . Nichols Research Corporation	Contract	Huntsville, AL	171	0		0		0	0	0	0	0
Subtotal:			2110	2070		2019		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications Sys**  
**Eng Dev**

**PROJECT**  
**591**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . AMCOM In-house		Redstone Arsenal, AL	230	368		375		0	0	0	0	Continue
Subtotal:			230	368		375		0		0	0	Continue

<b>Project Total Cost:</b>			2340	2438		2394		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604805A - Command, Control and Communications</b>					<b>PROJECT</b> <b>615</b>	
				<b>Sys Eng Dev</b>						
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
615 JTRS-GROUND DOMAIN INTEGRATION	5836	28281	104034	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Project D615 supports the Joint Tactical Radio System (JTRS)-RDTE effort. FY01-07 funding supports aggressive development of the JTRS program. The development strategy includes a JPO JTRS Step 2C initiative of 220 ruggedized prototypes/40 Engineering Development Models (EDMs). A follow-on JTRS Step 2C Vehicular hardware acquisition for approximately 400 additional prototypes in the FY02-03 timeframe is required for continued experimentation in the Corps. A Cluster 1 development of approximately 150 ground/150 airborne EDMs will be initiated in FY02, and a Low Rate Initial Production (LRIP) in the FY05 timeframe. The JTRS-Army RDTE program will enable the Army to acquire and field a family of affordable, scaleable, high capacity, interoperable radio sets based on a common JTRS Software Communications Architecture (SCA). The JTRS is a key enabler of the Army Transformation and will provide critical communications capabilities across the spectrum of operations in a Joint environment. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 683 NTDRS Management Services (NTDRS Program Management Office Support)
  - 66 NTDRS Test and Evaluation (Completion of NTDRS Electronic Proving Ground Testing)
  - 4563 NTDRS Product Development (Completion of NTDRS Engineering Development deployment to FDD, and Brigade Combat Team Support)
  - 387 NTDRS Support Costs (Systems Engineering and Integration Support)
  - 137 Product Development (ABCS System Engineering and Integration Efforts)
- Total 5836

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604805A - Command, Control and Communications  
Sys Eng Dev**

PROJECT

**615**

## FY 2001 Planned Program

- 7005 NTDRS Product Development (NTDRS Completion of development, and upgrade of approximately 40 engineering development models, and technical support)
- 587 NTDRS Customer Test EPG
- 6671 JTRS Product Development (JTRS Step 2C Hardware Development/Software/Waveform Development)
- 2173 JTRS Product Development (JTRS Step 2C Ancilliary Equipment and Logistics and Engineering Services)
- 534 JTRS Product Development (Antenna and Cosite Studies)
- 1092 Product Development (ABCS System Engineering and Integration Efforts)
- 3679 Test and Evaluation (JTRS Step 2C EPG Testing/Validation/Modelling and Simulation)
- 1735 JTRS Support Costs (JTRS Engineering and Technical Support)
- 2972 JTRS Management Services (JTRS Program Management Office Support)
- 1000 JTRS Management Services (JTRS Milestone/Source Selection Activities)
- 833 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Program

Total 28281

## FY 2002 Planned Program

- 467 JTRS Product Development (JTRS Step 2C Contract Hardware Development)
- 422 JTRS Product Development (JTRS Step 2C Ancilliary Equipment)
- 1842 JTRS Product Development (JTRS Step 2C Logistics and Engineering Services)
- 72735 JTRS Product Development (JTRS Cluster 1 Vehicular and Airborne Hardware Design and Development of Prototypes)
- 17545 JTRS Product Development (JTRS Additional Step 2C Acquisition)
- 1101 JTRS Test and Evaluation (JTRS - Step 2C EPG Test/Customer JTRS Test and Evaluation)
- 1854 JTRS Support Costs (Systems Engineering and Integration, Technical Support)
- 4546 JTRS Management Services (JTRS Program Management Office Support)
- 1732 NTDRS Support Costs (NTDRS Testbed and Technical Support)

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications**  
**Sys Eng Dev**

**PROJECT**  
**615**

**FY 2002 Planned Program (Continued)**

- 1790 JTRS Product Development (JTRS Additional Step 2C Ancillaries Log & Eng Support)

Total 104034

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA, Army, ADDS, BU1400/EPLRS*	53016	80810	46332	0	0	0	0	0	0	0
OPA, Army, ADDS, BU1400/JTRS*	0	0	0	0	0	0	0	0	0	0
RDTE, JTRS, 0604280A/D162	35537	61648	80449	0	0	0	0	0	0	0
RDTE, JTRS, 0603713A/D370 - Army Data Distribution System	3724	17	0	0	0	0	0	0	0	0

Note: \*The BU1400 BLIN is established to procure EPLRS through FY04, which meets the current APO. This same BLIN will be the core procurement funding line for JTRS, as "productionized" systems become available. Transition to JTRS procurement may occur sooner than FY 05; if segments of the JTRS evolve earlier (FY03-FY04). RDTE 0603713A/D370 FY2000/2001 funding of \$10K and \$17K supports NTDRS efforts and D370 funding FY99 and prior supports NTDRS only. FY2000 D370 funding of \$3714K supports JTRS efforts.

**C. Acquisition Strategy:** Near Term Digital Radio System(NTDRS): The NTDRS program maximizes the use of Non-Developmental Item (NDI) and Commercial Off-the-Shelf (COTS) hardware and software. An RDTE contract was awarded competitively in January 1996. In FY2000, the NTDRS participated in various test exercises such as the FBCB2 EPG Field Test, FDTE/Customer Test, the Joint Contingency Force (JCF), and NTC Rotation 00-10 exercises to provide the Army's Tactical Internet TOC-TOC data communications. Planned distribution of the NTDRS into the FDD for continued experimentation purposes is scheduled for 2Q FY 2001. In FY01 and out NTDRS will be providing the TOC to TOC function in the first and second Brigade Combat Teams, FBCB2 exercises, and future NTC rotations, until JTRS Step 2C radios replace existing NTDRS radios.

Joint Tactical Radio System (JTRS): In FY2001, project D615 will support JTRS Army hardware developments and NTDR activities. The JTRS will support an evolutionary acquisition strategy. The JTRS Joint Program Office (JPO) is responsible for common core activities including developing, maintaining, and evolving the JTRS open standards architecture, providing re-coded versions of legacy waveforms to operate on JTRS architecture compliant hardware, and providing a certifying infrastructure for hardware/software compliance. Following the architecture's validation and a market survey of industry's capabilities, a Defense Acquisition Executive program review was held in 1QFY01. Following that review, the Services, which retained acquisition and weapon system integration responsibility, will begin acquiring scaleable JTRS systems commensurate with Service migration plans. In FY02 to FY03 timeframe, the Army will acquire approximately 400 additional Step 2C JTRS radios to experimentation in the III Corps and 3rd ACR and

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications**  
**Sys Eng Dev**

**PROJECT**  
**615**

for training base and float needs. These radios will be used to validate wideband networking requirements in the Corps. The Army's plan is to award a contract for additional form, fit and function identical Step 2C radios to validate these requirements and provide for possible replacement of NTDR assets. In FY02, the Cluster 1 development will be initiated to develop multi-channel ground and airborne configurations. The FY03-07 budget supports operational testing of the Step 2C radios, DT/OT testing for Cluster 1 and IOT&E testing for the LRIP radios. Future JTRS Army efforts will also focus on handheld and dismounted configurations.

<b>D. Schedule Profile</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
NTDRS CTSF ABCS Software Updates	1-4Q	1-4Q	1-4Q	0	0	0	0	0
NTDRS Participation FBCB2 Field Test II/FDTE/Customer Test	2Q			0	0	0	0	0
NTDR JCF AWE Participation		1Q		0	0	0	0	0
NTDRS EPG NTDRS Field Test III		1-2Q		0	0	0	0	0
NTDRS Deployment to Brigade Combat Team 1		2Q		0	0	0	0	0
NTDRS Deployment to Brigade Combat Team 2			1Q	0	0	0	0	0
NTDRS Participation NTC/01-06/02-05/02-08	4Q	2-3Q	2-3Q	0	0	0	0	0
NTDRS Support Division Combat Exercise (DCX 1 and 2)		2-3Q		0	0	0	0	0
NTDRS Participation FBCB2 Field Test III & Limited User Test 3		1-2Q		0	0	0	0	0
NTDRS Participation FBCB2 Limited User Test IV		4Q	1Q	0	0	0	0	0
NTDRS Complete NTDRS FDD Deployment		2Q		0	0	0	0	0
NTDRS Participation in FBCB2 IOT&E			1Q	0	0	0	0	0
JTRS-Army Architecture Provided by JTRS-JPO - 2.0 SCA Architecture		1Q		0	0	0	0	0
JTRS-JPO DAE Review - OCT		1Q		0	0	0	0	0
JTRS-Army Step 2C Award*	3Q			0	0	0	0	0
JTRS-Army Milestone B			1Q	0	0	0	0	0
JTRS-Army Cluster 1 Ground & Airborne EMD Award			2Q	0	0	0	0	0
JTRS-Army Step 2C EPG Testing/Validation			3Q	0	0	0	0	0
JTRS-Army Step 2C EPG Operational Assessment			2Q	0	0	0	0	0
JTRS-Prototypes Contract Award Additional Step 2C Qty			3Q	0	0	0	0	0
JTRS-Army Additional Step 2C Prototypes EPG Operational Assesment Ramp-up and Conduct of Test				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604805A - Command, Control and Communications                  Sys Eng Dev</b>	PROJECT <b>615</b>
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<b><u>D. Schedule Profile (continued)</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
JTRS-Army Cluster 1 LRIP Option Award				0	0	0	0	0
JTRS-Army Cluster 1 Ground & Airborne DT/OT				0	0	0	0	0
JTRS-Army Cluster 1 Ground & Airborne Ramp-up & Conduct IOT&E				0	0	0	0	0
JTRS-Army Handheld and Dismountable Milestone B				0	0	0	0	0
JTRS-Army Handheld and Dismountable Engineering & Manufacturing Development Initiation				0	0	0	0	0
JTRS-Army Handheld and Dismountable EPG Testing				0	0	0	0	0
JTRS-Army Handheld and Dismountable Milestone C				0	0	0	0	0
JTRS-Army Handheld and Dismountable LRIP Award				0	0	0	0	0
JTRS-Army Handheld and Dismountable IOT&E				0	0	0	0	0
JTRS-Army Handheld and Dismountable Full Rate Production Award				0	0	0	0	0

\* Funded under PE 0603713A Project D370 and PEO in FY00

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications Sys**  
**Eng Dev**

**PROJECT**  
**615**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . NTDRS CPIF/T&M Efforts*	C/T&M/CPI F	ITT, Fort. Wayne, IN	3463	7005	2-4Q	0		0	0	0	0	0
b . Brigade Combat Team Support	T&M	ITT, Fort Wayne, IN	1100	0		0		0	0	0	0	0
c . NTDRS Ancillary Equip (Network Management Terminal Upgrade)	MIPR	PM, CHS, Fort Monmouth, NJ	28	0		0		0	0	0	0	0
d . JTRS Army Step 2C Hardware Development and Cost of Prototypes	C/OTA	BAE Systems, Wayne, NJ	0	1071	1Q	467	1Q	0	0	0	0	0
e . JTRS Army Step 2C Software/Waveform Development	C/OTA	BAE Systems, Wayne, NJ	0	5600	4Q	0		0	0	0	0	0
f . JTRS Step 2C Anc Equip/Log & Engrg	C/OTA/T&M	BAE Systems, Wayne, NJ	0	1740	2-4Q	2264	1Q	0	0	0	0	0
g . JTRS Cluster 1 Hardware Vehicular and Airborne	TBD	TBD	0	0		72735	1-2Q	0	0	0	0	0
h . ABCS System Engineering and Integration Efforts	TBD	TBD	137	1092	2-3Q	0		0	0	0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications Sys**  
**Eng Dev**

**PROJECT**  
**615**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
i. JTRS Development - Additional Step 2C	TBD	TBD	0	0		17545	3Q	0	0	0	0	0
j. NMT Step 2C	FFP	PM, CHS, Fort Monmouth, NJ	0	433	2Q	772	2Q	0	0	0	0	0
k. SBIR/STTR Reprogramming			0	833	1Q	0		0	0	0	0	0
l. JTRS Development-Antenna & Cosite Studies	TBD	TBD	0	534	4Q	0		0	0	0	0	0
m. JTRS Development-Additional Step2C Acq-Log & Engrg Devel	TBD	TBD	0	0		1018	1-3Q	0	0	0	0	0
Subtotal:			4728	18308		94801		0		0	0	0

Remarks: \*NTDRS efforts prior to FY 2000 were charged against 0603713A, D370

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications Sys**  
**Eng Dev**

**PROJECT**  
**615**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . NTDRS Test Support-RDEC	MIPR	RDEC, Fort Monmouth, NJ	143	0		0		0	0	0	0	0
b . NTDRS Training Support-EPS	PWD	EPS, Fayetteville, NC	61	0		0		0	0	0	0	0
c . NTDRS Technical Support-Mykotronx	PWD	Mykotronx, Torrance, CA	15	0		0		0	0	0	0	0
d . NTDRS Technical Support-C3I Systems	PWD	C3I Systems, Tinton Falls, NJ	168	0		0		0	0	0	0	0
e . NTDRS NTDRS Logistics & Technical Support	PWD	ITT, Fort Wayne, IN	0	0		1732	1-2Q	0	0	0	0	0
f . JTRS Technical Support	MIPR	RDEC, Fort Monmouth, NJ	0	839	2Q	990	1Q	0	0	0	0	0
g . JTRS Test Support	PWD	SEMCOR/TITAN Co., Mclean, VA	0	99	3Q	101	1Q	0	0	0	0	0
h . JTRS System Engineering	PWD	C3I Systems, Tinton Falls, NJ	0	103	2Q	174	1Q	0	0	0	0	0
i . JTRS Technical Support	MIPR	Miscellaneous	0	694	1-3Q	589	1-2Q	0	0	0	0	0
Subtotal:			387	1735		3586		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications Sys**  
**Eng Dev**

**PROJECT**  
**615**

Remarks: \*NTDRS - prior to FY 2000 were charged against 0603713A, D370

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . NTDRS Field Testing	MIPR	EPG, Fort Huachuca, AZ	66	587	2Q	0		0	0	0	0	0
b . JTRS Step 2C EPG Qual Testing/Customer Testing	MIPR	EPG, Fort Huachuca, AZ	0	2270	2-3Q	0		0	0	0	0	0
c . JTRS EPG Testbed and Test Planning	MIPR	EPG, Fort Huachuca, AZ	0	1084	1Q	1101	1Q	0	0	0	0	0
d . JTRS Additional Step 2C Prototype EPG Operational Assessment Rampup and Test Conduct	MIPR	EPG, Fort Huachuca, AZ	0	0		0		0	0	0	0	0
e . JTRS Modelling & Simulation	MIPR	TBD	0	325	4Q	0		0	0	0	0	0
Subtotal:			66	4266		1101		0		0	0	0

Remarks: \*NTDRS - prior to FY 2000 were charged against 0603713A, D370

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications Sys**  
**Eng Dev**

**PROJECT**  
**615**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . NTDRS Program Support*	MIPR	Fort Monmouth, NJ	655	0		0		0	0	0	0	0
b . JTRS Business/Engineering Management	MIPR	Various	0	1104	1-4Q	966	1-2Q	0	0	0	0	0
c . Tactical Radio Comm Sys Project Management Office Support	MIPR	Various	0	1342	1-3Q	2766	1-3Q	0	0	0	0	0
d . JTRS Travel/Training	MIPR	Various	0	186	1-4Q	286	1-4Q	0	0	0	0	0
e . JTRS MITRE Support	PWD	MITRE Corp., Mclean, VA	0	232	2Q	419	1Q	0	0	0	0	0
f . JTRS Acquisition Support	PWD	Sytex, Doylestown, PA	0	108	1Q	109	1Q	0	0	0	0	0
g . JTRS Milestone Prep & Source Selection Activities	Misc	Various	0	1000	4Q	0		0	0	0	0	0
Subtotal:			655	3972		4546		0		0	0	0

Remarks: \*NTDRS - prior to FY 2000 were charged against 0603713A, D370

Project Total Cost:			5836	28281		104034		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604805A - Command, Control and Communications Sys Eng Dev</b>					PROJECT <b>629</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
629 TACTICAL COMMUNICATIONS SYSTEM - ENGINEERING DEVEL	1788	14196	1841	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Protocol Investigation for Next Generation (PING) program's focus is on the evaluation of emerging communication protocols such as Internet Protocol version 6 in a controlled lab/testing environment for future Army networks, Objective Force and beyond the First Digitized Division (FDD). This program will determine the benefits of Army co-existence/migration from Internet Protocol version 4 (IPv4) to IPv6 and analyze the consequences of limited IPv4 addresses and the need for interoperability with future systems. This approach also provides a method to address and discover interoperability issues early in the development cycle. By providing continuous feedback to the Army System Engineering Office (ASEO), it is anticipated that technologies can be selected for future versions of the Joint Technical Architecture - Army (JTA-A) faster and with more confidence. Execution of this mission is a critical step in the evolution and maturation of communications networks beyond FDD, while at the same time enhancing the Army's tactical communications and demonstrating interoperability within the Army and Joint Community. Applied Communications and Information Networking (ACIN) evaluates high impact emerging commercial communications and networking technologies for use in military systems, architectures and impacts upon Network Centric Warfare. Emphasis is on evaluating and leveraging wireless and information or assurance technologies via demonstrations or integration into military systems and end to end solutions through commercialization. Output from this task will directly feed future versions of the JTA-A and the Weapons System Technical Architecture Working Group (WSTAWG). Note this program was previously funded under PE/Project 0603805A/D246. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan.

**FY 2000 Accomplishments**

- 1688 - Evaluated emerging new protocols/technologies (i.e., IPV6, reliable multicast, etc.) to enhance the Army's tactical communications. Provided recommendations to the Army System Engineering Office (ASEO) for incorporation into the JTA-A and Weapons System Technical Architecture working group.
- Proposed and formed new WSTAWG Communications IPT under the WSTAWG for development of communications interoperability analysis.
- 100 - Evaluated emerging standards for interfaces with different echelons and platforms related to Airborne networking/communications technologies.

Total 1788

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604805A - Command, Control and Communications                  Sys Eng Dev</b>	PROJECT <b>629</b>
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**FY 2001 Planned Program**

- 1632 - Evaluate interoperability and evaluate advanced technologies (i.e., reliable multicast, Internet Protocol version 6 (IPv6), mobile technologies, quality of service (QoS), Voice over IP (VOIP), secure protocols, etc) for the Army tactical communications. Provide recommendations/assessments to the Army System Engineering Office (ASEO) for incorporation into the JTA-A and Weapons System Technical Architecture working group. Participate in the Space and Naval Warfare (SPAWAR) ACTD.
    - Evaluate weapons system communications issues under the Weapons System Technical Architectue Working Group (WSTAWG) communications Integrated Process Team (IPT) and analyze and recommend communications network interoperability roadmap.
    - Participate in SPAWARS led ACTD on IPv6. Perform interoperability and Joint experiments.
  
  - 100 - Evaluate architectural capabilities, feasibility, interoperability transmission capabilities of emergin protocols for higher data rate communications on an airborne platform. Provide recommendations to ASEO for inclusion into the JTA-A.
  
  - 12069 - Investigate, identify and adapt emerging commercial wireless technologies that can be rapidly integrated into the DoD communications architecture.
    - Adapt network access security technologies and security architectures, based on existing commercial implementations of biometrics coupled with user profiles, to provide users with secure and immediate access to required services and information.
    - Establish a set of courses and seminars to educate DoD personnel in emerging innovative DoD-driven applications of information technology that can realize the vision of network centric warfare.
    - Investigate the feasibility of using FCC adopted Advanced Television Systems Committee (ATSC) commercial broadcast technologies (Digital TV and Orthogonal Frequency Multiplexing (OFDM)) to provide mobile military users with greatly improved high data rate wireless communications.
    - Analyze and adapt emerging methods, concepts and standards for ensuring that prioritized quality of service can be maintained in battlefield networks that are subjected to physical and cyber attacks.
  
  - 395 - Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Program
- Total 14196

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604805A - Command, Control and Communications  
Sys Eng Dev**

PROJECT

**629**

## FY 2002 Planned Program

- 1841 - Upgrade the advanced and distributed IPv6/IPv4 laboratory/testbed environment with latest versions of IPv4 services employed in the current digitized force, latest releases of IPv6, and latest data collection equipment.
  - Analyze Army digitized forces systems being fielded as part of the First Digitized Division (FDD), review the lessons learned from the Joint Contingency Force (JCF) Advanced Warfighting Experiment (AWE) and next generation systems being developed as part of the Future Combat System (FCS) to identify islands of IPv6/IPv4 co-existence that will exist due to organizational structure or limitations on communications systems.
  - Conduct laboratory experiments that demonstrate and characterize IPv6 protocols for: Addressing and the effect on mobility-both micro-mobility and network mobility; Routing and effects on bandwidth usage, Static addressing versus auto-configuration; Interoperability of IPv6 and IPv4, d) IPv6 QoS performance in a tactical environment; and IPSec mechanisms and implementations
  - Present to ASEO, WSTAWG Communications Integrated Process Team (IPT and commercial forums the findings from the analysis and laboratory evaluations to facilitate modifications to the IPv6 protocol suite during development
  - Participate in the CINC 21 Next Generation Information Operations Advanced Concept Technology Development (ACTD) to compare/evaluate the IPv6 security capabilities of IPv6 network with that of the USPACOM IPv4 network. Conduct experiments for the ACTD security analysis comparison report.

Total 1841

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

**C. Acquisition Strategy:** The objectives of this program are to: 1.) utilize a unique analysis/laboratory capability to evaluate emerging communications/networking technologies in a realistic tactical environment with focus on the Army Enterprise Architecture technical architecture (TA) 2.) make technical recommendations to ASEO in support of the JTA-A and WSTAWG 3.) help mitigate the risk normally associated with fielding new protocols and help to insure that interoperable and seamless bandwidth-on-demand communications is provided.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604805A - Command, Control and Communications Sys Eng Dev**

PROJECT  
**629**

<b>D. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
System Integration	4Q	3Q	3Q	0	0	0	0	0
Address Architecture Issues	2-4Q	2-4Q	2-4Q	0	0	0	0	0
Laboratory Testing	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Systems Integration (Airborne Communications)	4Q	2-4Q		0	0	0	0	0
Video Demonstration	4Q	4Q		0	0	0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications Sys**  
**Eng Dev**

**PROJECT**  
**629**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Systems Engineering		CECOM RDEC, Fort Monmouth, NJ	1112	1823		1141		0	0	0	0	0
b. Contract Services			0	0		0		0	0	0	0	0
c. 1)	Rqmts	MITRE	406	410		410		0	0	0	0	0
d. 2)	C-T&M PSLA	SRI, Eatontown, NJ	270	280		290		0	0	0	0	0
e. ACIN		Drexel Univ, Philadelphia, Pa	0	11288	2Q	0		0	0	0	0	0
f. SBIR/STTR			0	395		0		0	0	0	0	0
Subtotal:			1788	14196		1841		0		0	0	0

Remarks: In FY01 Congressional plus-up for Applied Communications and Information Networking (ACIN) Project with \$12.5M to empower the government user to effectively and efficiently capitalize on technology emerging from the commercial and consumer communications and networking industries by leveraging advances, influencing development efforts, implementing standards and delivering operational solutions.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604805A - Command, Control and Communications Sys**  
**Eng Dev**

**PROJECT**  
**629**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			1788	14196		1841		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604807A - Med Material/Med Bio Def Equip ED**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	9394	6261	8228	0	0	0	0	0	0	0
812 MIL HIV VAC&DRUG DEV	2290	151	0	0	0	0	0	0	0	0
832 COMBAT MEDICAL MATL ED	3280	2213	4041	0	0	0	0	0	0	0
834 SOLDIER SYS PROT-ED	662	681	887	0	0	0	0	0	0	0
849 INFEC DIS DRUG/VACC ED	3162	3216	3300	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This Engineering and Manufacturing Development Program funds: (1) improved medical equipment and drugs essential to enhance deployability and survivability by counteracting lethal and human performance degrading effects of infectious diseases; and (2) medical equipment essential to meeting medical requirements on the integrated battlefield, with emphasis on decreased size and weight, yet supporting large numbers of combat casualties. Additionally, foreign medical materiel may be procured for exploitation of advanced technology and development to meet Army medical defense goals. This program supports the full-scale development of vaccines, prophylactic and therapeutic drugs, resuscitation fluids, and drug products for human immunodeficiency virus (HIV). This program funds engineering and manufacturing development for both large and small combat casualty care end items for location of casualty, diagnosis, rapid intensive care delivery, intensive care evacuation platforms, and rapidly mobile, lightweight surgical facilities and equipment. Additionally, the program funds engineering and manufacturing development of medical equipment that provides protection against physiological, psychological, or environmental factors that degrade physical performance. This program is managed by the U.S. Army Medical Research and Materiel Command. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

Core projects without R-2A Exhibits which contain less than \$1M in FY 2002/2003 are described below:

Project 812, Military HIV Vaccine and Drug Development - Funds militarily relevant HIV medical countermeasures including engineering and manufacturing development of sufficient candidate vaccines and drugs to permit large-scale field testing and education/training materials.

Project 834, Soldier System Protection (Engineering Development) - Supports engineering development of preventive medicine materiel, including devices, pharmacologicals, and other tools to provide protection, sustainment, and enhancement of the physiological and psychological capabilities of soldiers in the face of combat operations under all environmental conditions.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604807A - Med Material/Med Bio Def Equip ED**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	9636	6318	8971	0
Appropriated Value	9705	6318	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-242	0	0	
c. Omnibus or Other Above Threshold Adjustments	-38	0	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	-31	-57	0	
Adjustments to Budget Years Since FY2001 PB	0	0	-743	
Current Budget Submit (FY 2002/2003 PB )	9394	6261	8228	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604807A - Med Material/Med Bio Def Equip ED</b>				<b>PROJECT</b> <b>832</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
832 COMBAT MEDICAL MATL ED	3280	2213	4041	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The project supports engineering and manufacturing development to field new and improved medical materiel essential for combat casualty care to reduce the logistical support requirements and minimize loss. The major contract is United Defense Limited Partnership. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 2811 Conducted tests and analysis of medical evacuation systems.
    - Received delivery of the engineering and manufacturing development vehicle for the Armored Medical Evacuation Vehicle (AMEV) and conducted limited user test.
    - Completed Critical Care System for Trauma and Transport device cost-benefit trade-off analysis. Completed health hazard assessment clinical and field testing. Gained positive user input through deployment in Kosovo.
  - 469 Conducted Milestone (MS) I In-Process Review (IPR) on potential Hemostatic Dressing formulations to determine the most effective formulation to control bleeding on the battlefield.
- Total 3280

**FY 2001 Planned Program**

- 734 Conduct testing and evaluations of medical evacuation systems.
  - Evaluate ability of Interim Armored Vehicle (IAV) to meet current operational requirements. Participate in Force Development Exercises of IAV to assess provision of medical care.
  - Complete an initial operational test and evaluation for initial version of Critical Care System for Trauma and Transport device. Conduct MS I/II.
- 738 Start the Food and Drug Administration (FDA) mandated phase 1 safety trials for the Hemostatic Dressing. Complete animal efficacy trials under Good Laboratory Practice for the Hemostatic Dressing.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604807A - Med Material/Med Bio Def Equip ED**

PROJECT  
**832**

**FY 2001 Planned Program (Continued)**

- 324 Conduct testing of field treatment/treatment aid devices.
  - Conduct sterility tests and in vitro tests; obtain FDA approval for Thawed Blood Processing System.
- 352 Conduct tests and prepare for milestones for medical monitoring and imaging systems.
  - Evaluate commercial technologies for Dental Filmless Digital Imaging System.
  - Conduct an initial operational test and evaluation for the Warrior Medic System.
- 65 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 2213

**FY 2002 Planned Program**

- 553 Demonstrate and perform testing of medical evacuation systems.
  - Implement necessary medical modifications to IAV and support fielding.
  - Conduct a MS III IPR for the initial version of Critical Care System for Trauma and Transport device, and initiate pre-planned product improvement to meet Operational Requirements Document (ORD) requirements.
- 2144 Start elective surgery trials using informed consent for hemostatic dressing.
- 664 Monitor and test field treatment/treatment aid devices.
  - Conduct in vivo tests; submit application for FDA approval of Thawed Blood Processing System; conduct MS III.
  - Conduct MS I, and initiate operational testing in the field of the Dental Field Treatment and Operating System.
- 680 Conduct tests and prepare for milestones for medical monitoring and imaging systems.
  - Conduct a MS III IPR for Filmless Digital Imager - medical version.
  - Start an initial operational test and evaluation for the Warrior Medic System.
  - Conduct a market investigation and complete an analysis of alternatives for the Non-Contact Heart Rate Monitor.

Total 4041

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604807A - Med Material/Med Bio Def Equip ED**

PROJECT  
**832**

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

**C. Acquisition Strategy:** Evaluate commercially developed materiel in government-managed trials.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Critical Care System for Trauma & Transport (MS I/II); (MS III)	4Q		4Q	0	0	0	0	0
Hemostatic Dressing (MS I); (MS II); (MS III)	4Q			0	0	0	0	0
Ceramic Oxygen Generator System (MS I); (MS II)			4Q	0	0	0	0	0
Thawed Blood Processing System (MS III)			4Q	0	0	0	0	0
Interim Armored Vehicle - Medical (MS II)				0	0	0	0	0
Hemostatic Foam (MS I); (MS II)				0	0	0	0	0
Filmless Digital Imager System (Dental) (MS III)		4Q		0	0	0	0	0
Filmless Digital Imager System (Medical) (MS III)			4Q	0	0	0	0	0
Dental Field Treatment and Operating System (MS II/III)				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604807A - Med Material/Med Bio Def Equip ED**

**PROJECT**  
**832**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Armored Medical Evacuation Vehicle	MIPR	PM Bradley, Warren MI	5709	0		0		0	0	0	0	0
b . Hemostatic Dressing			0	590		1632		0	0	0	0	0
Subtotal:			5709	590		1632		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

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



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604807A - Med Material/Med Bio Def Equip ED</b>	<b>PROJECT</b> <b>832</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

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

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			2061	1623		2409		0	0	0	0	0
Subtotal:			2061	1623		2409		0		0	0	0

<b>Project Total Cost:</b>			7770	2213		4041		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604807A - Med Material/Med Bio Def Equip ED</b>				PROJECT <b>849</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
849    INFEC DIS DRUG/VACC ED	3162	3216	3300	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project funds engineering and manufacturing development of sufficient candidate medical countermeasures to permit large-scale field testing and complete studies required for Food and Drug Administration (FDA) licensure. Work performed in laboratories and among troop populations is directed for prevention, diagnosis, and treatment of viral, bacterial, and parasitic diseases to prevent casualties, sustain operational performance, and minimize deaths and disability of armed forces during military operations. Preclinical trials, as well as phase 1, 2, and 3 trials, are performed as required for drug, vaccine, and device licensure by the FDA. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 1086    Continued 2-year preclinical carcinogenicity study of Tafenoquine, and conducted field site preparation for three phase 3 clinical trials to evaluate the effectiveness of Tafenoquine as an antimalarial prophylactic drug. Milestone (MS) II In-Process Review (IPR).
- 1129    Continued phase 3 studies in Egypt and Israel to evaluate effectiveness of Enterotoxigenic Escherichia coli (ETEC) vaccine at preventing traveler's diarrhea.
- 908    Completed preclinical evaluation and phase 1 safety trial of new adjuvant lot of Campylobacter vaccine. Also conducted phase 2 efficacy study for improved dose regimen of adjuvant lot of Campylobacter vaccine.
- 39    Maintained supplies of investigational new drugs for the experimental treatment of deployed warfighters diagnosed with Korean Hemorrhagic Fever or cutaneous Leishmaniasis.

Total    3162

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604807A - Med Material/Med Bio Def Equip ED</b>	PROJECT <b>849</b>
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**FY 2001 Planned Program**

- 1481 Complete preclinical carcinogenicity study of Tafenoquine, and conduct three phase 3 clinical trials to evaluate the effectiveness of Tafenoquine as an antimalarial prophylactic drug.
- 777 Complete phase 3 studies in Egypt and Israel to evaluate effectiveness of ETEC vaccine at preventing traveler's diarrhea.
- 876 Complete phase 2 efficacy study for improved dose regimen, and plan and start multi-year phase 3 pivotal trial for new adjuvant lot of Campylobacter vaccine.
- 82 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 3216

**FY 2002 Planned Program**

- 1356 Complete clinical trials and developmental testing of malarial/antimalarial vaccines, drugs, and diagnostics:
  - Complete three multi-year phase 3 clinical trials to evaluate the effectiveness of Tafenoquine, and prepare and submit a New Drug Application for Tafenoquine, an antimalarial prophylactic drug.
  - Complete developmental testing of a prototype Malaria Rapid Diagnostic Device (continued from PE/Project 0603807A/808, FY01), and prepare and submit a Pre-Market Approval application. Conduct MS II IPR.
- 894 Start and conduct studies on diarrheal vaccines.
  - Start 3-year phase 3 clinical trial to determine the effectiveness of Shigella flexneri vaccine to prevent traveler's diarrhea. Conduct MS II IPR.
  - Conduct multi-year phase 3 pivotal trial for new adjuvant lot of Campylobacter diarrheal vaccine.
- 1050 Conduct clinical study and trial, and appropriate reviews for grouped infectious disease vaccines and drugs (ETEC and Leishmaniasis):
  - Prepare and submit a Biologics License Application for the ETEC vaccine for preventing traveler's diarrhea.
  - Conduct phase 2 clinical study to determine the safety, sensitivity, and specificity of new Leishmania skin test components. Conduct MS II IPR.
  - Start 2-year phase 3 clinical trial to determine the effectiveness of paromomycin/gentamicin topical antileishmanial cream. Conduct MS II IPR.

Total 3300

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604807A - Med Material/Med Bio Def Equip ED**

PROJECT  
**849**

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

**C. Acquisition Strategy:** Test and evaluate in-house and commercially developed vaccine candidates in government-managed trials to meet FDA requirements.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
ETEC vaccine (MS III)				0	0	0	0	0
Campylobacter vaccine (MS III)				0	0	0	0	0
Tafenoquine antimalarial drug (MS II); (MS III)	4Q			0	0	0	0	0
Malaria Rapid Diagnostic Device (MS II); (MS III)			1Q	0	0	0	0	0
Leishmania skin test (MS II); (MS III)			1Q	0	0	0	0	0
Shigella flexneri (MS II); (MS III)			2Q	0	0	0	0	0
Paromomycin/Gentamicin (MS II); (MS III)			3Q	0	0	0	0	0
RTS,S malaria vaccine (MS II)				0	0	0	0	0
Artelinic Acid (MS II)				0	0	0	0	0
Shigella sonnei vaccine (MS II)				0	0	0	0	0
Japanese encephalitis vaccine (improved) (MS II)				0	0	0	0	0
Group B meningitis vaccine (MS II)				0	0	0	0	0
Dengue tetravalent vaccine (MS II)				0	0	0	0	0
Shigella dysenteriae vaccine (MS II)				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604807A - Med Material/Med Bio Def Equip ED</b>	<b>PROJECT</b> <b>849</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			1394	1346		1374		0	0	0	0	0
<b>Subtotal:</b>			1394	1346		1374		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			149	120		122		0	0	0	0	0
<b>Subtotal:</b>			149	120		122		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604807A - Med Material/Med Bio Def Equip ED</b>	<b>PROJECT</b> <b>849</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			2190	1571		1623		0	0	0	0	0
Subtotal:			2190	1571		1623		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . No product/contract costs greater than \$1M individually			558	179		181		0	0	0	0	0
Subtotal:			558	179		181		0		0	0	0

<b>Project Total Cost:</b>			4291	3216		3300		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>		PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier Engineering Development</b>								
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	24136	93717	89153	0	0	0	0	0	0	0
016 MINE SYSTEMS ED	14834	0	4521	0	0	0	0	0	0	0
415 MINE NEUTRAL/DETECTION	9302	32941	37095	0	0	0	0	0	0	0
434 ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)	0	37194	21152	0	0	0	0	0	0	0
443 APL-A (MIXED SYSTEMS)	0	23582	26385	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element provides for System Development and Demonstration of mine and countermine systems. Project D016, Mine Systems Engineering Development, provides for the increased tactical effectiveness and responsiveness of landmines by supporting the development of Intelligent Combat Outpost (Raptor), and upgrades for the Volcano Dispenser. D434 provides for Non-Self-Destructing Anti-Personnel Landmine Alternatives (NSD-A), and D443 for Mixed Mine System Alternatives. Project D415, Mine Neutralization/Detection Engineering Development, is the engineering and manufacturing development for the Airborne Standoff Minefield Detection System (ASTAMIDS), Ground Standoff Mine Detection System (GSTAMIDS), Handheld Standoff Mine Detection System (HSTAMIDS), Explosive Standoff Minefield Breacher(ESMB), and Obstacle Marking System (OMS). These systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

\*FY01 includes \$6.4 reprogrammed for higher Army priorities.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604808A - Landmine Warfare/Barrier Engineering Development**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	29893	69584	60600	0
Appropriated Value	30120	94584	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-805	0	0	
c. Omnibus or Other Above Threshold Reductions	-123	0	0	
d. Below Threshold Reprogramming	-5150	0	0	
e. Rescissions	-104	-867	0	
Adjustments to Budget Years Since FY2001 PB	0	0	28553	
Current Budget Submit (FY 2002/2003 PB )	23938	93717	89153	0

Funding - In FY2000 \$2.250M reprogrammed from PE64808/D415 to PE63619/D606 to initiate PDRR for GSTAMIDS block 1. Remainder re-aligned to other higher priority requirements. In FY01 Congress provided an additional \$25M for NSD-A under project D434. In FY2002 for D016 increases include \$2.3M for Volcano upgrades; \$14.6M for NSD-A (D434); and \$11.6M for ESMB (D415). In FY2003 \$3M for NSD-A (D434); \$4.2M for Volcano upgrades (D016) and \$20M for ESMB (D415).



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier Engineering Development</b>				PROJECT <b>016</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
016 MINE SYSTEMS ED	14834	0	4521	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project provides for Systems Development and Demonstration of new smart munitions and intelligent/autonomous coordination of their use for increased effectiveness. Includes Intelligent Combat Outpost (Raptor), initiation of Non Self Destruct Alternatives Program (NSD-A), the upgrade to the Volcano Dispenser Control Unit and the Volcano modularization in support of the Interim Brigade Combat Team (IBCT). These Systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 7179 NSD-A tactical design efforts
- 3070 Provided engineering support for NSD-A design producibility/manufacturing development
- 997 NSD-A Risk Reduction analysis
- 1500 NSD-A, PAT II Live Field Experiments
- 1763 NSD-A, Joint Venture Proposal Preparation
- 325 Design Volcano trailer mounting device

Total 14834

**FY 2001 Planned Program**

Project not funded in FY 2001.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604808A - Landmine Warfare/Barrier Engineering Development**

PROJECT  
**016**

**FY 2002 Planned Program**

- 4121 Initiate design effort for Volcano upgrades.
  - 400 Establish testing plans and criteria for Volcano upgrade efforts.
- Total 4521

<b>B. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, BA4, PE 0603619A, Proj D005	2975	12644	11426	0	0	0	0	0	0	0
M12100., Intelligent Combat Outpost	0	0	0	0	0	0	0	0	0	0
M12202, Raptor Training Device	0	0	0	0	0	0	0	0	0	0
G39100, Volcano Dispenser	0	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** For Raptor, the decision to go sole source or competitive will be based on evaluation of the Component Advanced Development contractor results. For NSD-A, 12 solicitation respondents were requested to submit proposals for their alternative concept. Cost Plus Incentive Fee (CPIF) contracts for two of the best concepts were awarded for the Early User Experiment (EUE) phase. At the conclusion of the EUE one contractor or a team will be selected to continue into the System Development & Deployment, and Production phases. The acquisition strategy for the Volcano upgrades program will be determined prior to initiation in FY02.

<b>D. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete NSD-A PAT	2Q			0	0	0	0	0
NSD-A MS I/II	2Q			0	0	0	0	0
NSD-A MS C				0	0	0	0	0
RAPTOR MS A		2Q		0	0	0	0	0
RAPTOR MS B				0	0	0	0	0
RAPTOR IO&T				0	0	0	0	0
RAPTOR MS C				0	0	0	0	0
Volcano Modular Upgrade MS B			4Q	0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier Engineering Development</b>	PROJECT <b>016</b>
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<u>D. Schedule Profile (continued)</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Volcano Modular Upgrade MS C				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604808A - Landmine Warfare/Barrier Engineering**  
**Development**

**PROJECT**  
**016**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . NSD-A Test Hardware	C-CPIF	Textron Systems Corp, MA	3844	0		0		0	0	0	0	0
b . NSD-A Test Hardware	C-CPIF	Alliant Tech Systems, MN	4965	0		0		0	0	0	0	0
c . NSD-A EMD	C-CPIF	Alliant Tech Systems, MN	500	0		0		0	0	0	0	0
d . NSD-A EMD	C-CPIF	Textron Systems Corp, MA	575	0		0		0	0	0	0	0
e . NSD-A EMD	C-CPIF	Textron Sys Corp, MA & Alliant Tech Syst, MN (jointly)	12950	0		0		0	0	0	0	0
f . NSD-A Design/mixed System replacement	C-CPIF	Various	2000	0		0		0	0	0	0	0
g . RAPTOR- SDD Contract	C-CPIF	TBD	0	0		0		0	0	0	0	0
h . Volcano-SDD Contract	C-CPIF	TBD	0	0		3021	1Q	0	0	0	0	0
Subtotal:			24834	0		3021		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604808A - Landmine Warfare/Barrier Engineering**  
**Development**

**PROJECT**  
**016**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Eng. Support NSD-A	MIPR	ARDEC, Picatinny Arsenal, NJ	4010	0		0		0	0	0	0	0
b . Eng. Support NSD-A	MIPR	Various	1564	0		0		0	0	0	0	0
c . Engr. Support RAPTOR	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		0		0	0	0	0	0
d . Engr. Support RAPTOR	MIPR	Various	0	0		0		0	0	0	0	0
e . Engr. Support Volcano	MIPR	Various	0	0		1250	1Q	0	0	0	0	0
Subtotal:			5574	0		1250		0		0	0	0

Remarks: None

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604808A - Landmine Warfare/Barrier Engineering</b>	<b>PROJECT</b> <b>016</b>
<b>Development</b>		

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PAT Support NSD-A	MIPR	Various	1056	0		0		0		0	0	0
b . Process Prove-out test RADAM	MIPR	TECOM, Aberdeen, MD	1450	0		0		0		0	0	0
c . RAPTOR test support	MIPR	ATEC, Alexandria, VA	0	0		0		0		0	0	0
d . Volcano- test upgrades	MIPR	ATEC, Alexandria, VA	0	0		0		0		0	0	0
Subtotal:			2506	0		0		0		0	0	0

Remarks: None

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . NSD-A Program Management	In-House	PM-MCD, Picatinny Arsenal, NJ	646	0		0		0		0	0	0
b . RAPTOR Program Management	In-House	PM MCD, Picatinny Arsenal, NJ	0	0		0		0		0	0	0
c . Volcano Program Management	In-House	PM MCD, Picatinny Arsenal, NJ	0	0		250	1Q	0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier Engineering Development</b>	PROJECT <b>016</b>
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IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			646	0		250		0		0	0	0

Remarks: None

Project Total Cost:			33560	0		4521		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604808A - Landmine Warfare/Barrier Engineering Development</b>					<b>PROJECT</b> <b>415</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
415 MINE NEUTRAL/DETECTION	9302	32941	37095	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project provides System Development and Demonstration (SDD) for the Airborne Standoff Minefield Detection System (ASTAMIDS), Handheld Stand-off Mine Detection System (HSTAMIDS), Ground Standoff Mine Detection System (GSTAMIDS), Explosive Standoff Minefield Breacher (ESMB), and the Obstacle Marking System (OMS). These systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 3797 Completed GSTAMIDS block 0 detailed design
- 3655 Conducted GSTAMIDS block 0 system integration
- 1100 Initiated Fabrication of two (2) GSTAMIDS Block 0 Prototypes
- 344 Developed MS B Plans and Documentation for CMCS
- 208 Developed Solicitation Plans and Documents for CMCS

Total 9104

**FY 2001 Planned Program**

- 5278 Complete Fabrication of two GSTAMIDS block 0 prototypes
- 5400 Conduct GSTAMIDS Block 0 contractor/government testing
- 3594 Initiate HSTAMIDS SDD Hardware and Software design
- 3262 Fabricate HSTAMIDS hardware to conduct design verification test
- 400 Conduct solicitation/source selection for CMCS
- 9110 Acquire NDI/COTS Components of CMCS



**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604808A - Landmine Warfare/Barrier Engineering  
Development**

PROJECT

**415****FY 2001 Planned Program (Continued)**

- 4000 Award Mongoose (ESMB) System Design and Development Contract
- 918 Initiate Development of unique CMCS components
- 979 Small Business Innovative Research/Small Business Technology Transfer Programs.

Total 32941

**FY 2002 Planned Program**

- 585 Prepare for GSTAMIDS Block 0 for Milestone C (Full Rate Production)
- 5146 Conduct GSTAMIDS Block 0 Operational Testing
- 14600 Complete ESMB BCT preliminary design
- 4200 Procure long lead materials for ESMB prototypes
- 1200 Develop ESMB Manufacturing Processes
- 1600 Initiate Obstacle Marking System design efforts and test planning activities
- 5082 Complete HSTAMIDS SDD design
- 3282 Initiate fabrication of 22 HSTAMIDS test articles for DT/OT
- 1000 Develop HSTAMIDS Indigenous Metal Detector
- 400 Develop Milestone A/B Plans and Documentation for OMS

Total 37095

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604808A - Landmine Warfare/Barrier Engineering**  
**Development**

**PROJECT**  
**415**

<b><u>B. Other Program Funding Summary</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>To Compl</b>	<b>Total Cost</b>
PE 0603619A, Project D606, Countermine/Barrier Advanced Dev	8909	9950	10225	0	0	0	0	0	0	0
R68200, HSTAMIDS	0	0	0	0	0	0	0	0	0	0
R68101, GSTAMIDS	0	0	13272	0	0	0	0	0	0	0
R68102, GSTAMIDS	0	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** ESMB competitively selected Concept & Technology Development (CTD) contractor will be awarded a sole source System Development & Demonstration (SDD) contract upon completion of CTD phase and MDA approval. ASTAMIDS will award a competitively selected CTD contract followed by a sole source SDD contract. GSTAMIDS program is a spiral development and acquisition program designed to field vehicle mounted mine detection and neutralization capabilities in successive block upgrades (Blocks 0,1, and 2). GSTAMIDS Block I integrates a number of advanced countermine capabilities into one system. The Block I system development contract is expected to be competitively solicited. The GSTAMIDS Block 0, SDD contractor was competitively selected. If successful, the SDD contractor will be awarded the initial production contract (sole source) with multiple option year buys. HSTAMIDS, two competing contractors at start of CTD phase. In FY99 one contractor was selected to continue extended CTD phase through SDD. If successful, SDD contractor will be awarded production contract with multiple options. OMS will use a modified non-developmental (NDI) strategy tailoring commercially available military marking systems to Army requirements.

<b><u>D. Schedule Profile</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
GSTAMIDS Block 0 MS C			4Q	0	0	0	0	0
GSTAMIDS Block 1 MS B			4Q	0	0	0	0	0
GSTAMIDS Block I MS C				0	0	0	0	0
HSTAMIDS MS B		1Q		0	0	0	0	0
HSTAMIDS MS C				0	0	0	0	0
ESMB MS B		3Q		0	0	0	0	0
OMS MS B			2Q	0	0	0	0	0
OMS MS C				0	0	0	0	0
ESMB(BCT) MS C				0	0	0	0	0
ESMB (Legacy) MS C				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604808A - Landmine Warfare/Barrier Engineering  
Development**

PROJECT

**415**

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604808A - Landmine Warfare/Barrier Engineering**  
**Development**

**PROJECT**  
**415**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. GSTAMIDS Block 1	C-CPIF	TBD	0	0		0		0	0	0	0	0
b. GSTAMIDS Block 0	C-CPFF	EG&G Systems Inc., Albuquerque, NM	8296	3700	1Q	1989	1Q	0	0	0	0	0
c. HSTAMIDS	C-CPIF	CY Terra Corporation, Orlando, FL	0	3275	2Q	4300	1Q	0	0	0	0	Continue
d. CMCS EMD			0	6500		0		0	0	0	0	Continue
e. OMS	SS-CPIF	TBD	0	0		1150	2Q	0	0	0	0	Continue
f. ESMB	SS	BAE Systems	0	2871	4Q	16266	1Q	0	0	0	0	0
Subtotal:			8296	16346		23705		0		0	0	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604808A - Landmine Warfare/Barrier Engineering**  
**Development**

**PROJECT**  
**415**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Eng. support GSTAMIDS Blk 0	MIPR	NVESD/ CECOM, Ft Belvoir, VA	4845	1900	1Q	1565	1Q	0	0	0	0	0
b . Eng support GSTAMIDS Blk 0	MIPR	Various	3541	1079	1Q	118	1Q	0	0	0	0	0
c . GSTAMIDS Block 0	Various	Various	984	0		0		0	0	0	0	0
d . GSTAMIDS Blk I	MIPR	Various	0	0		0		0	0	0	0	0
e . GSTAMIDS Support Blk I	MIPR	NVESD/CECOM, Ft Belvoir, VA	0	0		0		0	0	0	0	0
f . Eng. support GSTAMIDS Blk 0	Various	Various	3957	1000	1Q	0		0	0	0	0	0
g . Eng Support CMCS	Various	Various	0	1316	1Q	0		0	0	0	0	0
h . Eng Support CMCS	MIPR	NVESD/CECOM, Ft Belvoir, VA	0	732	1Q	0		0	0	0	0	0
i . Eng Support HSTAMIDS	MIPR	NVESD/CECOM, Ft Belvoir, VA	0	1150	1Q	1896	1Q	0	0	0	0	0
j . Eng Support HSTAMIDS	Various	Various	0	2089	2Q	1636	1Q	0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604808A - Landmine Warfare/Barrier Engineering</b>	<b>PROJECT</b> <b>415</b>
		<b>Development</b>

II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . Eng Support OMS	MIPR	NVESD/CECOM, Ft Belvoir, VA	0	0		350	1Q	0	0	0	0	0
l . ESMB	MIPR	NVESD/CECOM, Ft Belvoir, VA	0	310	2Q	2493	1Q	0	0	0	0	0
<b>Subtotal:</b>			13327	9576		8058		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test support GSTAMIDS	MIPR	ATEC, Alexandria, VA	1313	1693	3Q	1681	2Q	0	0	0	0	0
b . Test support HSTAMIDS	MIPR	ATEC, Alexandria, VA	0	342	2Q	1338	1Q	0	0	0	0	0
c . Test Support CMCS	MIPR	ATEC, Alexandria, VA	0	400	1Q	0		0	0	0	0	0
d . Test Support OMS	MIPR	ATEC, Alexandria, VA	0	0		200	2Q	0	0	0	0	0
e . Test Support ESMB	MIPR	ATEC, Alexandria, VA	0	144	2Q	500	2Q	0	0	0	0	0
<b>Subtotal:</b>			1313	2579		3719		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604808A - Landmine Warfare/Barrier Engineering**  
**Development**

**PROJECT**  
**415**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program management	In-House	PM-MCD, Picatinny Arsenal, NJ	972	1030	1-4Q	1105	1-4Q	0	0	0	0	0
b . Program management Contractor support	Various	Various	1028	3410	1-4Q	508	1-4Q	0	0	0	0	0
Subtotal:			2000	4440		1613		0		0	0	0
<b>Project Total Cost:</b>			24936	32941		37095		0		0	0	Continue

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0604808A - Landmine Warfare/Barrier Engineering</b>				<b>PROJECT</b> <b>434</b>		
				<b>Development</b>						
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
434 ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)	0	37194	21152	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This program provides for development of alternative systems for Non Self-Destruct (NSD) Anti-Personnel Landmines (APLs), particularly in Korea. The overall goal is to pursue an aggressive program to field alternative system(s) by 2006. This may allow the U.S. to sign the Ottawa Convention. This System supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

Project not funded

**FY 2001 Planned Program**

- 22973 Design, fabricate, and subsystem verification tests of Remote Control Units(RCU) (14), Repeater (14), munitions (13 Munition Control Units (MCUs)) 15 Extended Range Tripline Sensors (RTS), 50 Inert Mini-Grenade Launchers (MGLs), 6 High Explosive (HE) MGLs, 10 Inert M16s, 6 HE M16s
- 3908 Provide general engineering support (including Other Government Agencies (OGAs)) for NSD-A design producibility/manufacturing development of NSD-A subsystems through Preliminary Design Review and subsystem verification test
- 9207 Communication, reliability and lethality trade studies risk reduction efforts
- 1106 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)

Total 37194



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier Engineering Development</b>	PROJECT <b>434</b>
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**FY 2002 Planned Program**

- 15855 Provide Hardware and software for contractor system verification tests, Functional Qualification Test (FQT), and Production Qualification Test (PQT) (326 MCUs, 676 ERTS, 45 repeaters, 45 RCUs, 1900 inert MGLs, 725 HE MGLs, 404 inert M16s, 144 HE M16s)
- 5297 Provide general engineering support (including OGAs) for Non Self-Destruct-Alternatives (NSD-A) design producibility/manufacturing and integration of NSD-A system through Critical Design Review and Production Qualification Testing.

Total 21152

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PE 64808/D016	14834	0	4521	0	0	0	0	0	0	0
PAA SSN E91700	0	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** On 2 Jun 00, Dr. Gansler (USD(AT&L)) approved the NSD-A plan to have Alliant Tech Systems and Textron Systems Corporation to form a joint venture for the System Development & Demonstration (SDD) and Production & Deployment (P&D) efforts of this program.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
NSD-A MS-C				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604808A - Landmine Warfare/Barrier Engineering Development</b>	<b>PROJECT</b> <b>434</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . NSD-A SDD	C-CPIF	Alliant Tech Systems, MN, and Textron Systems Corp., MA. (Jointly)	0	29930	3Q	15855	3Q	0	0	0	0	Continue
<b>Subtotal:</b>			0	29930		15855		0		0	0	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Eng support NSD-A	MIPR	ARDEC, Picatinny Arsenal, NJ	0	2000	1-4Q	2650	1-4Q	0	0	0	0	0
b . Eng support NSD-A	MIPR	Various	0	1908	1-4Q	2397	1-4Q	0	0	0	0	0
<b>Subtotal:</b>			0	3908		5047		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604808A - Landmine Warfare/Barrier Engineering**  
**Development**

**PROJECT**  
**434**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DT/OT	MIPRs	TEXCOM, TX,/APG, MD/Ft. Benning, GA	0	2000	1-4Q	0		0	0	0	0	0
Subtotal:			0	2000		0		0		0	0	0

Remarks: Not Applicable

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Mgmt NSD-A	In-House	PM-MCD, Picatinny Arsenal, NJ	0	1356	1-4Q	250	1-4Q	0	0	0	0	0
Subtotal:			0	1356		250		0		0	0	0

Project Total Cost:			0	37194		21152		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier Engineering Development</b>				PROJECT <b>443</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
443    APL-A (MIXED SYSTEMS)	0	23582	26385	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project provides alternatives to anti-personnel submunitions used in mixed anti-tank (AT) landmine systems and possibly the entire mixed landmine system. The alternative systems will include surveillance systems, command and control systems, and overwatch fires which will be evaluated and developed in parallel to provide similar capabilities that are now provided by Anti-Personnel Landmines (APLs) and APL submunitions in mixed AT systems. Distributed simulation will be used to evaluate new concepts and modify tactics and procedures. Prototype components and system architectures will be constructed and evaluated in system field tests. The overall goal is to pursue an aggressive program to field alternative system(s) by 2006. This may allow the U.S. to sign the Ottawa Convention. These Systems support the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

Project not funded

**FY 2001 Planned Program**

- 6461     Complete award of multiple Broad Agency Announcements (BAA) and prototype efforts for system concepts and components to support alternatives studies
- 2290     Initiate BAA for component technologies to fill technological gaps.
- 2000     Initiate BAA to develop second generation (2006-2020) APL alternative solutions
- 2500     Conduct distributed modeling of tactics and procedures
- 2000     Modify new generation of expendable day/night imaging sensors, communications devices, low cost point detectors, and new deterrent devices for force protection and landmine alternative roles.
- 1500     Conduct technology assessment of sensors, communications and armament systems
- 1000     Initiate development of integrated and interactive network mapping system

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604808A - Landmine Warfare/Barrier Engineering  
Development**

PROJECT

**443**

## FY 2001 Planned Program (Continued)

- 1537 Initiate development of a friend or foe algorithm for foot soldiers
- 592 Test and evaluate advanced technology brassboard for landmine alternatives concept development.
- 3000 Initiate prototype development and risk reduction for mixed mine alternatives solutions.
- 702 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)

Total 23582

## FY 2002 Planned Program

- 8431 Continue prototype development and risk reduction for mixed system alternatives
- 2500 Continue BAA for component technology to fill technological gaps
- 2000 Continue BAA to develop second generation (2006-2020) APL alternative solutions
- 2500 Conduct distributed modeling of tactics and procedures
- 2000 Continue with development of day/night imaging sensors, communications devices, low cost point detectors and new deterrent devices for force protection and landmine alternative roles.
- 561 Conduct technology assessment of sensors, communications and armament systems
- 1290 Continue with development of integrated and interactive network mapping system
- 1537 Continue with development of a friend or foe algorithm for foot soldiers
- 2500 Conduct distributed modeling of tactics and procedures
- 2000 Continue investigation of mobility of an adaptable network of expendable sensors and new deterrent to meet landmine alternatives requirements and Future Combat Systems (FCS) force protection roles
- 1066 Test mobility concepts for landmine alternatives

Total 26385

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier Engineering Development</b>	PROJECT <b>443</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PAA SSN: E91701	0	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Continue concept exploration studies and proof of principle demonstrations for both system (5 contracts) and components (8 contracts). At the completion of the demonstrations, downselect the top contract(s) with the most cost effective and responsive design for prototype development and risk reduction. This will lead to System Development & Demonstration (SDD).

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Mixed system CAD-DR			1Q	0	0	0	0	0
Mixed system MS B				0	0	0	0	0
Mixed system MS C				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604808A - Landmine Warfare/Barrier Engineering**  
**Development**

**PROJECT**  
**443**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. APL-A System Concept Exploration	C-CPIF	Various	0	6084	1-4Q	0		0	0	0	0	0
b. APL-A Component Technology Development	C-CPIF	Various	0	1100	1-4Q	2500	1-4Q	0	0	0	0	0
c. APL-A Prime Development Contract	C-CPIF	TBD	0	3000	1-4Q	8487	1-4Q	0	0	0	0	Continue
d. APL-A Component Technology Dev. II	C-CPIF	TBD	0	2300	1-4Q	2500	1-4Q	0	0	0	0	0
e. APL-A 2nd Generation Alternative Solutions	C-CPIF	TBD	0	2000	1-4Q	2000	1-4Q	0	0	0	0	Continue
f. APL-A Mapping & IFF Function Development	C-CPIF	TBD	0	2548	1-4Q	3031	1-4Q	0	0	0	0	Continue
g. APL-A SDD Prime Contract	C-CPIF	TBD	0	0		0		0	0	0	0	Continue
Subtotal:			0	17032		18518		0		0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604808A - Landmine Warfare/Barrier Engineering Development</b>	<b>PROJECT</b> <b>443</b>
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Eng. Support	MIPR	ARDEC, Picatinny Arsenal, NJ	0	1000	1-4Q	1500	1-4Q	0	0	0	0	Continue
b . Eng. Support	MIPR	Night Vision Labs, Ft. Belvoir, VA	0	1500	1-4Q	2000	1-4Q	0	0	0	0	Continue
c . Concepts & Component Analysis & Evaluation	MIPR	Various	0	3750	1-4Q	4067	1-4Q	0	0	0	0	Continue
Subtotal:			0	6250		7567		0		0	0	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604808A - Landmine Warfare/Barrier Engineering Development</b>	<b>PROJECT</b> <b>443</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Mgmt.	In-House	PM-MCD, Picatinny Arsenal, NJ	0	300	1-4Q	300	1-4Q	0	0	0	0	Continue
Subtotal:			0	300		300		0		0	0	Continue

Project Total Cost:			0	23582		26385		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604814A - Artillery Munitions - EMD**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	23490	31513	67258	0	0	0	0	0	0	0
644    GENERIC SADARM ED	23490	0	0	0	0	0	0	0	0	0
708    XM982 PROJECTILE	0	31513	67258	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

The Sense and Destroy Armor (SADARM) program has been terminated. The Army's requirement for a field artillery smart sub-munition is being addressed and evaluated.

Artillery munitions provides for the engineering manufacturing development of intensively managed munitions as assigned by the Army Acquisition Executive. Currently assigned is the Excalibur (XM982) precision guided, extended range 155mm modular artillery projectile with the capability for multiple payloads to include Unitary, Dual Purpose Improved Conventional Munition (DPICM) and a Sensor-Fuzed Munition (SFM). Fielding of Excalibur will provide the maneuver force with improved fire support through a precision-guided, extended range, accuracy enhancing, fratricide reducing, more lethal family of 155mm projectiles, which will reduce the logistical footprint. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP). It also includes the development of the Platform Integration Kit and Enhanced Portable Inductive Fuze Setter (EPIAFS).

Prior to FY 2001, funding for the Excalibur is in Program Element 0604802, Project D695.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604814A - Artillery Munitions - EMD**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	24128	52848	66968	0
Appropriated Value	24366	31805	0	
Adjustments to Appropriated Value		0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-638	0	0	
c. Omnibus and Other Above Threshold Reductions	-98	0	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	-140	-292	0	
Adjustments to Budget Years Since FY2001 PB		0	290	
New Army Transformation Adjustment		0	0	
Current Budget Submit (FY 2002/2003 PB )	23490	31513	67258	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604814A - Artillery Munitions - EMD</b>					PROJECT <b>708</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
708 XM982 PROJECTILE	0	31513	67258	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Excalibur (XM982) is a precision-guided, extended-range 155mm modular artillery projectile with the capability for multiple payloads. Fielding of Excalibur will provide the maneuver force with improved fire support through a precision-guided, extended-range, accuracy-enhancing, fratricide-reducing, more lethal family of 155mm projectiles. Funding in the budget request and Future Years Defense Plan (FYDP) conducts the development of the Excalibur projectile, integration of the Unitary warhead, and begins Excalibur procurement in FY 2004. It also fully funds the development of all platform integration requirements to include the Enhanced Portable Inductive Fuze Setter (EPIAFS). The Excalibur will be compatible with all current and future digitized 155mm cannon artillery systems in the U. S. inventory. The Excalibur will re-establish range parity with the threat by extending the range of the 155mm Paladin (M109A6), and the Joint Lightweight Howitzer to approximately 37 kilometers. Excalibur will establish range overmatch by extending the Crusader range to 47 kilometers with the Modular Artillery Charge System (MACS). The Excalibur will allow greater standoff from threats and faster defeat of potential threats, increasing soldier survivability while reducing the logistics footprint. Excalibur supports multiple Army Modernization Plan initiatives: dominate the maneuver battle, protect the force, and project and sustain. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP). This project also includes funding for a competitive design beginning in FY 2002. Prior to FY 2001, funding for the Excalibur is in Program Element 0604802, Project D695.

**FY 2000 Accomplishments**

Project funded in Program Element 64802/D695

**FY 2001 Planned Program**

- 6261 Complete design of projectile assembly including structural and aeroballistic analyses, subsystem laboratory tests and airframe flight tests. Build prototypes for test and evaluation.
- 7371 Continue design of guidance, navigation , control and instrumentation systems. Build prototype subsystems and conduct high-G guidance testing and evaluation.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604814A - Artillery Munitions - EMD**

PROJECT

**708**

## FY 2001 Planned Program (Continued)

- 4192 Continue Systems Integration activities to include development of Interface Control Documents (ICD) at subsystem and system level and evaluation/verification of external interfaces with prototype hardware.
- 6347 Initiate development of Platform Integration Kit and EPIAFS
- 3525 Perform structural analysis of payload and internal interfaces in a gun fired environment.
- 2900 Initiate Unitary warhead development.
- 917 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)

Total 31513

## FY 2002 Planned Program

- 8042 Complete airframe tactical structure and conduct 39 and 56 caliber contractor development testing.
- 26140 Complete guidance unit integration, gun hardening, systems software development, and programmed maneuver flight demonstration.
- 9595 Continue to execute Systems Engineering and Specialty Engineering activity including Cost As An Independent Variable (CAIV), development and tracking of program metrics and effectiveness/aeroballistic simulations.
- 4654 Continue Platform Integration effort including design and build of prototype hardware for Platform Integration Kit and Fuze Setter.
- 11717 Initiate projectile system level testing, and continue analysis.
- 7110 Continue Unitary warhead development.

Total 67258

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604814A - Artillery Munitions - EMD**

**PROJECT**  
**708**

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDT&E: PE 0604802A.D695	14481	0	0	0	0	0	0	0	0	0
Procurement Ammunition Army: E80100	0	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The approved Acquisition Strategy was to award the Engineering and Manufacturing Development (EMD) contract (FY98-01) to a systems contractor through full and open competition using formal source selection. As a result of this strategy, a contract was awarded to Raytheon-TI Systems, Inc., Lewisville, TX on 23 January 1998 for the design, development, fabrication, and engineering services in support of the development and testing of the 155MM ER DPICM XM982 Projectile, with options for the development of a Sensor Fuzed Munition and a Unitary variant. Two low rate production fixed price ceiling price options were also included in the award for the first year's buy of 3,400 each and the second year's buy of 4,900 each. The User, TSM-Cannon, has provided direction to PM Excalibur in a letter dated 8 January 2001 to replace the DPICM payload development with the Unitary payload development. A letter instructing the Contractor to stop work on the DPICM payload unique tasks was issued on 12 February 2001. Firm Option Prices for the Unitary CLINs, System Development and Demonstration (SD&D) and Low Rate Production (LRP), are no longer valid under contract DAAE30-98-C-1032. The Unitary option prices were based on completion of the DPICM and Sensored Munition development efforts. As a result of this change, the Unitary payload development must be repriced to include LRP. An Undefined Contract Action (UCA) was issued February 2001 to allow for an immediate start of the Unitary payload development with definitization planned for FY2001.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Initiate Platform Integration & EPIAFS Systems Development		3Q		0	0	0	0	0
Initiate Guidance System Test Firings		3Q		0	0	0	0	0
Unitary Warhead Contract Development Test Firing			2Q	0	0	0	0	0
Extended Range Demonstration				0	0	0	0	0
Contractor Pre-Qualification Tests				0	0	0	0	0
EPIAFS Product Development Review (PDR)			2Q	0	0	0	0	0
EPIAFS Critical Design Review (CDR)				0	0	0	0	0
Excalibur Critical Design Review (CDR)				0	0	0	0	0
Start Developmental Technical (DT) Test ,Evaluation and Qualification				0	0	0	0	0
Independent Program Review (IPR) for LRIP Initiation				0	0	0	0	0
Award LRIP 1 Contract				0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604814A - Artillery Munitions - EMD</b>	PROJECT <b>708</b>
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<b><u>D. Schedule Profile (continued)</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete Developmental Technical Test and Evaluation				0	0	0	0	0
First Article Test				0	0	0	0	0
Award LRIP II Contract				0	0	0	0	0
Independent Operational Test and Evaluation (IOTE)				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604814A - Artillery Munitions - EMD**

**PROJECT**  
**708**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Excalibur-XM982 Development	C/CPIF	Raytheon Systems, Tucson, AZ	0	17536	1Q	40891	1Q	0	0	0	0	0
b . Award Fee on Excalibur Development Contract		Raytheon Systems, Tucson, AZ	0	77	4Q	409	4Q	0	0	0	0	0
c . Competitive Design Developmet	C/CPIF	TBD	0	0		4700	1Q	0	0	0	0	0
d . Platform Integration Systems Contractor	C/CPIF	PM Paladin Support Contract, TRW	0	0		1850	1Q	0	0	0	0	0
e . EPIAFS Systems Contractor	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		1850	1Q	0	0	0	0	0
f . Misc Contracts	SS/FP	TBD	0	167	3Q	200		0	0	0	0	0
Subtotal:			0	17780		49900		0		0	0	0

Remarks: Program funding for FY 1999 and 2000 resides in 604802.D695.  
Contracted activity also includes \$21.2M Raytheon Cost share which is not included in Army Product Development funding profile. The restructured contract includes an award fee provision for schedule and performance.



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604814A - Artillery Munitions - EMD**

**PROJECT**  
**708**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Product Manager's Office	Allot	Excalibur PM	0	1305		3000		0	0	0	0	0
b . Gov't IPT Support-Excalibur XM982	MIPR	ARDEC, Picatinny Arsenal, NJ	0	5937	1-3Q	4800	1Q	0	0	0	0	0
c . Gov't Support- Ft Sill	MIPR	Ft. Sill, OK	0	225	1Q	25	1Q	0	0	0	0	0
d . Platform Intergration	MIPR	PM Paladin	0	200	2Q	0		0	0	0	0	0
e . Gov't IPT Support-Excalibur Platform Integration	MIPR	ARDEC, Picatinny Arsenal, NJ	0	3854	1-3Q	4600	1Q	0	0	0	0	0
f . Milestone Support	SS/FP	Camber, Alexandria, Va	0	150	3Q	150	1Q	0	0	0	0	0
g . Technical Spt Contract for Platform Integration	SS/FP	Camber, Dallas, TX	0	82	1Q	0		0	0	0	0	0
h . Miscellaneous Suport			0	0		0		0	0	0	0	0
Subtotal:			0	11753		12575		0		0	0	0

Remarks: \*Program funding for FY 1999 and 2000 resides in 604802.D695.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604814A - Artillery Munitions - EMD**

**PROJECT**  
**708**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TECOM Testing	MIPR	YPG, Yuma, AZ	0	563	1Q	3583	1-4Q	0	0	0	0	0
b . Army Research Labs	MIPR	ARL, Adelphia, MD	0	887	1Q	0		0	0	0	0	0
c . Telemetry Support	SS/CPIF	L3 Corporation	0	400	2Q	1200	1Q	0	0	0	0	0
d . Telemetry Crypto Hardware	MIPR	Ft. Huachua, AZ	0	70	2Q	0		0	0	0	0	0
e . Tri-Service Software Assessment	MIPR	OSD, Wash, DC	0	60	2Q	0		0	0	0	0	0
f . Operational Test Support	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		0		0	0	0	0	0
Subtotal:			0	1980		4783		0		0	0	0

Remarks: \*Program funding for FY 1999 and 2000 resides in 604802.D695.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604814A - Artillery Munitions - EMD**

**PROJECT**  
**708**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			0	31513		67258		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604817A - Combat Identification**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	17511	5313	3014	0	0	0	0	0	0	0
482 GROUND CID (BCIS)	8598	2358	0	0	0	0	0	0	0	0
902 INDIVIDUAL COMBAT IDENTIFICATION SYSTEM (ICIDS)	8913	2955	3014	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

The dominant maneuver tactics that allow smaller, more lethal, forces to succeed on the modern battlefield also increase the potential for friendly fire casualties. Thus, a key enabler of complex warfare is the rapid, reliable identification of friends, foes and neutrals. Positive identification at the point-of-engagement is complicated by the capabilities of modern weapons that allow engagements well beyond the range where visual identification is possible, significantly increasing the potential for fratricide. These programs are directed toward the design and development of distinct systems to help minimize this battlefield deficiency within the overall Combat Identification architecture. Project D482 addresses the ground-to-ground vehicle mounted mission and Project D902 addresses the individual soldier-to-soldier mission. Survivability is one of the seven tenets of the Army Transformation Strategy and these Combat Identification programs represent an integral part of that strategy as they work to reduce incidents of fratricide. These systems support the Legacy transition path of the Transformation Campaign Plan (TCP), as well as providing a critical link to ensuring compatibility and interoperability to the Future Combat System and to the Objective Warrior System.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604817A - Combat Identification**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	8566	5362	0	0
Appropriated Value	8658	5362		
Adjustments to Appropriated Value	0	0		
a. Congressional General Reductions	0	0	0	
b. SBIR/STTR	-411	0	0	
c. Omnibus or Other Above Threshold Reprogrammings	6937	0	0	
d. Below Threshold Reprogramming	2278	0	0	
e. Rescissions	-134	-49	0	
Adjustments to Budget Years Since FY2001 PB	0	0	3014	
Current Budget Submit (FY 2002/2003 PB )	17328	5313	3014	0

**Change Summary Explanation:**

FY 2000 - \$6.935 transferred from Procurement Ammunition, Army (PAA) to RDTE to fund ICIDS cost growth  
     \$1.478M reprogrammed to D482 for ASCIET  
     \$.800M reprogrammed to D902 to fund ICIDS cost growth  
 FY 2002 \$3.014M transferred from PAA (BA0515) to D902 to support IOT

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>			<b>PE NUMBER AND TITLE</b> <b>0604817A - Combat Identification</b>						<b>PROJECT</b> <b>902</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
902 INDIVIDUAL COMBAT IDENTIFICATION SYSTEM (ICIDS)	8913	2955	3014	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The identification of friendly forces on future battlefields will be more complex due to the highly mobile, dispersed, non-linear formations found in unconventional warfare. The Individual Combat Identification System (ICIDS) is a lightweight, laser-based, question and answer type system, used by the individual soldiers to positively identify friendly soldiers. The system includes a compact, eyesafe laser interrogator, a laser detector assembly, an electronic processor unit, and an omni-directional RF responder. The laser interrogator includes an aiming laser pointer for aiming the soldier's weapon at night when using Night Vision Goggles and provides an embedded training capability that is interoperable with MILES/MILES 2000 training systems. The system will provide combat identification beyond the effective range of the weapon and will exceed the soldier's target acquisition capability under degraded atmospheric conditions. The system will also be directly interoperable and have a commonality and a migration path with the combat ID functions to be embedded in the Land Warrior equipment suite. The system will fulfill requirements stated in the Operational Requirements Document for use by Army, Marine and Special Operations Forces. Survivability is one of the seven tenets of the Army Transformation Strategy and ICIDS represents an integral part of that strategy as it works to reduce incidents of fratricide and increase combat effectiveness. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP), as well as providing a critical link to ensuring compatibility and interoperability to the Objective Warrior System.

**FY 2000 Accomplishments**

- 1940 Completed redesign of helmet electronics and weight reduction.
- 6748 Continued fabrication, assembly and test of 50 EMD hardware systems to support technical testing.
- 225 Completed Phase I, Development Testing (DT).

Total 8913

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604817A - Combat Identification**

PROJECT

**902**

## **FY 2001 Planned Program**

- 1469 Complete fabrication, assembly and test of 50 EMD hardware systems to support technical testing.
- 353 Complete Phase II, Development Testing.
- 251 Perform data reduction and analysis from government test.
- 402 Conduct Detection Acquisition and Recognition and Identification (DARI) Test.
- 392 Conduct Airborne Certification.
- 88 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR).

Total 2955

## **FY 2002 Planned Program**

- 2260 Conduct Initial Operational Test (IOT).
- 500 Perform data reduction and analysis from government test.
- 254 Production Readiness Review preparation.

Total 3014

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604817A - Combat Identification**

**PROJECT**  
**902**

<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA2, SSN BA0515 Combat ID/Aiming Light	0	10939	8503	0	0	0	0	0	0	0

**C. Acquisition Strategy:** A competitive, cost plus incentive fee (CPIF) contract for the design, fabrication and testing of 50 units was awarded in July 1997. A follow-on, Fixed Price (FP), sole source, Low Rate Initial Production (LRIP) contract, based on demonstrated technical test results, will be awarded in June 2001 to provide an orderly ramp up to production. A follow-on FP, sole-source, production contract will be awarded in FY03.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Govt Development Test, Phase I	4Q			0	0	0	0	0
Complete fabrication of 50 hardware systems		1Q		0	0	0	0	0
Development Test, Phase II		1-2Q		0	0	0	0	0
Airborne Certification		3Q		0	0	0	0	0
LRIP IPR		3Q		0	0	0	0	0
LRIP Award		3Q		0	0	0	0	0
DARI		4Q		0	0	0	0	0
Initial Operational Test & Evaluation (IOT&E)			4Q	0	0	0	0	0
Production Readiness Review				0	0	0	0	0
Production Award				0	0	0	0	0
FUE (Production representative EMD units)				0	0	0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604817A - Combat Identification**

**PROJECT**  
**902**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Hardware	C/CPIF	Motorola, Scottsdale, AZ	20979	1319	1Q	0		0	0	0	0	0
Subtotal:			20979	1319		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Sys Eng/Tech Assist	C/T&M	Misc	120	0		0		0	0	0	0	0
b . Matrix Support	MIPR	Misc	641	142	1Q	89	1Q	0	0	0	0	0
Subtotal:			761	142		89		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604817A - Combat Identification**

**PROJECT**  
**902**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Planning/Execution	MIPR	CECOM, ATEC, WSMR, SLAD, etc	804	133	1Q	465	1Q	0	0	0	0	0
b . Development Test, Phase I, II	MIPR	WSMR, OTC, ATEC, etc	0	694	2Q	0		0	0	0	0	0
c . DARI	MIPR	WSMR	0	300	1-2Q	0		0	0	0	0	0
d . IOTE	MIPR	ATEC, OTC	0	0		2271	4Q	0	0	0	0	0
Subtotal:			804	1127		2736		0		0	0	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management		PM Combat ID	799	279	1Q	189	1Q	0	0	0	0	0
b . SBIR/STTR			0	88		0		0	0	0	0	0
Subtotal:			799	367		189		0		0	0	0
Project Total Cost:			23343	2955		3014		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604818A - Army Tac Comm & Cont Hardware & Software**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	42864	39059	50887	0	0	0	0	0	0	0
323 COMMON HARDWARE SYSTEMS	13681	12454	10281	0	0	0	0	0	0	0
334 COMMON SOFTWARE	0	4568	4720	0	0	0	0	0	0	0
C34 ARMY TAC C2 SYS ENG	21715	16065	27951	0	0	0	0	0	0	0
C39 TACTICAL OPERATIONS CENTERS (TOCS)	7468	5972	7935	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

The umbrella program to exploit automation technology for the conduct of combat operations is the Army Tactical Command and Control System (ATCCS) program which is a component of the Army Battle Command System (ABCS). The ATCCS program provides automation in the five battlefield functional areas (BFAs) with the following specific systems: (1) Maneuver Control System (MCS); (2) Advanced Field Artillery Tactical Data System (AFATDS); (3) All Source Analysis System (ASAS) for Intelligence/Electronic Warfare; (4) Forward Area Air Defense Command, Control and Intelligence System (FAADC2I); and (5) Combat Service Support Control System (CSSCS) and to other Army Joint and Allied systems. To provide an overall technically sound, cost effective, and operationally responsive approach, the design and development of ATCCS must be accomplished on a total systems basis. The ATCCS Engineering program provides the required systems engineering to assure integrated Army tactical command and control, and the utilization of common hardware and software throughout the five ATCCS nodal systems. This project includes the Central Technical Support Facility (CTS) which provides a single technical "center of mass" for software checkout and physical system integration. The Common Hardware Software (CHS) project provides common hardware and software to customers to meet their developmental and fielding needs. The Tactical Operations Centers (TOCs) project designs and develops the TOCs that form the structural backbone of the Army's digitized fielding concept. These systems support the legacy to objective transition path of the Transformation Campaign Plan (TCP)

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604818A - Army Tac Comm & Cont Hardware & Software**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	38970	33420	37335	0
Appropriated Value	39799	39420	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-975	0	0	
c. Omnibus or Other Above Threshold Reprogrammings	1225	0	0	
d. Below Threshold Reprogramming	2994	0	0	
e. Rescissions	-179	-361	0	
Adjustments to Budget Years Since FY2001 PB	0	0	13552	
Current Budget Submit (FY 2002/2003 PB )	42864	39059	50887	0

Funding - FY 2000: Omnibus or Other Above Threshold Reprogrammings: Transfer of funds (-500) to O&M, Defense-Wide as directed in Section 219 of the Omnibus Consolidation Appropriation to help complete the Washington Square project, initiated by the Department of Defense in previous years. Army Transformation (+1875). Below Threshold Reprogramming: Part of AMDPCS UFR (+1402), DA reprogramming for JCF AWE (+2390), Maneuver Control Bill (+200K), Part of AMDPCS UFR and JTRS bill (-998).

FY 2001: \$6M Congressional add for Next Generation Command & Control.

FY 2002: PBD 703 Plus Up of \$13552 to C34 to finance SE&I costs for ATCCS under one funding line.

FY 2003: PBD 703 Plus Up of \$13428 to C34 to finance SE&I costs for ATCCS under one funding line.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604818A - Army Tac Comm &amp; Cont Hardware &amp; Software</b>				PROJECT <b>323</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
323 COMMON HARDWARE SYSTEMS	13681	12454	10281	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Project D323 Common Hardware Systems (CHS): CHS is the program through which the Army builds its integrated efforts for tying together the Army Battle Command Systems (ABCS). The project provides vehicles (contracts) through which customers can acquire state-of-the-art common hardware/software and associated peripherals to meet developmental and fielding needs. The project also provides software technology support and command post internal structures within shelters. The common software supports Army, other Services and Joint systems. The CHS program is instrumental in digitizing the battlefield.

**FY 2000 Accomplishments**

- 2330 Continued management of the acquisition and delivery of CHS-2 equipment in support of customer requirements
- 369 Continued supporting customers testing efforts with CHS equipment
- 4000 Leveraged advanced 3-D display technologies for Army and other services
- 3853 Continued execution of common hardware, software technology and software reuse programs
- 1699 Continued developing and upgrading Defense Information Infrastructure Common Operating Environment (DII COE) products/integrating into ABCS systems and other Army systems
- 1430 Continued exploring state of the art technology insertion in support of ABCS programs

Total 13681

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604818A - Army Tac Comm & Cont Hardware & Software**

PROJECT

**323**

## **FY 2001 Planned Program**

- 2619 Continue management of the acquisition and delivery of CHS-2 equipment in support of customer requirements
- 617 Continue supporting customers testing efforts with CHS equipment
- 6000 Next generation command and control system. Integration of the Army's Advanced Warfare Environment's commercial technology solution and architecture into the Army's legacy and emerging command and control systems.
- 322 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) programs
- 2896 Continue technology insertion and ABCS integration efforts

Total 12454

## **FY 2002 Planned Program**

- 2130 Continue management of the acquisition and delivery of CHS-2 equipment in support of customer requirements
- 5000 Initiate follow-on CHS ABCS Information Technology (AIT) contract requirements effort (CHS-3)
- 743 Continue supporting customers testing efforts with CHS equipment
- 2408 Continue technology insertion and ABCS integration efforts

Total 10281

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

**C. Acquisition Strategy:** The overall goal is to improve interoperability and lower life cycle costs by standardizing Battlefield Command and Control (C2) automation through centralized buys of non-developmental items (NDI), standardized protocols and reusable software. Four NDI hardware versions are available to meet specific needs of each Battlefield Functional Area ( BFA): handheld, portable, transportable and lightweight computer unit.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604818A - Army Tac Comm & Cont Hardware &  
 Software**

PROJECT  
**323**

<b>D. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
LCU contract expires		3Q		0	0	0	0	0
CHS-2 Technology Insertion (continuous)	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Initiate follow-on CHS ABCS Information Technology (AIT) Contract Requirements effort (CHS-3)			1Q	0	0	0	0	0
CHS AIT contract award (CHS-3)				0	0	0	0	0
Delivery of AIT V2 initial production hardware (CHS-3)				0	0	0	0	0
CHS-2 contract expires				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604818A - Army Tac Comm & Cont Hardware & Software**

**PROJECT**  
**323**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CHS Integrated Product Team - Testing/Logistics/Safety/Technical Writing Support and CHS-3 Efforts	MIPR	CECOM Matrix Support, Fort Monmouth, NJ	19933	725	1-2Q	1130	1-2Q	0	0	0	0	0
b . CHS-2 Program Support		PM ATCCS In-House Govt Support, Fort Monmouth, NJ	19950	1621		1886		0	0	0	0	0
c . Technical Insertion/ABCS Integration Efforts	FFP/IDIQ	General Dynamics, Taunton, MA	7177	2896	1-3Q	2408		0	0	0	0	0
d . Contractor Support - Engineering/Logistics/CHS-2 Ordering and CHS-3 Efforts	Competitive/T&M	PM ATCCS, Fort Monmouth, NJ	31792	617	1-3Q	4248	1-3Q	0	0	0	0	0
e . Hi-Tech Software Contract	Competitive/T&M	CSC, Fort Monmouth, NJ office	7754	0		0		0	0	0	0	0
f . Systems Engineering Support	MIPR	MITRE (FFRDC), Eatontown and Fort Monmouth, NJ office	9518	390	1Q	390	1Q	0	0	0	0	0
g . 3-D Display Technology		Concurrent Technology Corporation, PA	4000	6000		0		0	0	0	0	0



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604818A - Army Tac Comm &amp; Cont Hardware &amp; Software</b>	<b>PROJECT</b> <b>323</b>
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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			100124	12249		10062		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House - Overhead/Secretary/Program Analyst		PM ATCCS, Fort Monmouth, NJ	0	205		219		0	0	0	0	0
Subtotal:			0	205		219		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604818A - Army Tac Comm &amp; Cont Hardware &amp; Software</b>	PROJECT <b>323</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			100124	12454		10281		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604818A - Army Tac Comm &amp; Cont Hardware &amp; Software</b>				PROJECT <b>334</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
334 COMMON SOFTWARE	0	4568	4720	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Project D334 Common Software (CS): Common Software is the program through which the Army procures, develops, integrates, and tests common software products and or modules and or components for both the Army and Joint Services through the Defense Information Infrastructure Common Operating Environment (DII COE). The CS project provides state-of-the-art software technologies. The CS program is a cornerstone in the Army's battlefield digitization efforts.

**FY 2000 Accomplishments**

Funded in D323.

**FY 2001 Planned Program**

- 913 Continue the management of the acquisition and delivery of CS and Commercial off the Shelf (COTS) products in support of Army and Joint Service customer requirements.
  - 3519 Continue execution of the common software technology and reuse program, continue supporting customer integration and testing, continue the exploration and evaluation of new software technologies in support of the overall CS program and continue developing, upgrading and delivery of DII COE products into Army and Joint Service systems.
  - 136 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
- Total 4568

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604818A - Army Tac Comm &amp; Cont Hardware &amp; Software</b>	PROJECT <b>334</b>
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**FY 2002 Planned Program**

- 859 Continue the management of the acquisition and delivery of CS and COTS products in support of Army and Joint Service customer requirements.
  
- 3861 Continue execution of the Common Software technology and reuse program, continue supporting customer integration and testing, continue the exploration and evaluation of new software technologies in support of the overall CS program and continue developing, upgrading and delivery of DII COE products into Army and Joint Service systems.

Total 4720

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

**C. Acquisition Strategy:** The overall goal is to improve software development, integration and interoperability, and to lower life cycle costs by providing common software products to the Army and Joint Services. This strategy will be realized through defined Application Program Interfaces (APIs), standardized protocols, reusable software and standard commercial products.

**D. Schedule Profile:** Not applicable for this item.

Delivery of software is every six months.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604818A - Army Tac Comm & Cont Hardware & Software**

**PROJECT**  
**334**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix-CECOM	MIPR	Fort Monmouth, NJ	0	362	1-3Q	365	1-3Q	0	0	0	0	0
b . In-House		PM ATCCS, Fort Monmouth, NJ	0	338	1-4Q	279	1-4Q	0	0	0	0	0
c . Misc Contracts	MIPR	GSA	0	66	1-3Q	70	1-3Q	0	0	0	0	0
d . CSC	Competitive with options	Computer Science Corp, Falls Church, VA	0	3453	1-3Q	3791		0	0	0	0	0
e . SBIR/STTR			0	136	2Q	0		0	0	0	0	0
<b>Subtotal:</b>			0	4355		4505		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604818A - Army Tac Comm &amp; Cont Hardware &amp; Software</b>						PROJECT <b>334</b>		
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House		Ft. Monmouth, NJ	0	213		215		0	0	0	0	0
Subtotal:			0	213		215		0		0	0	0
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0
Project Total Cost:			0	4568		4720		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604818A - Army Tac Comm &amp; Cont Hardware &amp; Software</b>				PROJECT <b>C34</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C34 ARMY TAC C2 SYS ENG	21715	16065	27951	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Project DC34 - Army Tactical C2 Systems (ATCCS) Engineering: The Air/Land Battle Doctrine requires military leaders to make sound and timely command and control decisions to direct the activities of assigned and supporting units. The umbrella program to exploit automation technology in support of this mission is the ATCCS program, a component of the Army Battle Command System (ABCS). The effort to achieve horizontal integration of the ATCCS BFAs, although going on independently in each BFA, was not disciplined enough to address all connections and needs within the entire spectra of command, control, and communications. Therefore, to ensure this horizontal integration effort is complete and fully automated, a significant management, systems engineering and integration effort is required. Within the SE&I line, requirements accomplished are System of Systems Engineering and Integration. Additionally, a key component of the overall effort is the Central Technical Support Facility (CTSF) located at Fort Hood, Texas. The CTSF provides a centralized on-the-ground capability to ensure interoperability among various digitized platforms and serves as the final integration and maturation facility for Common Operating Environment (COE). The CTSF is the Warfighters "Edge" that acts as an enabler for rapid integration of dissimilar software and hardware systems through real time on-site integration of soldiers, contractors, testers, Program Managers, and the requirements community. Also, the CTSF provides a single technical "center of mass" for software checkout and system integration and provides a controlled environment with connectivity to other C4I systems either on-site or through the Army Interoperability Network (AIN) to support digital integration and fielding.

**FY 2000 Accomplishments**

- 346 Conducted and supported system configuration management /development and support
- 1874 Continued ABCS/AWE Integrated Logistics Support
- 1092 Continued ABCS/AWE Testing and Evaluation of all BFA fielded software
- 575 Continued ABCS/AWE Fielding/Scheduling
- 1927 Continued ABCS /AWE information engineering
- 430 Conducted and supported system interoperability engineering
- 277 Continued exploring state of the art technology insertion in support of the ABCS program
- 242 Continued development and implementation of the ABCS information assurance

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604818A - Army Tac Comm & Cont Hardware &  
Software**

PROJECT

**C34**

## FY 2000 Accomplishments (Continued)

- 2687 Continued ABCS/AWE System of Systems Engineering and Integration
- 8000 Central Technical Support Facility (CTSFD) efforts to meet the Army's digital fielding requirements.
- 2390 Joint Contingency Force (JCF) AWE Support
- 1875 Initial Brigade Combat Team Support

Total 21715

## FY 2001 Planned Program

- 1531 Continue ABCS/AWE Integrated Logistics Support/configuration management
- 1098 Continue ABCS/AWE Testing and Evaluation of all BFA fielded software
- 457 Continue ABCS/AWE Fielding/Scheduling
- 1614 Continue ABCS/AWE information engineering
- 523 Conduct and supported system interoperability engineering
- 273 Continue exploring state of the art technology insertion in support of the ABCS program
- 295 Continue development and implementation of the ABCS information assurance
- 1796 Continue ABCS/AWE System Engineering and Integration
- 8000 Central Technical Support Facility Technical Division (CTSFD) efforts to meet the Army's digital fielding requirements.
- 478 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) programs

Total 16065



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604818A - Army Tac Comm & Cont Hardware & Software**

PROJECT

**C34**

**FY 2002 Planned Program**

- 333 Continue ABCS/AWE Integrated Logistics Support/configuration management
- 865 Continue ABCS/AWE Testing and Evaluation of all BFA fielded software
- 1702 Continue ABCS/AWE Fielding/Scheduling
- 1500 Continue DD2-N Support
- 1926 Continue ABCS/AWE information engineering
- 638 Conduct and support system interoperability engineering
- 327 Continue exploring state of the art technology insertion in support of the ABCS program
- 809 Continue development and implementation of the ABCS information assurance
- 5156 Continue ABCS/AWE System Engineering
- 5500 Continue System of System Development
- 8000 Central Technical Support Facility Technical Division (CTSF-TD) efforts to meet the Army's digital fielding requirements.
- 1195 Continue System/Equipment DA Mandated Interoperability Certification

Total 27951

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

**C. Acquisition Strategy:** This project provides the technical and programmatic disciplines required for systems engineering and integration, experimentation, acquisition management, testing, software development, interoperability, fielding, and sustainment to insure an interoperable and affordable ATCCS. The Program Executive Officer for Command , Control, and Communications (PEO C3S) has planned an evolutionary approach to fielding ATCCS as soon as possible.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604818A - Army Tac Comm & Cont Hardware & Software**

PROJECT  
**C34**

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
DIGITAL CAPSTONE EXERCISE		2Q		0	0	0	0	0
FIRST DIGITIZED DIVISION		1Q		0	0	0	0	0
ABCS 6.2.1		3Q		0	0	0	0	0
PRAIRIE WARRIOR		3Q		0	0	0	0	0
ABCS 7.0 SOFTWARE INTEGRATION			2Q	0	0	0	0	0
NTC 00-05			2Q	0	0	0	0	0
ABCS 7.0 SOFTWARE INTEGRATION			2Q	0	0	0	0	0
2ND IBCT FIELDING			4Q	0	0	0	0	0
ROVING SANDS				0	0	0	0	0
3RD IBCT FIELDING				0	0	0	0	0
SECOND DIGITIZED DIVISION (2DD)				0	0	0	0	0
Second Digitized Division (2DD)				0	0	0	0	0
Digitized Corps				0	0	0	0	0
4TH IBCT FIELDING				0	0	0	0	0
101ST AA (Air Assault)				0	0	0	0	0
Digitize XVIII Corps				0	0	0	0	0
5TH IBCT FIELDING				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604818A - Army Tac Comm & Cont Hardware & Software**

**PROJECT**  
**C34**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. TRW	PWD	Fort Monmouth, NJ/Fort Hood, TX	1910	709	1Q	3634	1Q	0	0	0	0	0
b. CSC	PWD	Fort Monmouth, NJ/Fort Hood, TX	12804	2084	2Q	6594	2Q	0	0	0	0	0
c. MITRE	PWD	Ft Monmouth, NJ/Eatontown, NJ	8099	3402	1Q	2632	1Q	0	0	0	0	0
d. MANTECH (Direct Labor)	PWD	Fort Monmouth, NJ/Fort Hood, TX	2470	1926	2Q	2627	2Q	0	0	0	0	0
e. EPG	MIPR	Fort Huachuca, AZ	800	628	1Q	785	1Q	0	0	0	0	0
f. CAMBER (Config Mgt/Testing)	PWD	Fort Hood, TX	0	725	1Q	785	2Q	0	0	0	0	0
g. NICHOLS	MIPR	Fort Hood, TX	0	0		554	3Q	0	0	0	0	0
h. ROBBINS-GIOIA	PWD	Fort Monmouth, NJ/Fort Hood, TX	1005	784	1Q	1300	1Q	0	0	0	0	0
i. RAYTHEON	PWD	Fort Monmouth, NJ/Fort Hood, TX	0	0		250	1Q	0	0	0	0	0
j. LOCKHEED MARTIN	MIPR	Eatontown, NJ	0	732	1Q	2500	1Q	0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604818A - Army Tac Comm & Cont Hardware & Software**

**PROJECT**  
**C34**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . GTE (Labor and Equipment)	PWD	Fort Hood, TX	997	777	1-4Q	407	1-4Q	0	0	0	0	0
l . Misc Contracts	PWD	Fort Monmouth, NJ/Fort Hood, TX	3143	501	1-2Q	711	1-2Q	0	0	0	0	0
m . Unixpros	PWD	Eatontown, NJ	1045	815	1Q	1851	1Q	0	0	0	0	0
n . ATSC	MIPR	Fort Leavenworth, KY	500	390	2Q	350	2Q	0	0	0	0	0
o . IDA	MIPR	Fort Monmouth, NJ	300	234	2Q	400	2Q	0	0	0	0	0
p . ITT	PWD	Eatontown, NJ	1070	0		0		0	0	0	0	0
q . SAIC	PWD	Eatontown, NJ	0	96	1Q	96	1Q	0	0	0	0	0
r . ILEX	PWD	Fort Hood, TX	0	0	1Q	333	1Q	0	0	0	0	0
s . BOOZ-ALLEN	PWD	Eatontown, NJ	0	0		750	2Q	0	0	0	0	0
Subtotal:			34143	13803		26559		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604818A - Army Tac Comm &amp; Cont Hardware &amp; Software</b>	<b>PROJECT</b> <b>C34</b>
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support	MIPRs	Fort Monmouth, NJ/Fort Hood, TX	4389	399	1Q	300	1Q	0	0	0	0	0
b . CECOM Matrix	MIPRs	Fort Monmouth, NJ/Fort Hood, TX	615	590	1Q	1052	1Q	0	0	0	0	0
c . Other Government Support	MIPRs	Fort Monmouth, NJ/Fort Hood, TX/Fort Belvoir, VA	1778	1273	1Q	40	2Q	0	0	0	0	0
Subtotal:			6782	2262		1392		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604818A - Army Tac Comm &amp; Cont Hardware &amp; Software</b>	PROJECT <b>C34</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			40925	16065		27951		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604818A - Army Tac Comm &amp; Cont Hardware &amp; Software</b>					PROJECT <b>C39</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C39 TACTICAL OPERATIONS CENTERS (TOCS)	7468	5972	7935	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Tactical Operations Centers (TOCs) support the overall mission area of "Exercising Command and Control". The TOC program provides commanders and staffs (at all echelons of command from battalion to corps) with integrated digitized command and control facilities. The commander executes battle command and makes decisions based on objective data and his intuitive feel for the battle. To perform these functions, he and his staff require command, control and communications systems integrated on mobile platforms capable of keeping pace with maneuver forces. The TOC program provides the integrated digitized physical infrastructure (platforms and networks) that operates under all conditions on the modern battlefield and provides the real-time situational understanding (Common Operating Picture) inherent in the command and control systems that comprise the Army Battle Command System (ABCS). These digitized TOCs are key to ensuring that information superiority and force synchronization are gained on the tactical and operational battlefield. TOCs are required for all types of combat, combat support and combat service support units. The program is critical to Army modernization/transformation. The RDT&E Program provides continued support to prototype TOCs developed for the Division XXI Advanced Warfighting Experiment (AWE). Develops and matures the enabling technologies required to meet the ABCS Capstone Requirements Document (CRD). Develops TOC designs for the First Digitized Corps/Divisions and the transformation force. Examples of efforts requiring technology development are: voice, video and data over the Local Area Network (LAN) that will provide the commander with "virtual" TOC with no need for physical proximity and a Command Information Center (CIC) that links the entire staff and displays relevant information feed in real-time throughout the TOC.

**FY 2000 Accomplishments**

- 1900 Sustain Division XXI prototype TOCs
  - 1261 Develop enabling technologies and technology insertion
  - 4207 System and design engineering for FDD
- Total 7368

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604818A - Army Tac Comm & Cont Hardware &  
Software**

PROJECT

**C39**

## **FY 2001 Planned Program**

- 2215 Sustain Division XXI prototype TOCs
- 2551 System and design engineering for 4th ID, 2nd CAV Division and IBCT
- 807 Develop enabling technologies and technology insertion
- 221 ABCS SE&I
- 178 SBIR/STTR

Total 5972

## **FY 2002 Planned Program**

- 2325 Sustain Division XXI Prototype TOCs
- 4620 System and design engineering for 1st CAV and IBCT (Transformation Forces)
- 990 Develop enabling technologies and technology insertion

Total 7935



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604818A - Army Tac Comm &amp; Cont Hardware &amp; Software</b>	PROJECT <b>C39</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Other Procurement Army 2 - SSN: BZ9865	34777	57606	38952	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The acquisition strategy relies heavily on non-developmental items (NDI) and Government-furnished equipment (GFE) to design, integrate, assemble, test, train, and field Tactical Operations Centers (TOCs) for FDD, SDD, III Corps adn IBCTs. Sustainment of existing prototype Div XXI AWE TOCs will continue into FY 04.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Design Reviews	4Q	4Q	4Q	0	0	0	0	0
Interoperability Demonstration	4Q	3Q	1Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604818A - Army Tac Comm &amp; Cont Hardware &amp; Software</b>	<b>PROJECT</b> <b>C39</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. TRW	SS/CPFF	Huntsville, AL	5304	1908	2Q	2894	1Q	0	0	0	0	0
b. Motorola	C/CPFF	Huntsville, AL	4915	2683	1-2Q	3941	1-2Q	0	0	0	0	0
c. In-House/Gov't Support	Various	Various	1460	782	2Q	900	1-2Q	0	0	0	0	0
d. SBIR/STTR			0	178	1-2Q	0		0	0	0	0	0
e. ABCS SE& I			0	221	1Q	0		0	0	0	0	0
<b>Subtotal:</b>			11679	5772		7735		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. SETA	Various	Various	200	200	3Q	200	2Q	0	0	0	0	Continue
<b>Subtotal:</b>			200	200		200		0		0	0	Continue

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604818A - Army Tac Comm &amp; Cont Hardware &amp; Software</b>	PROJECT <b>C39</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			11879	5972		7935		0		0	0	Continue
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604819A - Line-of-Sight Anti-Tank (LOSAT) Missile</b>				PROJECT <b>046</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
046 LINE-OF-SIGHT ANTI-TANK (LOSAT) MISSILE	0	26555	21596	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

Line-of-Sight Anti-Tank (LOSAT) and the Kinetic Energy Missile (KEM) technology provide the foundation for the Objective Force. This program focuses on the integration of the LOSAT weapon system into an air-mobile configuration in order to help remedy the early entry force lethality shortfall against heavy armor in support of the Army Transformation. The LOSAT weapon system consists of a kinetic energy (KE) missile launcher mounted on a heavy High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) chassis. LOSAT offers a highly mobile, near-term, advanced capability for overwhelming armor destruction with a high rate of fire, increased range, and increased force survivability. LOSAT, deployed in the early entry force, will provide the decisive edge to win swiftly with minimum casualties and with an assault support weapon capability. LOSAT is strategically and tactically deployable, giving commanders and decision makers greater flexibility. The performance of this hypervelocity (velocity of a mile per second) kinetic energy missile is not affected by the proliferation of emerging threat active protective systems and enhanced reactive armors which are rapidly becoming available on the global marketplace. In FY98, LOSAT was initiated as a DOD-approved Advanced Concept Technology Demonstration (ACTD) program to position it for future acquisition decisions, demonstration of subsystem capabilities in flight tests and dirty battlefield environments, evaluation of its utility for early entry forces, demonstration of an integrated HMMWV-based LOSAT system in-flight tests and advanced warfighting experiments, and evaluation of affordability issues. In December 1999, the Army and DOD, funded the LOSAT accelerated advanced development and procurement as part of the Army Transformation, adding additional design activities, test hardware, and qualification and operational tests concurrent with the ACTD, which will assure design maturity support for entry into Low Rate Initial Production (LRIP) in FY 04. This EMD effort is concurrent with the ACTD contract. The ACTD is funded in PE 0603654A. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

Project not funded.

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)****June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604819A - Line-of-Sight Anti-Tank (LOSAT)  
Missile**

PROJECT

**046****FY 2001 Planned Program**

- 3380 Update Performance Specifications to include new Operational Requirements Document.
- 10685 Update Missile and Fire Unit preliminary designs to incorporate new Performance Specification Requirements.
- 1740 Update Fire Unit software requirements analysis to incorporate new Performance Specification Requirements.
- 2500 Conduct Reliability, Maintainability, Producibility analyses.
- 4560 Begin enhanced Built-in-test/Built-in-test equipment requirements into electronic components of Fire Unit and Missile.
- 2900 Begin Supportability analysis to support production/fielding objectives.
- 790 Small Business Innovative Research/Small Business Technology Transfer.

Total 26555

**FY 2002 Planned Program**

- 8266 Complete Fire Unit detail designs incorporating new performance specification requirements, and initiate fabrication of new hardware requirements.
- 2145 Complete Missile detail designs incorporating new performance specification requirements.
- 2300 Begin Missile fabrication, assembly, and test of additional qualification test hardware.
- 1000 Finalize design modifications and initiate fabrication of resupply trailer and HMMWV.
- 2385 Finalize software enhancements and BIT/BITE software into Fire Unit software.
- 5500 Continue supportability analysis to support production/fielding objectives.

Total 21596

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604819A - Line-of-Sight Anti-Tank (LOSAT)  
Missile**

PROJECT  
**046**

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	0	26800	21500	0
Appropriated Value	0	26800	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	0	-245	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	96	0
Current Budget Submit (FY 2002/2003 PB )	0	26555	21596	0

<b><u>C. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
H09100 LOSAT	0	0	11427	0	0	0	0	0	0	0
0603654A Line-of-Sight Technology Demo	37326	50262	57384	0	0	0	0	0	0	0

**C. Other Program Funding Summary:** \*FY02/03 Procurement funds will procure 144 missiles which is the residual inventory of the ACTD effort.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604819A - Line-of-Sight Anti-Tank (LOSAT)  
 Missile**

PROJECT  
**046**

**D. Acquisition Strategy:** The Line-of-Sight Anti-Tank additional development and qualification effort to support the Army Transformation will be conducted in conjunction with the on-going ACTD effort, and the US Army Aviation and Missile Command (AMCOM) has awarded the EMD contract. A Milestone Decision Review will be conducted in FY04 to assess design maturity and authorize entry into Low Rate Initial Production (LRIP).

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Award Risk Reduction Design and Test		1Q		0	0	0	0	0
Preliminary Design Reviews		3Q		0	0	0	0	0
Complete Component Level Qualifications			2Q	0	0	0	0	0
Begin Missile and Fire Unit Assembly			3Q	0	0	0	0	0
Begin System Qualification and Flight Tests				0	0	0	0	0
Begin User Experimentation				0	0	0	0	0
Complete Qualification and Flight Tests				0	0	0	0	0
Limited User Testing				0	0	0	0	0
LRIP Decision Milestone				0	0	0	0	0
Fielding and Extended User Evaluation				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604819A - Line-of-Sight Anti-Tank (LOSAT) Missile**

**PROJECT**  
**046**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . EMD Contract	CPIF	LMMFC, Dallas, TX	0	19515	1Q	13438	1Q	0	0	0	0	0
b . Live Fire Hardware	CPFF	Alliant Tech	0	1610	2Q	0		0	0	0	0	0
c . RDEC Support	TBD	Huntsville, AL	0	290		2366		0	0	0	0	0
d . Follow-on-Development	TBD	TBD	0	0		0		0	0	0	0	0
Subtotal:			0	21415		15804		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support			0	2864		3241		0	0	0	0	0
b . Functional Government Support			0	238		318		0	0	0	0	0
c . MISC			0	868		20		0	0	0	0	0
Subtotal:			0	3970		3579		0		0	0	0



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604819A - Line-of-Sight Anti-Tank (LOSAT) Missile**

**PROJECT**  
**046**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Range Support			0	465		698		0	0	0	0	0
b . Other Test			0	52		245		0	0	0	0	0
Subtotal:			0	517		943		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Engineering Tech Asst		Huntsville, AL	0	653		1270		0	0	0	0	0
Subtotal:			0	653		1270		0		0	0	0

Project Total Cost:			0	26555		21596		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> 5 - ENG MANUFACTURING DEV			<b>PE NUMBER AND TITLE</b> 0604820A - RADAR DEVELOPMENT						<b>PROJECT</b> E10	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
E10 SENTINEL	4952	13306	5162	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE:** This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

The Sentinel, AN/MPQ-64, consists of a High Mobility Multipurpose Wheeled Vehicle (HMMWV) towed radar-based sensor with its prime mover/power, identification friend or foe (IFF), and Forward Area Air Defense (FAAD) Command, Control, and Intelligence (C2I) interfaces. The sensor is an advanced three-dimensional battlefield X-Band air defense phased-array radar with an instrumented range of 40 km. The Sentinel is capable of operating day or night, in adverse weather conditions, in the battlefield environments of dust, smoke aerosols, and enemy countermeasures. It provides 360-degree azimuth coverage for acquisition and tracking. The Sentinel contributes to the digital battlefield by automatically detecting, classifying, identifying, and reporting targets (cruise missiles, unmanned aerial vehicles, rotary wing and fixed wing aircraft). This Modernization Program will improve Sentinel's capability against evolving threats. The Modernization Program will provide increased capabilities for the Sentinel to keep abreast of the evolving technological threat of small radar cross-section targets such as cruise missiles and unmanned aerial vehicles. In order to engage at ranges beyond visual, the Short Range Air Defense (SHORAD) system must detect and track the target at sufficient range to alert, and cue the gunner to the target. The Sentinel Modernization efforts extend the range of Sentinel against reduced radar cross section targets so the gunner will receive a cue with sufficient time to engage at ranges beyond visual. However, cueing alone is not sufficient to support an engagement. The target either must be identified as a foe or must be classified as an engageable target (unmanned) that is a threat to defended assets. The Modernization program positions Sentinel to determine aircraft type or to support manned versus unmanned determinations to fully support engagements beyond visual range. The Sentinel system will be modernized so the emerging threat is both classified and detected with a high level of confidence. This system supports the Legacy transition path of the Transformation Campaign Plan (TCP) by ensuring that the Sentinel systems in the field support the acquisition, tracking and classification of targets to enable the SHORAD weapons to engage these targets at maximum effective range.

**FY 2000 Accomplishments**

- 3700 Conducted Transmitter Prototype Design and Development
- 1252 Conducted Enhanced Target Range Acquisition and Classification (ETRAC) Prototype Design and Development - Requirements Definition. ETRAC encompasses the Waveform and Target Classification Upgrade efforts. The waveforms are required to accomplish the target range increase and classify targets. When integrated into the Sentinel radar system, ETRAC will support the acquisition, tracking and classification of advanced targets to enable the SHORAD weapons to engage these targets at maximum effective range.

Total 4952

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604820A - RADAR DEVELOPMENT</b>	PROJECT <b>E10</b>
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**FY 2001 Planned Program**

- 3119 Complete Transmitter Protoype Design and Development
- 3208 Conduct ETRAC Prototype Design and Development (Key Performance Parameter (KPP) Demonstration Contract Phase)
- 4837 Buy 2 ETRAC Prototypes to support KPP Demonstration
- 1003 ETRAC Receiver/Exciter Risk Mitigation Efforts
- 497 Initiate Integration and Test of ETRAC
- 247 Conduct ETRAC Target Classification Prototype Design and Development
- 395 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)

Total 13306

**FY 2002 Planned Program**

- 2047 Complete ETRAC Prototype Design and Development
- 444 Complete ETRAC Target Classification Prototype Design and Development
- 2671 Complete Integration and Test of ETRAC

Total 5162

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	5128	8429	3639	0
Appropriated Value	5128	13429	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	-21	0	0	0
b. SBIR / STTR	-137	0	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-18	-123	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	1523	0
Current Budget Submit (FY 2002/2003 PB )	4952	13306	5162	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604820A - RADAR DEVELOPMENT**

PROJECT  
**E10**

FY 2001 - Received Congressional plus-up of \$5M to support Sentinel Development efforts. (\$1.7M for Improved Transmitter Risk Mitigation efforts, \$3.3M for the Receiver Exciter Upgrade/Acceleration and Risk Mitigation (ETRAC) efforts).  
 FY 2002 - Funding was increased to support completion of integration and test efforts for the ETRAC Modifications necessary to address emerging threat and Army extension of the engagement envelope by providing extended range and enhanced target classification.

<b>C. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Other Procurement, Army 2 (SSN WK 5053)	48298	25944	1887	0	0	0	0	0	0	0
Other Procurement, Army 2 (SSN WK 5057)	0	0	30885	0	0	0	0	0	0	0
Spares (SSN BS 9732)	3841	1904	2061	0	0	0	0	0	0	0

**D. Acquisition Strategy:** The Modernization Program awarded a sole source Cost Plus Award Fee (CPAF) contract to the production manufacturer for the transmitter effort. The Modernization Program also awarded an additional sole source Cost Plus Fixed Fee (CPFF) contract to the production manufacturer for the ETRAC efforts during FY00. The ETRAC contract will be executed in three phases. The first phase finalizes the requirement definition. The second phase continues through successful demonstration of prototypes with Key Performance Parameter (KPP) capabilities, and the third phase continues to successful integration and test of target classification capabilities. Continuation of each phase is dependent on the successful completion of the previous phase limiting the risk to the Government. Additionally, a portion of the ETRAC risk mitigation efforts include dual development of an exciter to support the ETRAC modernization efforts. The better solution will be used in the ETRAC production follow on. Both the ETRAC and the Transmitter efforts will aggressively implement the tenets of Cost As an Independent Variable (CAIV) to assure Total Ownership Costs of the Sentinel are reduced. The program will take advantage of already developed items and certain off-the-shelf technologies to minimize risk while ensuring cost, schedule and performance goals are achieved.

<b>E. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Transmitter Critical Design Review	1Q			0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604820A - RADAR DEVELOPMENT**

**PROJECT**  
**E10**

<b><u>E. Schedule Profile (continued)</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
ETRAC Contract Signed (Contract Kick-Off)	4Q			0	0	0	0	0
ETRAC Waveform/Signal Data Processor Design		1-2Q		0	0	0	0	0
Range Extension SW Design		1-2Q		0	0	0	0	0
Transmitter Integration and Test		4Q		0	0	0	0	0
Target Classification Design Validation		3Q		0	0	0	0	0
ETRAC Key Performance Parameters (KPP) Demonstration			3Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604820A - RADAR DEVELOPMENT**

**PROJECT**  
**E10**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Development	C/FFP	Hughes Aircraft Co., Fullerton, CA	56836	0		0		0	0	0	0	0
b . Technical requirement definition, corrective action & simulation	MIPR	Various AMCOM contractors/locations	18704	0		0		0	0	0	0	0
c . Misc requirements definition, ECM and survivability efforts.	MIPR	Various other agency contractors/locations	5270	0		0		0	0	0	0	0
d . Improved Transmitter Modernization Development	SS/CPAF	Raytheon Systems Company , El Segundo, CA	5796	3006	1-3Q	0		0	0	0	0	0
e . ETRAC Modernization Requirements Definition, KPP Demo and Target Classification Validation	SS/CPFF	Raytheon Systems Company , El Segundo, CA	2948	7948	3Q	2106	2Q	0	0	0	0	0
Subtotal:			89554	10954		2106		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604820A - RADAR DEVELOPMENT**

**PROJECT**  
**E10**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Support Services	MIPR/1095	AMCOM, Redstone Arsenal, AL	11802	1369	2Q	889	2Q	0	0	0	0	0
b . Other Agency Support Services	MIPR	Various	2118	675		0		0	0	0	0	0
Subtotal:			13920	2044		889		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IOT&E	MIPR/1095	OPTEC, Alexandria, VA	24180	0		0		0	0	0	0	0
b . Other/Misc Test and Evaluation Activity	MIPR/1095	Various	7703	82	2Q	0		0	0	0	0	0
c . Technical Test	MIPR/1095	Redstone Technical Test Center, Redstone Arsenal, AL	1213	0		0		0	0	0	0	0
d . ETRAC KPP Demonstration	1095	Various	0	0		1518	1Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604820A - RADAR DEVELOPMENT**

**PROJECT**  
**E10**

III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			33096	82		1518		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Product Manager support	MIPR/1095	PM Sentinel/AMCOM	10643	226	1Q	501	1Q	0	0	0	0	0
b . Contractor Support to Product Manager	FP/CPFF	Vista Tech, Huntsville, AL	185	0		0		0	0	0	0	0
c . Contractor Support to Product Manager	CP FF	O2K Contractor Huntsville, AL	0	0		148	2Q	0	0	0	0	0
Subtotal:			10828	226		649		0		0	0	0

Project Total Cost:			147398	13306		5162		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>			PE NUMBER AND TITLE <b>0604823A - FIREFINDER</b>						PROJECT <b>L85</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L85      FIREFINDER AN/TPQ-47	38797	46928	26956	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE:** This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

The Firefinder AN/TPQ-47 will replace the AN/TPQ-37 Artillery Locating Radar. This program is in response to the approved Mission Need Statement (MNS) for the Advanced Firefinder System which describes an urgent need for a longer range and less manpower intensive radar. An Operational Requirements Document (ORD) for the Firefinder AN/TPQ-47 was approved 25 Sep 96. The Firefinder AN/TPQ-47 will double the current artillery range performance out to 60km and improve the target throughput up to 50 targets per minute in a highly mobile, transportable and survivable system. The Firefinder AN/TPQ-47 will provide a new capability of missile and rocket detection at ranges of 150-300 km and will be capable of alerting Theater Missile Defense Systems. The system will be capable of C-130 roll-on/roll-off transportability for rapid deployment. Crew size will be reduced from 12 to 9. This program will leverage off the AN/TPQ-36(V)8 Electronics Upgrade program by using the same man-machine interface. The Firefinder AN/TPQ-47 will be integrated into the Army Tactical Command and Control System (ATCCS) by interfacing with the Advanced Field Artillery Tactical Data System (AFATDS).

This system supports the Legacy to Objective (LO) transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 2753      Continued development of the Radar Environmental Simulator System (RESS) and simulation efforts to develop target and clutter models and incorporate Firefinder into Tactical Ballistic Missile (TBM) simulations
- 2252      Initiated development to provide early warning and cueing of TBMs
- 7306      Continued development of Joint Technical Architecture - Army (JTA-A) compliant operational software design, coding and unit test
- 9491      Completed detailed system design and conducted Critical Design Review (CDR)
- 6736      Continued development and manufacture of Power Amplifier Modules and Sub Array Modules for System 1
- 9696      Began build of System #1
- 563        Developed logistics support strategy to include Interactive Electronic Technical Manuals (IETMs)

Total 38797

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)****June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604823A - FIREFINDER**

PROJECT

**L85****FY 2001 Planned Program**

- 2751 Continue development and Validation & Verification (V&V) of the RESS modeling and other simulations
- 14500 Complete build of System #1 and begin integration and contractor test
- 5411 Complete development and manufacture of Power Amplifier Modules and Sub Array Modules for System 2
- 1911 Begin build of System #2
- 11828 Complete development of JTA-A compliant operational software design, coding and unit test
- 9145 Complete development to provide early warning and cueing on TBMs
- 1382 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)

Total 46928

**FY 2002 Planned Program**

- 225 Complete development and V&V of the RESS modelling and other simulations
- 3326 Complete integration and contractor test of System #1
- 18764 Continue build/integration and contractor test of System #2
- 4641 Begin Government Live Ammunition/Verification Testing

Total 26956

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604823A - FIREFINDER**

PROJECT  
**L85**

<b><u>B. Program Change Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	32353	37363	26838	0
Appropriated Value	40253	47363	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-1063	0	0	0
c. Omnibus or Other Above Threshold Reduction	-163	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-230	-435	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	118	0
Current Budget Submit (FY 2002/2003 PB )	38797	46928	26956	0

FY02/03: Fund increases due to a re-baseline of the program that extended the RDT&E effort an additional year.

<b><u>C. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
SSN: BA5100 Firefinder AN/TPQ-47	0	0	0	0	0	0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604823A - FIREFINDER**

PROJECT  
**L85**

**D. Acquisition Strategy:** The original program had a streamlined acquisition strategy. The strategy was to develop three (3) production representative systems in EMD and go directly to a Milestone III Decision and Full Production. The program strategy has been revised to reduce the overall program risk. The FY04 production buy will be a Low Rate Initial Production (LRIP) buy, and those systems will be used to support an Initial Operational Test and Evaluation (IOTE) prior to a full production decision.

<u>E. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete detailed system design and conduct CDR	1-3Q			0	0	0	0	0
Develop and conduct V&V of the RESS	1-4Q	1-4Q	1-3Q	0	0	0	0	0
Develop, code and test JTA-A compliant operational software	3-4Q	1-4Q		0	0	0	0	0
Develop capability to provide early warning and cueing on TBMs	3-4Q	1-4Q		0	0	0	0	0
Fabricate, integrate and conduct contractor test of System #1	3-4Q	1-4Q	1-3Q	0	0	0	0	0
Fabricate, integrate and conduct contractor test of System #2		4Q	1-4Q	0	0	0	0	0
Develop Training Devices				0	0	0	0	0
Conduct Live Ammunition/Verification Test			4Q	0	0	0	0	0
Conduct Limited User Test				0	0	0	0	0
Milestone C for LRIP				0	0	0	0	0
Award LRIP Contract				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604823A - FIREFINDER**

**PROJECT**  
**L85**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Primary Hardware Dev	C/CPIF	Raytheon Sys, CA/MS	50971	39340	1-4Q	21700	1-4Q	0	0	0	0	0
b. Ancillary Hardware Dev	TBD	Various	3188	1515	1-2Q	968	1-2Q	0	0	0	0	0
c. Trainers Dev	SS/TBD	Raytheon Sys, CA/MS	0	0		0		0	0	0	0	0
d. Sys Engrg (Contractor)	C/FP	Various	2042	1112	2Q	206	2Q	0	0	0	0	0
e. Sys Engrg (Government)	MIPR	Various	1337	749	1-2Q	462	1-2Q	0	0	0	0	0
f. Software Engineering	C/FP	Telos, OK	799	558	1-2Q	341	1-2Q	0	0	0	0	0
g. SSEB	MIPR	Various	227	0		0		0	0	0	0	0
<b>Subtotal:</b>			58564	43274		23677		0		0	0	0

Remarks: Primary Hardware Development: These costs include the basic contract, Sub Array Modules re-design effort and TBM development effort. As part of the basic contract terms, Raytheon Systems invested \$16.4M in FY98/99.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604823A - FIREFINDER**

**PROJECT**  
**L85**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Support - Government	MIPR	Various	649	187	1-2Q	207	1-2Q	0	0	0	0	0
b . Integrated Logistics Spt (ILS) - Contractor	TBD	Various	174	210	2Q	126	2Q	0	0	0	0	0
c . ILS Support-Government	MIPR	CECOM, Fort Monmouth, NJ	308	55	2Q	126	2Q	0	0	0	0	0
d . Configuration Mgmt Spt-Government	MIPR	CECOM, Fort Monmouth, NJ	242	129	1Q	133	1Q	0	0	0	0	0
Subtotal:			1373	581		592		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604823A - FIREFINDER**

**PROJECT**  
**L85**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Test & Evaluation (DT&E)	MIPR	Yuma, AZ WSMR, NM	0	70	2Q	1050	2Q	0	0	0	0	0
b . Verification Testing	MIPR	Various	0	0		0		0	0	0	0	0
c . Test Support	MIPR	Various	734	150	1-3Q	150	1-2Q	0	0	0	0	0
Subtotal:			734	220		1200		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management - Contractor	C/FP	Various	964	378	1-2Q	483	1-2Q	0	0	0	0	0
b . Program Management - Government	MIPR	CECOM, Fort Monmouth, NJ	298	125	1Q	129	1Q	0	0	0	0	0
c . Product Manager Office - Internal Support		CECOM, Fort Monmouth, NJ	1295	968	1-4Q	875	1-4Q	0	0	0	0	0
d . SBIR/STTR			0	1382		0		0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604823A - FIREFINDER</b>	<b>PROJECT</b> <b>L85</b>
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IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			2557	2853		1487		0		0	0	0

<b>Project Total Cost:</b>			63228	46928		26956		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604854A - ARTILLERY SYSTEMS - EMD**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	4662	19920	62481	0	0	0	0	0	0	0
2KT CRUSADER OPERATIONAL TEST	0	225	199	0	0	0	0	0	0	0
503 CRUSADER-ED	0	0	39449	0	0	0	0	0	0	0
509 LIGHTWEIGHT 155M HOWITZER	4662	17224	18199	0	0	0	0	0	0	0
516 PALADIN/FAASV	0	2471	4634	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

This program element supports the Joint Light Weight (LW) 155mm Howitzer Engineering and Manufacturing Development program, the Crusader Engineering and Manufacturing Development program, the Crusader Operational Test program, the Paladin/FAASV Improvement program. These systems supports the Legacy transition path of the Transformation Campaign Plan (TCP).

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604854A - ARTILLERY SYSTEMS - EMD**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	4782	20105	54832	0
Appropriated Value	4800	20105	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-120	0	0	
c. Omnibus or Other Above Threshold Reductions	-18	0	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	0	-185	0	
Adjustments to Budget Years Since FY2001 PB	0	0	7649	
New Army Transformation Adjustment	0	0	0	
Current Budget Submit (FY 2002/2003 PB )	4662	19920	62481	0

**Change Summary Explanation:**

Project D509 received additional funding in FY 2002(\$7.6 million) to support additional Towed Artillery Digitization(TAD) integration efforts and to refurbish LW155 EMD howitzers for TAD testing.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604854A - ARTILLERY SYSTEMS - EMD</b>				PROJECT <b>503</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
503 CRUSADER-ED	0	0	39449	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** This project finances the Engineering & Manufacturing Development (EMD) efforts for the Crusader Program. The Crusader system is the Army's next generation self-propelled howitzer (SPH) and artillery resupply vehicles (RSVs) designed to support Army XXI, Joint Vision 2010 and is an integral component of the Army Transformation. Crusader will have significantly increased capabilities in the areas of lethality, mobility, survivability, resupply, command and control, and sustainability to capitalizing on emerging, advanced technologies. The SPH will also achieve increased lethality levels through independent operations. The RSVs will have significantly increased capabilities in the areas of resupply, mobility and survivability and will provide a single source of ammunition, fuel, propellant and other supplies for the SPH. In consonance with the Army Transformation, the Crusader development has been restructured to improve transportability and relevance to the Army's Transformation and objective force. The focus of the revised Crusader program is to increase all modes of deployability while retaining all of its Key Performance Parameters. The revised Crusader system reduces weight and volume and employs a change in resupply vehicle philosophy (an equal mix of tracked(RSV-T) and wheeled(RSV-W) resupply vehicles). The restructured program leverages the successful development to date and continues development activities that support the revised Crusader concept and significant weight reduction initiatives. Major subsystems and technologies remain largely unchanged, but will be repackaged. This system supports the Legacy transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

Project not funded.

**FY 2001 Planned Program**

Project not funded.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604854A - ARTILLERY SYSTEMS - EMD**

PROJECT  
**503**

**FY 2002 Planned Program**

- 39449 Product Development: Order EMD Long Lead Items

Total 39449

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, BA5, Army, PE 0603854, D505	262152	352051	447949	0	0	0	0	0	0	0
Procurement, WTCV, Army, G83500	0	0	0	0	0	0	0	0	0	0
Procurement, WTCV, Army, G83600	0	0	0	0	0	0	0	0	0	0
RDTE, BA5, Army, PE 0604854, D2KT	0	225	199	0	0	0	0	0	0	0
Procurement, Ammo, Army, ER8021	42601	39565	87413	0	0	0	0	0	0	0
RDTE, BA5, Army, PE 0604645, D175	2800	2180	0	0	0	0	0	0	0	0
Procurement, Ammo, Army, ER8017	13951	45215	37548	0	0	0	0	0	0	0
Procurement, OPA, Army, D16500*	0	0	0	0	0	0	0	0	0	0

\*Funding summary represents a portion of the overall funding in D16500, Other Procurement, Army.

**C. Acquisition Strategy:** There will be a seamless transition from PDRR to EMD that eliminates inefficiencies in ramping down/up during the milestone decision. In accordance with the Transformation Plan dated December 1999, Crusader went through a redefinition effort for reduced weight and increased transportability. A revised program schedule and budget was developed to support this effort. Additionally, in June 2000, a revision to the Crusader Acquisition Strategy was signed to support this path forward. The FY01 President's Budget reflected this change. Due to this restructure of both cost and schedule, an adjustment to the Acquisition Program Baseline (APB) was required. On 18 December 2000, the Office of the Secretary of Defense approved Crusader's revised APB. The strategy for development of the lightweight Crusader is to build on the successful development to date on major subsystems; e.g. continue development and testing of the XM297 cannon, exercise the resupply subsystem and software in the Systems Integration Facility (SIF), and continue electronics and software development. The strategy is to continue these efforts without a break, develop weight reduction technologies and initiatives, and re-design the system with the current contractor team.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604854A - ARTILLERY SYSTEMS - EMD**

PROJECT  
**503**

<b>D. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Order EMD Long Lead Items (LLI)			3rd Qtr	0	0	0	0	0
Initiate Manufacturing of EMD Prototypes				0	0	0	0	0
Initiate BH&T Testing				0	0	0	0	0
Initiate Deliveries of EMD Prototypes				0	0	0	0	0
Initiate PPQT Testing				0	0	0	0	0
Order LRIP LLI				0	0	0	0	0
LRIP IPR				0	0	0	0	0
FDTE				0	0	0	0	0
Delivery of LRIP Prototypes				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604854A - ARTILLERY SYSTEMS - EMD**

**PROJECT**  
**503**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Systems Contractor	SS/CPIF	UDLP, Minneapolis, MN	0	0		37537	1Q	0	0	0	0	0
b . Systems Development Engineering	PO	ARDEC, Picatinny Arsenal, NJ	0	0		0		0	0	0	0	0
c . Systems Development Engineering	PO	TACOM, Warren, MI	0	0		0		0	0	0	0	0
d . Systems Development Engineering	PO	ARL, Adelphi, MD	0	0		0		0	0	0	0	0
e . Systems Development Engineering	PO	Various OGAs	0	0		0		0	0	0	0	0
f . Systems Development Engineering	Various	Various Contracts	0	0		1912	1-2Q	0	0	0	0	0
Subtotal:			0	0		39449		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604854A - ARTILLERY SYSTEMS - EMD**

**PROJECT**  
**503**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Support	PO	PM Crusader, Picatinny Arsenal, NJ	0	0		0		0	0	0	0	0
b . Development Support	PO	ARDEC, Picatinny Arsenal, NJ	0	0		0		0	0	0	0	0
c . Integrated Logistics Support	PO	RIA, Rock Island, IL	0	0		0		0	0	0	0	0
d . Development Support	PO	TACOM, Warren, MI	0	0		0		0	0	0	0	0
e . Development Support	PO	ARL, Adelphi, MD	0	0		0		0	0	0	0	0
f . Development Support	PO	Various OGAs	0	0		0		0	0	0	0	0
g . Development Support	Various	Various Contracts	0	0		0		0	0	0	0	0
Subtotal:			0	0		0		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604854A - ARTILLERY SYSTEMS - EMD**

**PROJECT**  
**503**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Test and Evaluation	PO	TECOM (YPG, AZ; APG, MD)	0	0		0		0	0	0	0	0
b . Ammunition and Propellant	PO	Various sources	0	0		0		0	0	0	0	0
Subtotal:			0	0		0		0		0	0	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management Support	SS/FP	Vector Research, Inc., MI	0	0		0		0	0	0	0	0
b . Project Management Support	SS/FP	System Research & Integration, Inc., VA	0	0		0		0	0	0	0	0
c . Project Management Support	SS/FP	Genisys, TX	0	0		0		0	0	0	0	0
d . Project Management Support	SS/FP	Camber, Inc., NJ	0	0		0		0	0	0	0	0



## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604854A - ARTILLERY SYSTEMS - EMD**

**PROJECT**  
**503**

IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
e . Project Management Support	SS/FP	SAIC, VA	0	0		0		0	0	0	0	0
f . Systems Engineering Support	SS/FP	Camber, Inc, NJ	0	0		0		0	0	0	0	0
g . Systems Engineering Support	SS/FP	PRC, VA	0	0		0		0	0	0	0	0
h . Systems Engineeering Support	SS/FP	LMI, VA	0	0		0		0	0	0	0	0
i . Systems Engineering Support	SS/FP	TBD	0	0		0		0	0	0	0	0
j . Software Development Support	SS/FP	Mitre Corporation, VA	0	0		0		0	0	0	0	0
k . Software Development Support	SS/FP	SAIC, VA	0	0		0		0	0	0	0	0
l . Software Development Support	SS/FP	High Performance Technology Inc, HPTI, VA	0	0		0		0	0	0	0	0
m . Software Development Support	SS/FP	Averstar Inc, OK	0	0		0		0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604854A - ARTILLERY SYSTEMS - EMD**

**PROJECT**  
**503**

IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
<b>Project Total Cost:</b>			0	0		39449		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>			<b>PE NUMBER AND TITLE</b> <b>0604854A - ARTILLERY SYSTEMS - EMD</b>					<b>PROJECT</b> <b>509</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
509 LIGHTWEIGHT 155M HOWITZER	4662	17224	18199	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Lightweight 155mm (LW155) Towed Howitzer, a joint program with the Marine Corps, will provide the replacement for the M198, 155mm Towed Howitzer. It will provide significant strategic and tactical mobility improvements. Project D509 supports Towed Artillery Digitization (TAD) Engineering and Manufacturing Development. TAD is a digital fire control system for the XM777 Towed Howitzer, with potential applications to other weapon platforms. TAD will increase the accuracy, survivability, and lethality of Army and USMC 155mm Towed Artillery. This system supports the Legacy transition paths of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 1328 Generated the TAD Acquisition Strategy/Plan and Acquisition Program Baseline Agreement. Oversaw preparation of the performance specification, Statement of Work, Request for Proposals, and conducted Source Selection. Prepared for and conducted Milestone I/II Review and awarded the TAD EMD contract.
  - 428 Program management support.
  - 2906 Awarded TAD EMD contract.
- Total 4662

**FY 2001 Planned Program**

- 4004 Program management and engineering support for various Integrated Product Teams (IPTs), System Requirements Review, System Design Review, Allocated Baseline Review, System Software Review, Preliminary Design Review, Integrated Baseline Review, and interface with contractor engineers. Other tasks include work on the Test and Evaluation Master Plan, Software Development Plan, and other program documents. A Tri-Service Assessment will also be conducted.
- 953 Program management support for the identification of system requirements, software development, business management (earned value), and other technical and administrative tasks.

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)****June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604854A - ARTILLERY SYSTEMS - EMD**

PROJECT

**509****FY 2001 Planned Program (Continued)**

- 7674 Continue conducting IPTs, and participate in the previously mentioned reviews with their government counterparts. Develop the TAD System hardware and software baselines. Begin development of the TAD System. Includes Award Fee provisions.
- 2450 Fabricate seven sets of TAD developmental test articles for component and system level technical testing. Initiate integration of TAD components onto the XM777 howitzer.
- 1645 Long lead cannon assembly preforms and cannon assembly manufacturing to be used in integration and technical testing of TAD components. Also provides funding for the manufacture of a pilot production howitzer, which will be used in technical and operational testing.
- 498 Small Business Innovation Research/Small Business Technology Transfer.

Total 17224

**FY 2002 Planned Program**

- 4461 Program management and engineering support for IPTs; system reviews including Detailed Design Review; operational test planning; and other EMD tasks. Provide program management/technical support contracts for software management/development, and business and office administration.
- 10638 Continue software development and component/system level technical testing and the integration of TAD onto the XM777 howitzer.
- 2100 Fabricate six sets of TAD test articles for operational testing in FY03.
- 1000 Conduct TAD hardware and software technical testing on the XM777 howitzer.

Total 18199

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604854A - ARTILLERY SYSTEMS - EMD**

PROJECT  
**509**

<b><u>B. Other Program Funding Summary</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>To Compl</b>	<b>Total Cost</b>
RDTE, Navy LW155 Towed How 060363M	26345	13027	18600	0	0	0	0	0	0	0
Procurement, Marine Corps LW155 Towed Howitzer with TAD Prod, Bli 218500	0	11028	0	0	0	0	0	0	0	0
Procurement, WTCV, Army, LW155 with TAD G01700	0	0	1107	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The overall TAD Acquisition Strategy/Plan parallels the USMC EMD and Production Phases for their LW155 howitzers. The principal strategy for the Army-funded TAD EMD, is to execute a CPIF contract with the prime contractor to develop the TAD System for testing and evaluation prior to Army LW155 production. The Marine Corps will retrofit their fielded LW155 howitzers with TAD. USMC howitzers still in production will be outfitted with the TAD System prior to fielding.

<b><u>D. Schedule Profile</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Towed Artillery Digitization (TAD) Milestone I/II	1Q			0	0	0	0	0
TAD Contract Award	4Q			0	0	0	0	0
TAD Developmental Testing Begins		4Q		0	0	0	0	0
TAD Developmental Testing Ends			4Q	0	0	0	0	0
TAD Multi-service Operational Test				0	0	0	0	0
TAD Milestone III				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604854A - ARTILLERY SYSTEMS - EMD**

**PROJECT**  
**509**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TAD System EMD Contract	CPIF with Award Fee	General Dynamics Armament Systems, Burlington, VT	2906	7674	1Q	10638	1Q	0	0	0	0	0
b . Government Program Management and Engineering Staff	MIPR	ARDEC, Picatinny Arsenal, NJ	2127	4004	1-4Q	4461	1-4Q	0	0	0	0	0
Subtotal:			5033	11678		15099		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	Allotment	JPMO LW155, Picatinny Arsenal, NJ	592	953	1-2Q	0		0	0	0	0	0
Subtotal:			592	953		0		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604854A - ARTILLERY SYSTEMS - EMD**

**PROJECT**  
**509**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Multi-service Operational Test	MIPR	Yuma Proving Grounds, AZ	0	0		0		0	0	0	0	0
b . TAD Test Articles	CPIF	General Dynamics Armament Systems, Burlington, VT	0	2450	1Q	2100	1Q	0	0	0	0	0
c . XM777 Test Article	Cost Type	VSEL Projects Limited, Barrow-in-Furness, UK	0	1645	2-3Q	0		0	0	0	0	0
d . TAD / XM777 Integration and Software Technical Testing	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		1000	1-2Q	0	0	0	0	0
e . TAD Software Formal Qualification Testing	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		0		0	0	0	0	0
Subtotal:			0	4095		3100		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604854A - ARTILLERY SYSTEMS - EMD**

**PROJECT**  
**509**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. SBIR/STTR			0	498	2Q	0		0	0	0	0	0
Subtotal:			0	498		0		0		0	0	0
Project Total Cost:			5625	17224		18199		0		0	0	0



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604854A - ARTILLERY SYSTEMS - EMD</b>				PROJECT <b>516</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
516 PALADIN/FAASV	0	2471	4634	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Paladin/FAASV project allows for integration of several system improvements which will provide for: automated dispensing of M231/M232 charge in vehicle; replacement of M82 cartridge primer with a laser ignition system; and upgrade of several components of the Automated Fire Control System (AFCS) XXI. These system improvements provide significantly improved mission effectiveness, increased reliability, maintainability and supportability, as well as reduce life cycle costs and obsolescence. This system supports the Legacy transition path of the Transformation Campaign Plan(TCP).

**FY 2000 Accomplishments**

Project not funded.

**FY 2001 Planned Program**

- 1296 Perform System Integration and Development of Fire Control TDP Upgrade
- 670 Fabrication of Sub System Components and Cabling
- 190 Perform On-Vehicle Component Testing
- 242 Provide Program Management
- 73 Small Business Innovative Research/Small Business Technology Transfer(SBIR/STTR)

Total 2471

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604854A - ARTILLERY SYSTEMS - EMD**

PROJECT  
**516**

**FY 2002 Planned Program**

- 3064 Perform System Integration and Development of MACS and Laser Ignition System
  - 820 Perform On-Vehicle Component Testing
  - 750 Provide Program Management
- Total 4634

<b><u>B. Other Program Funding Summary</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>
PA, WTCV, GA0400 Paladin	26824	7987	5370	0	0	0	0	0	0	0
PA, WTCV, GA8010 FAASV PIP	229	5	18501	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The Paladin/FAASV project will leverage both Government and Contractor capabilities to accomplish the development of the Paladin/FAASV system improvement projects. Government in-house engineering will perform some component level design and system integration. Final System Level Testing will be performed by Other Government Agencies (OGA). Competitive contracts will be used for many of the component level design and hardware fabrication. To the extent possible, maximum use of existing commercial off-the-shelf hardware and software will be utilized.

<b><u>D. Schedule Profile</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Award Contract for Fire Control Upgrade		3Q		0	0	0	0	0
Perform AFCS XXI Development and Hardware Fabrication		4Q		0	0	0	0	0
Complete AFCS XXI TDP Update		4Q		0	0	0	0	0
Award OGA for MACS Stowage and Handling Development and Hardware Fabrication		4Q		0	0	0	0	0
Perform MACS Stowage and Handling Testing and Evaluation			4Q	0	0	0	0	0
Complete MACS Stowage and Handling TDP				0	0	0	0	0
Award Development and Hardware OGA's and Contracts for Laser Ignition System			1Q	0	0	0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0604854A - ARTILLERY SYSTEMS - EMD</b>	PROJECT <b>516</b>
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<u>D. Schedule Profile (continued)</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Perform Live Fire Testing with Laser Ignition System				0	0	0	0	0
Complete Laser Ignition TDP				0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604854A - ARTILLERY SYSTEMS - EMD**

**PROJECT**  
**516**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Component Design	Various	Unknown	0	912	2-3Q	1564	2Q	0	0	0	0	0
b . System Integration	MIPR	TACOM-ARDEC, Picatinny, NJ	0	868	2-3Q	1200	2Q	0	0	0	0	0
c . TDP Development	MIPR	TACOM-ARDEC, Picatinny, NJ	0	204	2-3Q	300	1Q	0	0	0	0	0
Subtotal:			0	1984		3064		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Logistics	MIPR	TACOM-ACALA, Moline, IL	0	124	2Q	300	1Q	0	0	0	0	0
Subtotal:			0	124		300		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0604854A - ARTILLERY SYSTEMS - EMD</b>	<b>PROJECT</b> <b>516</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Component Level Testing	MIPR	TACOM-ARDEC, Picatinny, NJ	0	35	4Q	350	1Q	0	0	0	0	0
b . System Level Testing	MIPR	TECOM, APG, MD	0	155	4Q	470	3Q	0	0	0	0	0
Subtotal:			0	190		820		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PMO Support	NA	PM Paladin/FAASV, Picatinny, NJ	0	173	1Q	450	1Q	0	0	0	0	0
Subtotal:			0	173		450		0		0	0	0

<b>Project Total Cost:</b>			0	2471		4634		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0605013A - Information Technology Development**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	94886	98178	0	0	0	0	0	0	0
087 ARMY DISTANCE LEARNING PROGRAM	0	4854	2162	0	0	0	0	0	0	0
099 SIDPERS-3	0	9152	8618	0	0	0	0	0	0	0
137 TRANS COORDINATORS' AUTO INFO FOR MOVEMENT SYS II	0	8004	9891	0	0	0	0	0	0	0
184 INSTALLATION SUPPORT MODULES (ISM)	0	4635	4695	0	0	0	0	0	0	0
185 ARMY RECRUITING INFORMATION SUPPORT SYSTEM (ARISS)	0	8535	18936	0	0	0	0	0	0	0
193 MEDICAL COMMUNICATIONS FOR COMBAT CASUALTY CARE	0	3192	4689	0	0	0	0	0	0	0
196 HORIZONTAL TECHNOLOGY INTEGRATION (HTI)	0	1902	2071	0	0	0	0	0	0	0
252 TACMIS	0	5434	5539	0	0	0	0	0	0	0
299 JOINT COMPUTER-AIDED ACQUISITION & LOG SPT (JCALS)	0	45728	37145	0	0	0	0	0	0	0
316 STACOMP	0	3450	4432	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

**PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.**

Supports efforts to plan, design, develop, and test information technology solutions to fulfill the Army's Warfighter Support Mission and accommodate changing Army requirements while fulfilling future Army needs. Provides for development and acquisition of Combat Service Support (CSS) and business information technology solutions to help arm, sustain, fix, move, train and man the force. Completed development/acquisition efforts will also enhance sustaining base functions and power projection capabilities and facilitate global messaging and electronic data interchange (EDI). Ongoing development efforts support multiple functional areas including logistics, personnel, transportation, training, medical/health protection, and sustaining base.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0605013A - Information Technology Development**

<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	0	94170	58633	0
Appropriated Value	0	98170	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0		0	
b. SBIR / STTR	0	0	0	
c. Omnibus or Other Above Threshold Reductions	0	0	0	
d. Below Threshold Reprogramming	0	-2400	0	
e. Rescissions	0	-884	0	
Adjustments to Budget Years Since FY2001 PB	0	0	39545	
Current Budget Submit (FY 2002/2003 PB )	0	94886	98178	0

FY02 increases due to extending Army Recruiting Info Support System (ARISS) for 1 year, an increase to JCALS Acq Strategy, transfers from OPA for development and testing of Joint Technical Manuals (JTM) Software Package 3 (SWP3), and to Medical Communications Combat Casualty Care (MC4) to comply with Congressionally directed change in funding Information Technology (IT). FY03 Funds realigned to higher priority Army requirements.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>				PROJECT <b>087</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
087 ARMY DISTANCE LEARNING PROGRAM	0	4854	2162	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Army Distance Learning Program (TADLP) will provide standard automation and supporting infrastructure to improve Army's ability to train service members and supporting civilian workforce in all Army components. It will enhance institutional and individual training by introducing proven distance learning (DL) enhancements, validated by industry and academia into the Army training inventory. TADLP goals include:

- o Providing more efficient training delivery/training support. Travel efficiencies will be garnered through delivery of training to service members at or near their home station.
- o Improving service member morale by allowing members to acquire necessary military training without leaving their home station.
- o Improving efficiency and effectiveness of Army instructors by allowing each instructor to train more students in a shorter period of time.
- o Improving unit readiness due to the reduction in personnel turbulence resulting from long term absence for resident training.

This project is not a new start.

**FY 2000 Accomplishments**

Project funded in Operation & Maintenance, Army (OMA)

**FY 2001 Planned Program**

- 1648 Program Management
  - 86 Logistics Planning
  - 812 Engineering and Technical Support
  - 250 Testing
  - 1920 Engineering Integration
  - 138 SBIR/STTR
- Total 4854



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0605013A - Information Technology Development**

PROJECT

**087**

## FY 2002 Planned Program

- 742 Program Management
  - 42 Logistics Planning
  - 220 Engineering and Technical Support
  - 510 Testing
  - 648 Engineering Integration
- Total 2162

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>	PROJECT <b>087</b>
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<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA SSN BE4173	10074	21133	20030	0	0	0	0	0	0	0
OMA APEs 4326615/432612/432126	25667	19560	23919	0	0	0	0	0	0	0

**C. Acquisition Strategy:** Army will use an incremental acquisition strategy to acquire/deploy The Army Distance Learning Program (TADLP) to reduce program risk by delivering specific mission functionality in stand-alone increments that produce measurable net benefits independent of future efforts. Increments include: - Block 1 architecture was completed in FY 1998/99. It provides modern Digital Training Facilities (DTF) incorporating automation and Video-Teletraining (VTT) products to all Army components. These facilities support Army updates to existing courses that emphasize synchronous (direct and immediate) instructor/student interaction using VTT. DTFs also include student workstations equipped with personal computers. These PCs can be used for CD-ROM based training. This provides an immediate return on investment by allowing Army instructors to simultaneously provide training to both local and remote students, increasing the class size that can be effectively supported by a single instructor. - Blocks 2 and 3 design efforts began in late FY 1999. Block 2 enhances Block 1 DTFs, providing a robust communications/data transmission capability to support expanded asynchronous training by linking students, instructors, and Subject Matter Experts through the Internet and/or other communications media to conduct collaborative training. Block 3 allows automated scheduling of course assignment of students to individual courses and locations and will support on-line testing and records management. Design of additional TADLP Blocks will begin in FY03. The modernized training delivery system will link Army service schools with the Army in the field through common-user telecommunications networks which will deliver standardized individual, collective, and self-development training to soldiers, civilian employees, and units using multiple means and technologies. The Army is leveraging industry and academia-proven Distance Learning techniques to improve the quality of Army training and reduce training costs. Maximum use is being made of Commercial-off-the-Shelf Information Technologies to support training related and administrative processes.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Milestone C (TADLP Blocks 1 and 2)		1Q		0	0	0	0	0
Milestone C (TADLP Block 3)			3Q	0	0	0	0	0
*FY03 supports design of additional blocks				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0605013A - Information Technology Development**

PROJECT

**087**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering Integration	C/T&M	TBD	0	2058	3Q	648	1Q	0	0	0	0	0
Subtotal:			0	2058		648		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prog Mgmt Support	C/IDIQ	Titan Corp, Hampton, VA	0	784	2Q	310	2Q	0	0	0	0	0
b . Engineering/Tech Support	MIPR	ISEC, Fort Huachuca, AZ	0	640	1Q	220	1Q	0	0	0	0	0
c . Logistics Planning	C/IDIQ	Titan Corp, Hampton, VA	0	86	2Q	42	2Q	0	0	0	0	0
d . Engineering Tech Support	C/IDIQ	Titan Corp, Hampton, VA	0	172	2Q	0		0	0	0	0	0
Subtotal:			0	1682		572		0		0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0605013A - Information Technology Development</b>	<b>PROJECT</b> <b>087</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . a. Testing	MIPR	ATEC, Washington, DC	0	250	1Q	510	1Q	0	0	0	0	0
<b>Subtotal:</b>			0	250		510		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prog Mgmt Operations	NA	NA	0	864	1-4Q	432	1-4Q	0	0	0	0	0
<b>Subtotal:</b>			0	864		432		0		0	0	0

Remarks: Program Management Operations includes direct pay of PMO government employees, TDY, training, supplies, etc.

<b>Project Total Cost:</b>			0	4854		2162		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>				PROJECT <b>099</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
099    SIDPERS-3	0	9152	8618	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Standard Installation/Division Personnel System-3 (SIDPERS-3) is a personnel system that replaces previous versions of SIDPERS for Active Army Personnel Operations. It provides the Reserve Components a standard software system for use during mobilization. SIDPERS-3 provides commanders and managers the necessary personnel information to make informed decisions regarding military personnel resources. SIDPERS-3 is a major contributor to the Total Army Personnel Database (TAPDB) and will be the cornerstone of a more reliable and responsive automated personnel information system in support of all Army missions. This project is not a new start.

**FY 2000 Accomplishments**

Project funded in Operations & Maintenance, Army (OMA)

**FY 2001 Planned Program**

- 2952    Post Deployment Software Support (PDSS) - Engineering Change Packages (ECPs)/System Change Packages (SCPs)/Interim Change Packages (ICPs)
  - 3000    PerPay Lite development - an integrated personnel and pay process using single source data entry
  - 2928    (Personnel TEMPO) PERSTEMPO Development
  - 272     SBIR/STTR
- Total    9152

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>	PROJECT <b>099</b>
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**FY 2002 Planned Program**

- 3535 PDSS - ECPs/SCPs/ICPs
  - 1000 Integrated Total Army Personnel Database (ITAPDB) Migration
  - 3083 PerPay Development
  - 1000 Army Human Resource System (AHRS) analysis/development
- Total 8618

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA SSN W00800, STACOMP	5455	6796	4929	0	0	0	0	0	0	0
OMA APE: 432612/432615	16135	1614	1130	0	0	0	0	0	0	0

**C. Acquisition Strategy:** PM SIDPERS-3 makes extensive use of Integrated Product Teams (IPTs) to manage the SIDPERS-3 acquisition. Sub-elements of the acquisition (engineering and design, logistics planning, testing, etc.) are intensively managed by integrated teams of government and contractor personnel. Task performance is tracked against the SIDPERS-3 Work Breakdown Structure (WBS) and resources allocated to each task are adjusted based on performance against the WBS. SIDPERS-3 contractual efforts are acquired on a time and materials basis through GSA schedule and existing contractual vehicles.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Post Milestone C				0	0	0	0	0
Post Deployment Software Support (PDSS)		1-4Q	1-4Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0605013A - Information Technology Development</b>	<b>PROJECT</b> <b>099</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PDSS ECPs/SCPs/ICPs	C/FP	Electronic Data Systems, Herndon, VA	0	2952	1Q	3535	1Q	0	0	0	0	0
b . Software Development	C/FP	Electronic Data Systems, Herndon, VA	0	3000	1Q	5083	1-4Q	0	0	0	0	0
c . Software Development	MIPR	PERSCOM, Alexandria, VA	0	2928	2Q	0		0	0	0	0	0
<b>Subtotal:</b>			0	8880		8618		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering and Technical Services	MIPR	USAISEC, Ft Detrick, MD	0	0		0		0	0	0	0	0
<b>Subtotal:</b>			0	0		0		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0605013A - Information Technology Development**

**PROJECT**  
**099**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PMO Operations		Ft. Belvoir, VA	0	0		0		0	0	0	0	0
b . Other (SBIR/STTR)			0	272		0		0	0	0	0	0
Subtotal:			0	272		0		0		0	0	0

<b>Project Total Cost:</b>			0	9152		8618		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>				PROJECT <b>137</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
137    TRANS COORDINATORS' AUTO INFO FOR MOVEMENT SYS II	0	8004	9891	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Funding supports design, development, testing, and program management functions for Transportation Coordinators' - Automated Information for Movement System II (TC-AIMS II).

- o Provides standard DoD integrated information transportation system capability for deployment, sustainment, and redeployment operations during both war and peacetime operations for the active and reserve forces.
- o Consolidates the management of unit/installation-level transportation functions of Unit Movement, Load Planning and Installation Transportation Office/Traffic Management Office (ITO/TMO) operations, and facilitates the movement and support of personnel and cargo during all phases of military operations in all environments, including sustainment; reception, staging, onward movement and integration (RSO&I); and battlefield operations.
- o Supports routine and surge requirements and automates shipping/receiving, and deployment; sustainment and redeployment processes; produces movement documentation, unit move data; and furnishes timely transportation information to major commands, transportation component commands, United States Transportation Command, and the Joint deployment community.
- o Provides In-Transit Visibility data and control over cargo and passenger movement, as a DoD source movement information system.

This project is not a new start.

**FY 2000 Accomplishments**

Project funded in Operation & Maintenance, Army (OMA)

**FY 2001 Planned Program**

- 3487     Continue support of Joint Program Management Office Civilian Pay, matrix support and contract services for the software development effort.
- 1400     Provides facilities, supplies, and equipment needed to support continued development.
- 2915     Software Development

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0605013A - Information Technology Development**

PROJECT

**137**

## FY 2001 Planned Program (Continued)

- 202 SBIR/STTR

Total 8004

## FY 2002 Planned Program

- 5070 Continue support of Joint Program Management Office Civilian Pay, matrix support and contract services for the software development effort.
- 1509 Provides facilities, supplies, and equipment needed to support continued development
- 3312 Software Development

Total 9891

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0605013A - Information Technology Development**

PROJECT  
**137**

<b>B. Other Program Funding Summary</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA - SSN: BZ8900 TC AIMS II	20762	11664	25512	0	0	0	0	0	0	0
OMA - APE: 432612/432615	25643	7364	7577	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The TC-AIMS II acquisition strategy is to use an incremental, spiral development strategy in compliance with the Clinger-Cohen Act of 1996. The spiral development effort will break out system functionality into separate releases. The November 1998 Joint Configuration Management Board (CMB) approved spiral development which included the following four releases: 3.01 (Unit Movement), 3.02 (Unit Movement Enhanced), 3.03 (Installation Transportation Office (ITO)/Traffic Management Office (TMO)), and the Preplanned Product Improvement P31 which was designed to provide a Theater Operations transportation management capability. In June 2000, however, the CMB approved a new strategy that would divide the remaining TC-AIMS II functionality into even smaller incremental development packages (IDPs) that would commence after the delivery of the Unit Movement module.

<b>D. Schedule Profile</b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Milestone C Fielding Decision (Release 3.01)			2Q	0	0	0	0	0
Milestone C IDPs 1-2			3Q	0	0	0	0	0
Milestone C IDPs 3-6				0	0	0	0	0
Milestone C IDP 7			4Q	0	0	0	0	0
Milestone C IDP 8				0	0	0	0	0
Milestone C IDP 9				0	0	0	0	0
Milestone C IDPs 10-12				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0605013A - Information Technology Development**

**PROJECT**  
**137**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Software Development	C/CPIF	TBS	0	2915	4Q	3312	2Q	0	0	0	0	0
Subtotal:			0	2915		3312		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Rents/Leases	C/FFP	SMART TECH, Springfield, VA	0	1400	1Q	1509	1Q	0	0	0	0	0
b . JPMO Contractor Support	C/FFP	Various/Fort Belvoir, VA	0	2234	1-4Q	3766	1-4Q	0	0	0	0	0
c . JPMO Operations	N/A	N/A	0	1253	1-4Q	1304	1-4Q	0	0	0	0	0
Subtotal:			0	4887		6579		0		0	0	0

Remarks: JPMO Operations includes contractor direct pay of government employees, TDY, training, supplies, etc.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0605013A - Information Technology Development**

**PROJECT**  
**137**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Other (SBIR/STTR)			0	202		0		0	0	0	0	0
Subtotal:			0	202		0		0		0	0	0

<b>Project Total Cost:</b>			0	8004		9891		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>				PROJECT <b>184</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
184      INSTALLATION SUPPORT MODULES (ISM)	0	4635	4695	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Installation Support Modules (ISM) functions encompass all information management resources and activities used to plan, organize, train, equip, mobilize deploy and sustain the force. The ISM mission is to provide more efficient and effective installation operations, thereby minimizing the adverse impact of on-going reductions of resources for this critical mission area. ISM consists of ten standard, automated software applications packaged into functional modules that integrate day-to-day Army installation business practices and processes. This project is not a new start.

**FY 2000 Accomplishments**

Project funded in Operation & Maintenance, Army (OMA)

**FY 2001 Planned Program**

- 574      Independent Validation Verification (IVV) Testing
  - 3923     Post Deployment Software Support (PDSS) - Emergency Change Packages (ECPs)/System Change Packages (SCPs)
  - 138      SBIR/STTR
- Total    4635

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>	PROJECT <b>184</b>
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**FY 2002 Planned Program**

- 574 IVV Testing
- 4121 PDSS - ECPs/SCPs

Total 4695

<b><u>B. Other Program Funding Summary</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>
OMA APE: 432612	13725	9487	9389	0	0	0	0	0	0	0

**C. Acquisition Strategy:** This system is in Post Deployment Software Support (PDSS). The present concept calls for the use of full and open competition to satisfy requirements as defined by the Functional Proponent (Director of Information Systems for Command, Control, Communications, and Computers (DISC4)).

<b><u>D. Schedule Profile</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Post Deployment Software Support	1-4Q	1-4Q	1-4Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0605013A - Information Technology Development</b>	<b>PROJECT</b> <b>184</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PDSS ECPs/SCPs/ICPs	MIPR	ISSC, Fort Belvoir, VA	0	3923	1Q	4121	1Q	0	0	0	0	0
<b>Subtotal:</b>			0	3923		4121		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal:</b>			0	0		0		0		0	0	0

Remarks: Not Applicable

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . IVV Testing	MIPR	ISEC, Fort Belvoir, VA	0	574	2Q	574	2Q	0	0	0	0	0
<b>Subtotal:</b>			0	574		574		0		0	0	0



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0605013A - Information Technology Development**

**PROJECT**  
**184**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Other (SBIR/STTR)			0	138		0		0	0	0	0	0
Subtotal:			0	138		0		0		0	0	0
Project Total Cost:			0	4635		4695		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>				PROJECT <b>185</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
185 ARMY RECRUITING INFORMATION SUPPORT SYSTEM (ARISS)	0	8535	18936	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Army Recruiting Information Support System (ARISS) will provide a robust integrated automation capability to enhance Army recruiting business processes. ARISS will help Army attract highly qualified, capable recruits while reducing individual recruiter workload. Army is using an incremental approach to acquire/deploy the ARISS capability. ARISS provides individual recruiters with powerful multi-media laptop computers to aid in performing assigned missions. Recruiters also receive Recruiter Workstation (RWS) software consisting of Packet Projection and Leads increments. Recruiting management will receive automated tools to improve management of the recruiting mission. Deployment of the RWS Packet Projection Increment began in January 1999. The Leads increment and other planned enhancements will aid Army to meet new accession goals in an era of steadily dwindling resources and a shrinking pool of applicants for military service. This project is not a new start.

**FY 2000 Accomplishments**

Project funded in O&M Army

**FY 2001 Planned Program**

- 1384 Program Management
  - 767 Engineering and Technical Support
  - 340 Testing
  - 4028 Headquarters Support System (HSS)/Guidance Counselor Redesign Development
  - 1770 System integration
  - 246 SBIR/STTR
- Total 8535

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0605013A - Information Technology Development**

PROJECT

**185**

## FY 2002 Planned Program

- 5554 Personnel Module, recruiting Improprity Module, Data Warehouse Module Enhancements
- 2924 Guidance Counselor Re-Design to support Points of Sale Enhancements
- 7977 RWS Web Based Enhancements to Support Point of Sale
- 1152 Integration of Enhanced Software
- 1329 Software Engineering and Testing

Total 18936

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>	PROJECT <b>185</b>
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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA SSN: BE4164, Personnel Automation System	8938	6346	7949	0	0	0	0	0	0	0
OMA APE: 331715	15969	4823	12871	0	0	0	0	0	0	0

**C. Acquisition Strategy:** ARISS Alpha increment - Provides recruiter workstation (RWS) infrastructure consisting of a mobile multimedia laptop computer with sales presentation and office automation capabilities. Deployment to all recruiters was completed in FY99. Recruiter Workstation (RWS) increment - Supports recruiter level missions. The first RWS module, Packet Projection (P/P) has been deployed to all recruiters. The second RWS module, Leads/Reports, is currently being developed and will be tested and deployed in FY 00/01. USAREC Headquarters Support System (HSS) increment - HSS consists of three modules that provide an operational support system to effectively manage personnel and funding. The HSS will interface with other Army/DoD recruiting and personnel information systems. HSS modules will be integrated into ARISS as they are completed and will be tested and deployed in FY00/01.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Milestone C (RWS Leads Increment)	4Q			0	0	0	0	0
System Enhancements				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0605013A - Information Technology Development</b>	<b>PROJECT</b> <b>185</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . EDS - HSS Enhancements	SS/Time & Material	Fort Knox, KY	0	4028	2Q	17668	2Q	0	0	0	0	0
b . EDS - System Integration	SS/Time & Material	Fort Knox, KY	0	1770	2Q	1152		0	0	0	0	0
c . SBIR/STTR			0	246	2Q	0		0	0	0	0	0
Subtotal:			0	6044		18820		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Operations	MIPR	TRADOC/USAREC	0	804	1Q-4Q	0		0	0	0	0	0
b . PM Support	C/FFP	Various	0	380	1Q	0		0	0	0	0	0
c . Engineering/Tech Spt	MIPR	ISEC	0	767	1Q	116		0	0	0	0	0
Subtotal:			0	1951		116		0		0	0	0

Remarks: PM Operations includes direct pay of PMO government employees, TDY, training, supplies, etc.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0605013A - Information Technology Development</b>	<b>PROJECT</b> <b>185</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Testing	MIPR	ATEC	0	340	2Q	0		0	0	0	0	0
<b>Subtotal:</b>			0	340		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Operations	NA	NA	0	200	1Q-4Q	0		0	0	0	0	0
<b>Subtotal:</b>			0	200		0		0		0	0	0

Remarks: PM Operations includes direct pay of PMO government employees, TDY, training, supplies, etc.

<b>Project Total Cost:</b>			0	8535		18936		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>			PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>					PROJECT <b>193</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
193 MEDICAL COMMUNICATIONS FOR COMBAT CASUALTY CARE	0	3192	4689	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Medical Communication for Combat Casualty Care (MC4) provides multipliers to the medical force structure through the acquisition of digital communications and information technology solutions for deployable medical forces. MC4 will also integrate Medical Information Systems into the Army Command and Control (C2) and Combat Service Support (CSS) automated structures as they evolve to support the Army Transformation. Initial MC4 efforts are focused on engineering, integrating, testing, and fielding automation infrastructure for Army users of the Joint Theater Medical Information Program (TMIP) integrated software application suite. FY02-FY03 funding supports engineering, integration and testing of information management/information technology to enhance combat casualty care within the First Digitized Division/Corps and 2 Army Transformation Brigade Combat Teams (BCT) as well as overall MC4 project management.

**FY 2000 Accomplishments**

Project funded in O&M Army

**FY 2001 Planned Program**

- 926 Program Management
- 386 Logistics Support Planning
- 425 Engineering and Technical Support
- 949 MC4 Testing
- 417 MC4/TMIP Integration and Testing
- 89 Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) Program

Total 3192

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0605013A - Information Technology Development**

PROJECT

**193**

## FY 2002 Planned Program

- 1107 Program Management
  - 516 Logistics Support Planning
  - 553 Engineering and Technical Support
  - 1110 MC4 Testing
  - 1403 MC4/TMIP Integration and Testing
- Total 4689



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0605013A - Information Technology Development**

PROJECT  
**193**

<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA SSN: MA8046, MC4	15732	3611	8703	0	0	0	0	0	0	0
OMA APE 432612	5248	482	868	0	0	0	0	0	0	0

**C. Acquisition Strategy:** MC4 supports a number of Army Medical Information Technology/Communications initiatives. The near and mid-term focus of the MC4 program is to engineer, design, test, acquire and field the Army specific automation/communications infrastructure capability to support DoD standard Theater Medical Information Program (TMIP) integrated software application suite and other Army requirements, such as system integration.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Block I IOTE			3Q	0	0	0	0	0
Block I Milestone B		3Q		0	0	0	0	0
Limited User Test (LUT)		2Q		0	0	0	0	0
Block I Milestone C			4Q	0	0	0	0	0
Block II Milestone B				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0605013A - Information Technology Development**

**PROJECT**  
**193**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Support	C/CPFF	Cambridge Consulting Corp, McLean, VA	0	507	2Q	550	2Q	0	0	0	0	0
b . Logistics Planning (Govt)	NA		0	80	1-4Q	110	1-4Q	0	0	0	0	0
c . Logistics Planning Spt	C/CPFF	CACI Inc-Federal, Arlington, VA	0	306	2Q	406	2Q	0	0	0	0	0
d . Engineering & Technical Spt (Govt)	NA	NA	0	110	1-4Q	133	1-4Q	0	0	0	0	0
e . Engineering & Tech Spt	C/CPFF	Validity/Titan, Largo, MD	0	315	2Q	420	2Q	0	0	0	0	0
Subtotal:			0	1318		1619		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0605013A - Information Technology Development</b>	<b>PROJECT</b> <b>193</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MC4 Testing	C/CPFF	Validity/Titan, Largo, MD	0	458	2Q	516	2Q	0	0	0	0	0
b . PM (Govt) Testing Spt	NA	NA	0	491	1-4Q	594	1-4Q	0	0	0	0	0
c . MC4/TMIP Integration and Testing	C/CPFF	JHU Applied Physics Lab, Laurel, MD	0	417	3Q	403	3Q	0	0	0	0	0
<b>Subtotal:</b>			0	1366		1513		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prog Mgmt Operations	NA	NA	0	508	1-4Q	557	1-4Q	0	0	0	0	0
<b>Subtotal:</b>			0	508		557		0		0	0	0

Remarks: Program Management Operations includes direct pay of PMO government employees, TDY, training, supplies, etc.

<b>Project Total Cost:</b>			0	3192		3689		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>				PROJECT <b>196</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
196 HORIZONTAL TECHNOLOGY INTEGRATION (HTI)	0	1902	2071	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** Horizontal Technology Integration (HTI) established interoperability, standardization and integration across PEO STAMIS systems. It assures sound engineering practices by producing synergy across program lines through reuse of software and hardware and interoperability between tactical and Combat Service Support (CSS) systems. HTI sets the common framework for PEO level guidance and support in the Army's Installation Information Infrastructure and Architecture for PEO STAMIS programs. This project is not a new start.

**FY 2000 Accomplishments**

Project funded in Operation & Maintenance, Army (OMA)

**FY 2001 Planned Program**

- 1418 Continue engineering support and information assurance to support PEO STAMIS programs.
  - 428 PMO Operations
  - 56 SBIR/STTR
- Total 1902

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>	PROJECT <b>196</b>
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**FY 2002 Planned Program**

- 1631 Continue engineering support and information assurance to support PEO STAMIS programs.
  - 440 PMO Operations
- Total 2071

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

**C. Acquisition Strategy:** This funding line supports interoperability, standardization, and integration across PEO STAMIS systems by capitalizing on a common approach to software development and through introduction of new technologies and methodologies.

<b><u>D. Schedule Profile</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Engineering Support		1-4Q	1-4Q	0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0605013A - Information Technology Development**

**PROJECT**  
**196**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engr/Security	Various	Various	0	435	2Q	540	2Q	0	0	0	0	0
b . LAN Support	C/FP	FC Business, Falls Church, VA	0	983	1Q	1091	1Q	0	0	0	0	0
c . SBIR/STTR			0	56		0		0	0	0	0	0
Subtotal:			0	1474		1631		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0605013A - Information Technology Development**

**PROJECT**  
**196**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PMO Operations	NA	NA	0	428	1-4Q	440	1-4Q	0	0	0	0	0
b . Other (SBIR/STTR)			0	56		0		0	0	0	0	0
Subtotal:			0	484		440		0		0	0	0
Project Total Cost:			0	1958		2071		0		0	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>				<b>PE NUMBER AND TITLE</b> <b>0605013A - Information Technology Development</b>				<b>PROJECT</b> <b>252</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
252 TACMIS	0	5434	5539	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The line funds the Tactical Management Information Systems Project Management Office that provides acquisition support to the Combat Service Support programs to include hardware acquisition, fielding, logistics, and contract support. Funding supports civilian pay for 32 civilians, contract and matrix support for logistics, contract administration, and ordering/tracking. PM operations include development training, transportation, communications, printing, office equipment, supplies and training. This project is not a new start.

**FY 2000 Accomplishments**

Project funded in O&M Army

**FY 2001 Planned Program**

- 3705 Continue PM operations.
  - 1674 Continue contract and matrix support.
  - 55 SIBR/STTR
- Total 5434



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>	PROJECT <b>252</b>
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**FY 2002 Planned Program**

- 3824 Continue PM operations.
  - 1715 Continue contract and matrix support.
- Total 5539

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

Not applicable for this item.

**C. Acquisition Strategy:** This budget line funds TACMIS PM operations. This includes acquisition support to all PEO STAMIS Combat Service Support PMs for hardware acquisition, fielding, logistics, and contractual support.

<b><u>D. Schedule Profile</u></b>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Contract/Matrix Support		1-4Q	1-4Q	0	0	0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0605013A - Information Technology Development**

**PROJECT**  
**252**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Technical Services	C/FP	Anteon, Fairfax, VA	0	1339	2Q	1381	2Q	0	0	0	0	0
b . Engineering/Logistics Matrix Support	MIPR	Various	0	335	1Q	334	1Q	0	0	0	0	0
Subtotal:			0	1674		1715		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0605013A - Information Technology Development**

**PROJECT**  
**252**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Operations	NA	NA	0	3705	1-4Q	3824	1-4Q	0	0	0	0	0
b . Other (SIBR/STTR)			0	55		0		0	0	0	0	0
Subtotal:			0	3760		3824		0		0	0	0

<b>Project Total Cost:</b>			0	5434		5539		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>					PROJECT <b>299</b>	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
299 JOINT COMPUTER-AIDED ACQUISITION & LOG SPT (JCALS)	0	45728	37145	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The Joint Computer-Aided Acquisition and Logistics Support (JCALS) system provides an infrastructure capable of integrating digitized technical data that supports the weapons systems acquisition and logistics life cycle. The system is data driven and provides an automated information systems architecture independent of application. JCALS will initially meet the Services' goal of automating technical manual processes and functions. The JCALS architecture provides a distributed, open systems environment that makes extensive use of both industry and government standards. The architecture is designed for flexibility and growth, and is capable of accommodating additional systems requirements, technological improvements, and new functionality. The initial application being fielded is Joint Technical Manuals. This project is not a new start.

**FY 2000 Accomplishments**

Project funded in O&M Army

**FY 2001 Planned Program**

- 4028 Government Program Management
- 5417 Prime Contractor Program Management
- 17098 Engineering and Technical Services
- 9791 Testing and System/Security Engineering
- 8126 Developed Software Enhancements
- 1268 Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) Program

Total 45728

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0605013A - Information Technology Development**

PROJECT

**299**

## FY 2002 Planned Program

- 4071 Government Program Management
- 5580 Prime Contractor Program Management
- 15131 Engineering and Technical Services
- 9951 Testing and System/Security Engineering
- 2412 Developed Software Enhancements

Total 37145

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>	PROJECT <b>299</b>
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<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA SSN - WA1000	32311	57818	22943	0	0	0	0	0	0	0
OMA APE - 432612/432672	84867	16741	29309	0	0	0	0	0	0	0

**C. Acquisition Strategy:** JCALS system will incrementally develop, test, and field three software packages (SWP) and implement user desired changes or enhancements through a system improvement process. SWP1/2 incorporated the majority of the infrastructure capabilities and some interfaces plus selected Joint Technical Manual (JTM) capabilities. SWP3 will incorporate additional infrastructure capabilities and interfaces plus provide expanded capabilities to manage, acquire, improve, publish, stock and distribute JTMs. SWP3 will be implemented in two increments, SWP3a and SWP3b. Following each increment, tests will be conducted prior to fielding. Full Milestone C will be achieved following completion of SWP3b. By using this approach, critical functional requirements will be satisfied incrementally prior to a final Milestone C decision and will expedite shutdown of legacy systems and cut-over of supported business processes to JCALS.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
IPR/Fielding Decision - SWP2 to Air Force	1Q			0	0	0	0	0
JCALs Milestone C - SWP3 (Increments 1/2)		4Q		0	0	0	0	0
SWP3 (Increments 1/2) Fielding			1-3Q	0	0	0	0	0
JCALs Milestone C (Full JTM Capability)			3Q	0	0	0	0	0
System Fielding			4Q	0	0	0	0	0
Maintenance/Enhancements			4Q	0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>						PROJECT <b>299</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Developed SW Maintenance/Enhancements	C/CPAF	CSC, Marlton, NJ	0	8126	2Q	2412	1Q	0	0	0	0	0
b . SBIR/STTR			0	1268	2Q	0		0	0	0	0	0
Subtotal:			0	9394		2412		0		0	0	0
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prime Contractor Program Management	C/CPAF	CSC, Marlton, NJ	0	5417	1Q	5580	1Q	0	0	0	0	0
b . Engineering & Technical Services	C/Time & Materials	Titan Corp, Shrewsbury, NJ	0	4188	1Q	3927	1Q	0	0	0	0	0
c . Engineering & Technical Services	C/CPAF	CSC, Marlton, NJ	0	12910	1Q	11204	1Q	0	0	0	0	0
Subtotal:			0	22515		20711		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0605013A - Information Technology Development**

**PROJECT**  
**299**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Testing and Implementation	C/Time & Materials	Correa Enterprises, Inc	0	4200	1Q	4200	1Q	0	0	0	0	0
b . Testing and Implementation	C/Time & Materials	Merdan Group, Inc, San Diego, CA	0	500	1Q	494	1Q	0	0	0	0	0
c . Testing and Implementation	C/Time & Materials	TELOS Corp, Ashburn, VA	0	912	2Q	940	2Q	0	0	0	0	0
d . Testing and Implementation	C/Time & Materials	Averstar, Burlington, MA	0	483	1Q	497	1Q	0	0	0	0	0
e . Govt (PM) Testing Efforts	NA		0	3696	1-4Q	3820	1-4Q	0	0	0	0	0
Subtotal:			0	9791		9951		0		0	0	0



# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

<b>BUDGET ACTIVITY</b> <b>5 - ENG MANUFACTURING DEV</b>	<b>PE NUMBER AND TITLE</b> <b>0605013A - Information Technology Development</b>	<b>PROJECT</b> <b>299</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prog Mgmt Operations	NA	NA	0	4028	1-4Q	4071	1-4Q	0	0	0	0	0
Subtotal:			0	4028		4071		0		0	0	0

Remarks: Program Management Operations includes direct pay of PMO government employees, TDY, training, supplies, etc.

Project Total Cost:			0	45728		37145		0		0	0	0
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>				PROJECT <b>316</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
316 STACOMP	0	3450	4432	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The STAMIS Tactical Computers (STACOMP) Program provides acquisition support for STAMIS tactical computers through in-house, matrix support, and contractual efforts to include: - Matrix support for logistics maintenance and warranty efforts; contract negotiations and legal review; software and hardware evaluation testing; STAMIS Computer Contract II (SCC II) contractor customer support for 24 hour hotline; technical upgrades; order processing/tracking reports; and World Wide Web (WWW) site. Contracted technical services for configuration management; tracking and accountability up to the time of equipment delivery. This project is not a new start.

**FY 2000 Accomplishments**

Project funded in O&M Army

**FY 2001 Planned Program**

- 343 Program Management Operations
  - 714 Continue providing sustained support in the areas of Integrated Logistics Support maintenance, configuration management, and test and evaluation.
  - 2290 Continue procurement strategy of acquiring commercial-off-the-shelf hardware and software to meet the requirements for standard Combat Service Support (CSS) automation Information systems. The SCC II and other existing Indefinite devlivery/Indefinite Quantity (IDIQ) microcomputer contracts are utilized for this purpose.
  - 103 SIBR/STTR
- Total 3450

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

June 2001

BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>	PE NUMBER AND TITLE <b>0605013A - Information Technology Development</b>	PROJECT <b>316</b>
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**FY 2002 Planned Program**

- 412 Program Management Operations
  - 654 Continue providing sustained support in the areas of Integrated Logistics Support maintenance, configuration management, and test and evaluation.
  - 3366 Continue procurement strategy of acquiring commercial-off-the-shelf hardware and software to meet the requirements for standard CSS automation Information systems. The SCC II and other existing IDIQ microcomputer contracts are utilized for this purpose.
- Total 4432

<b><u>B. Other Program Funding Summary</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA - SSN: W00800, STACOMP	187	3089	3531	0	0	0	0	0	0	0

**C. Acquisition Strategy:** STACOMP supports acquisition and deployment of PEO STAMIS logistics and personnel systems.

<b><u>D. Schedule Profile</u></b>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Acquisition Support		1-4Q	1-4Q	0	0	0	0	0
Test & Evaluation		1-4Q	1-4Q	0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0605013A - Information Technology Development**

**PROJECT**  
**316**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Technical services	C/FP	Anteon, Fairfax, VA	0	1829	2Q	2491	2Q	0	0	0	0	0
b . Logistics/Contract Support	MIPR	CECOM, Fort Monmouth, NJ	0	465	1-4Q	397	1-4Q	0	0	0	0	0
c . SCC II Support	C/FP	GTSI, Chantilly, VA	0	461	1Q	875	1Q	0	0	0	0	0
d . Executive System SW Development	MIPR	ESSD, Fort Belvoir, VA	0	249	1-4Q	257	1-4Q	0	0	0	0	0
Subtotal:			0	3004		4020		0		0	0	0

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0605013A - Information Technology Development**

**PROJECT**  
**316**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Operations	NA	NA	0	343	1-4Q	412	1-4Q	0	0	0	0	0
b . Other (SIBR/STTR)			0	103		0		0	0	0	0	0
Subtotal:			0	446		412		0		0	0	0

<b>Project Total Cost:</b>			0	3450		4432		0		0	0	0
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## **End of P&R Forms Report**

Who: System Admin When: 09-Jul-01 04:28 PM