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Supporting Data FY 2003 President's Budget
Submitted to OSD – February 2002

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

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**DESCRIPTIVE SUMMARIES FOR PROGRAM ELEMENTS
OF THE
RESEARCH, DEVELOPMENT, TEST AND
EVALUATION, ARMY
FY 2003
PRESIDENT'S BUDGET SUBMISSION
FEBRUARY 2002**

**VOLUME II
Budget Activities 4 and 5**

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

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**FY 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 2001, 2002 and 2003 time period.

2. Relationship of the FY 2003 Budget Submission to the FY 2002/2003 Budget Submitted to Congress. This paragraph provides a list of program elements restructured, transitioned, or established to provide specific program identification.

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

<u>OLD</u> <u>PE/PROJECT</u>	<u>NEW PROJECT TITLE</u>	<u>NEW</u> <u>PE/PROJECT</u>
0603006A/247	TAC C4 Technology Int	0603008A/TR1
0603006A/257	Digital Battlefld Comm	0603008A/TR2
0603308A/989	Mobile Tactical High Energy Laser (MTHHEL)	0603305A/TR3
0603308A/990	Missile Defense Integration	0603305A/TR4
0603308A/997	Missile Defense Battlelab	0603305A/TR5
0603308A/99A	Army Air and Missile Defense	0603305A/TR6
0605604A/670	Army Survivability Analysis & Evaluation Support	0605604A/675
0605604A/671	Army Survivability Analysis & Evaluation Support	0605604A/675
0605604A/672	Army Survivability Analysis & Evaluation Support	0605604A/675
0605604A/677	Army Survivability Analysis & Evaluation Support	0605604A/675
0605604A/678	Army Survivability Analysis & Evaluation Support	0605604A/675
0605712A/62B	Operational Testing Instrumentation Development	0605602A/62B
0605712A/62C	Modeling and Simulation Instrumentation	0605602A/62C

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0605712A/987

Modeling and Simulation Instrumentation

0605602A/62C

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FY 2002/2003 Developmental Transitions.

<u>FROM</u> <u>PE/PROJECT</u>	<u>PROJECT TITLE</u>	<u>TO</u> <u>PE/PROJECT</u>
0603782A/355	WIN-TACTICAL –DEM/VAL	0604782A/360
0604270A/L21	NATO AGS – TIARA	0718040A/C35
0603005A/538	Future Combat System (FCS)	0604645A/470
0602601A/HH7	Future Combat Systems – Applied Research	0603005A/53G
0603854A/505	Crusader	0604854A/503

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

<u>TITLE</u>	<u>PE/PROJECT</u>
DSCS - TELEPORT	0303610A/25A
Advanced Payload Develop & Spt (JMIP)	0305204A/11A
DTSP DEVELOPMENT (JMIP)	0305204A/11B
PERPETUAL ASSAIL & SECURE INFO SYS, RSCH, TNG & ED	0601102A/HA4
GLOBAL INFORMATION PORTAL	0601104A/HA1
THERMAL FLUID DESIGN TOOL	0601104A/HA2
VIRTUAL PARTS ENGINEERING RESEARCH CENTER	0601104A/HA3
CENTER FOR OPTICS MANUFACTURING	0601104A/HA5
POWER & ENERGY COLLABORATIVE TECH ALLIANCE (CTA)	0601104A/J09
ADVANCED SENSORS AND OBSCURANTS	0602120A/SA1
MICROELECTRO MECHANICAL SYSTEMS	0602307A/NA3
RAPID TARGET ACQUISITION & TRACKING SYSTEM	0602307A/NA5
JOINT MODELING & SIMULATION SYSTEM (JMASS)	0602308A/D03
THREE DIMENSIONAL ULTRASOUND IMAGING	0602308A/MC8
BIOTECHNOLOGY	0602622A/BA1
THERMOBARIC WARHEAD DEVELOPMENT	0602622A/CA1
GREEN ARMAMENTS TECHNOLOGY	0602624A/WA2
CORROSION MEASUREMENT AND CONTROL	0602624A/WA3
ARMAMENT SYSTEMS NETWORK IA CENTER	0602624A/WA4

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

<u>TITLE</u>	<u>PE/PROJECT</u>
ELECTRONIC DISPLAY RESEARCH	0602705A/EM4
WASTE MINIMIZATION AND POLLUTION RESEARCH	0602720A/EM1
MOLECULAR & COMPUTATIONAL RISK ASSESSMENT	0602720A/EN8
TRANSPORTABLE DETONATION CHAMBER VALIDATION	0602720A/EN9
FT GEORGE MEADE FUEL CELL DEMONSTRATION	0602784A/EM2
CENTER FOR RELIABLE WIRELESS COMM TECH	0602786A/WA1
ARTHROPOD-BORNE INFECTIOUS DISEASE CONTROL	0602787A/MA1
DIABETES PROJECT	0602787A/MA2
MEDICAL AREA NETWORK FOR VIRTUAL TECHNOLOGY	0602787A/MA3
SPEECH CAPABLE PERSONAL DIGITAL ASSISTANT	0602787A/MA4
CENTER FOR INTERNATIONAL REHABILITATION	0602787A/MA5
DERMAL PHASE METER	0602787A/MA6
VCT LUNG SCAN	0602787A/MA7
MONOCLONAL ANTIBODY BASED TECHNOLOGY	0602787A/MA8
OPERATING ROOM OF THE FUTURE	0602787A/MA9
MANUFACTURING RDE CENTER FOR NANOTECHNOLOGIES	0602805A/NA2
FORCE PROJECTION LOGISTICS	0603001A/545
ADV DIAGNOSTICS & THERAPEUTIC DIG TECH	0603002A/MB1
BRAIN, BIOLOGY, AND MACHINE	0603002A/MB2
CENTER FOR INTEGRATION OF MEDICINE & INNOV TECH	0603002A/MB3
CENTER FOR UNTETHERED HEALTHCARE	0603002A/MB4
CONTINUOUS EXPERT CARE NETWORK TELEMEDICINE	0603002A/MB5
FRAGILE X SYNDROME	0603002A/MB6
HEMOGLOBIN BASED OXYGEN CARRIER	0603002A/MB7
HEPATITIS C	0603002A/MB8
JOINT US NORWEGIAN TELEMEDICINE	0603002A/MB9
MEMORIAL HERMANN TELEMED NETWORK	0603002A/MC1
MONOCLONAL ANTIBODIES, MASS BIO LAB	0603002A/MC2
SACCADIC FATIGUE MEASUREMENT	0603002A/MC3
SECURE TELEMEDICINE TECH PROGRAM	0603002A/MC4
SPINE RESEARCH AT WRAMC	0603002A/MC5
TRAUMA RESEARCH CENTER	0603002A/MC6

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

<u>TITLE</u>	<u>PE/PROJECT</u>
MEDICAL SIMULATION TRAINING INITIATIVE	0603002A/MC9
EMERGENCY TELEMED RESPONSE & ADV TECH	0603002A/MD1
VETERANS COLLABORATIVE CARE MODEL PROGRAM	0603002A/MD2
FUTURE COMBAT SYSTEMS (FCS)	0603005A/53G
TACOM HYBRID VEHICLE DEMO: LITHIUM ION TECH	0603005A/CA2
CORROSION PREVENTION AND CONTROL PROGRAM	0603005A/CA3
VEHICLE BODY ARMOR SUPPORT SYSTEM	0603005A/CA4
FUEL CATALYST RESEARCH EVALUATION	0603005A/CA5
MISSILE RECYCLING PROGRAM	0603313A/NA4
105MM CONVENTIONAL TANK AMMUNITION	0603639A/64B
FUTURE SCOUT VEHICLE - ADVANCED DEVELOPMENT	0603643A/820
THROUGH WALL SURVEILLANCE RADAR TECHNOLOGY	0603710A/NA1
ENVIRONMENTAL RESTORATION TECHNOLOGY	0603728A/03E
PROTON EXCHANGE MEMBRANE FUEL CELL DEMO	0603728A/EM3
ENVIRONMENTAL RESTORATION TECH VALIDATION	0603779A/04E
CASTING EMISSION REDUCTION PROGRAM (CERP)	0603779A/EN1
ADVANCED PRECISION KILL WEAPON SYSTEM	0604802A/705
FORT ORD CLEANUP DEMONSTRATION PROJECT	0603779A/EN2
MANAGING ARMY TECHNOLOGY ENVIRON ENHANCEMENTS	0603779A/EN3
PORTA BELLA ENVIRONMENTAL CLEANUP	0603779A/EN5
UNEXPLODED ORDNANCE IN SUPPORT OF MILITARY READ	0603779A/EN6
VANADIUM TECHNOLOGY PROGRAM	0603779A/EN7
MORTAR SYSTEMS	0603802A/AS4
FUTURE MEDICAL SHELTER	0603807A/MD4
MEDICAL SIMULATION TRAINING INITIATIVE	0603002A/MC9
EMERGENCY TELEMED RESPONSE & ADV TECH	0603002A/MD1
VETERANS COLLABORATIVE CARE MODEL PROGRAM	0603002A/MD2
FUTURE COMBAT SYSTEMS (FCS)	0603005A/53G
TACOM HYBRID VEHICLE DEMO: LITHIUM ION TECH	0603005A/CA2
CORROSION PREVENTION AND CONTROL PROGRAM	0603005A/CA3
VEHICLE BODY ARMOR SUPPORT SYSTEM	0603005A/CA4
FUEL CATALYST RESEARCH EVALUATION	0603005A/CA5

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

<u>TITLE</u>	<u>PE/PROJECT</u>
IMED TOOLS RURAL MOBILE COMMS	0603807A/MD5
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
ARMORED SECURITY VEHICLE	0604642A/E58
STRIKER II	0604645A/426
ENGINEER VEHICLE UPGRADES	0604649A/G29
LIGHTWEIGHT LASER DESIGNATOR RANGEFINDER UPGRADES	0604710A/L76
ALLIANCE EXECUTIVE DEVELOPMENT & INTEGRATION	0604738A/J11
INTELLIGENCE SIMULATION SYSTEMS	0604742A/361
WARFIGHTER SIMULATION	0604742A/362
ARMY DISTRIB COMN GRND STAT (DCGS-A)-TIARA	0604766A/958
WIN-TACTICAL - EMD	0604782A/360
JOINT NETWORK MANAGEMENT SYSTEM	0604783A/363
LOW COST COMPETENT MUNITIONS (LCCM)	0604802A/AS5
CARTLEDGE INFUSER	0604807A/MD3
TRAJECTORY CORRECTABLE MUNITION	0604814A/700
ARMY AIRBORNE COMMAND & CONTROL SYS (A2C2S)	0604818A/C3A
MEDIUM CALIBER AMMUNITION	0603639A/694
PATRIOT ADVANCED CAPABILITY (PAC) - 3	0604865A/01C
SOLDIER-CENTERED ANALYSES FOR THE OBJECTIVE FORCE	0605326A/33B
OBJECTIVE FORCE TASK FORCE	0605801A/F06
TRANSPORTATION BENEFIT PROGRAM	0605801A/M77
ASARC AND CRB ESOH SUPPORT	0605857A/0E6
SPACE & MISSILE DEFENSE COMMAND - REIMBURSABLE	0605898A/R02
VENTURE CAPITAL	0708045A/EA1
HYPERVELOCITY MISSILE TD	0603313A/655

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D. FY 2003 programs for which funding existed in the FY 2002 Amended President's Budget Submit (July 2001), but which are no longer funded beginning in FY 2003.

<u>PE/PROJECT</u>	<u>TITLE</u>	<u>BRIEF EXPLANATION</u>
0603653A/B99	Tank and Medium Calibre Armaments	Program Terminated
0604645A/G25	M1 Breacher Dev	Program Terminated
0203735A/718	Ground Combat Vehicle HTI	Program Terminated
0203761A/394	Force XXI Initiatives	Program Terminated
0203801A/303	Stinger RMP PIP	Program Completed
0203802A/336	TOW PIP	Program Terminated
0602601A/T21	21 st Century Truck (T21)	Perennial Cong Add Dependent Pgm
0602787A/977	Emerging Infectious Diseases	Perennial Cong Add Dependent Pgm
0602805A/105	Dual Use Applications Programs	Program Completed
0603001A/393	MIL OPS In Urban Terrain (MOUT)	Program Completed
0603002A/975	Protection Against Emerging Infectious Diseases	Program Completed
0603804A/G10	Adv TAC PWR Sources AD	Program Completed
0603804A/K39	Environmental Equipment - AD	Program Completed
0603804A/429	Rigidwall Shelter Ed	Program Terminated
0603808A/434	Anti-Personnel Landmine Alternatives (NSD)	Program Terminated
0603808A/443	APL-A (MIXED SYSTEMS)	Program Terminated
0604820A/E10	Sentinel	Program Completed
0605013A/087	Army Distance Learning Program	Pgm Trans to Prod (Blk 3)/Unfunded Threshold Requirements.
0605803A/735	Net Assessment Directorate	Programs Transitions to OSD

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

* 0203735A/DC64	0602786A/AC60	** 0603122A/DB95/D
0203808A/DE11	0603005A/DC66	0603322A/DB92
0301359A	** 0603009A/DB18/DB20/DB31/DB34	0603710A/DC65/ DC67
0602122A/AB72/622	** 0603017A/AB69	0603851A/DC75
* 0602601A/AC84	0603020A/AB77/DB84/DB85	0604328A/DC71

* Funding end in FY02, ** 0603009A/DB20 Funding ends in FY01, DB34 Open for FY02 PBD directed reprogramming,
 ** 0603122A/DB95 Funding ends in FY01

4. Footnotes. This paragraph provides a list of program elements whose Line Item numbers and/or amounts differ from those provided in the previous submitted version of the FY 2003 Budget Submission. These differences are due to system processing synchronization issues. The revised line item numbers and amounts correctly report the Army's budget request and justification material provided herein.

A. Line Item Differences.

<u>Revised</u> <u>PE</u>	<u>TITLE</u>	<u>Previously Submitted</u>	
		<u>Line Item#</u>	<u>Line Item</u>
	#		
0605718A	Simulation & Modeling for Acq, Rqts, & TNC (SMART)	-	145
0605801A	Programwide Activities	145	146
0605803A	Technical Information Activities	146	147
0605805A	Munitions Standardization, Effectiveness and Safety	147	148
0605856A	Environmental Compliance	148	149
0605857A	Army Acquisition Pollution Prevention Program	149	150

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0605898A	Management Headquarters (Research and Development)	150	151
0909999A	Financing for Cancelled Account Adjustments	151	152
0603778A	MLRS Product Improvement Program	152	178
0708045A	End Item Industrial Preparedness Activities	178	179
1001018A	NATO Joint Stars	179	180

B. Budget Amount Differences.

Amt	PE	TITLE	Previously	
			Submitted	Revised
			Budget Amt	Budget
			(\$000)	(\$000)
0603005A		Combat Vehicle and Automotive Advanced Technology	229,778	234,978
0603854A		Artillery Systems – Dem/Val	251,665	246,465
0604223A		Comanche	914,932	910,160
0605716A		Army Evaluation Center	41,250	43,950
0605718A		Simulation & Modeling For Acq, Rqts, & Tng (SMART)	0	2,694
0605801A		Programwide Activities	78,452	73,058
0203744A		Aircraft Modifications/Product Improvement Program	196,794	201,566

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 Department of the Army
 FY 2003 RDT&E Program

Exhibit R-1

Summary

01-Feb-2002

Summary Recap of Budget Activities	Thousands of Dollars		
	FY 2001	FY 2002	FY 2003
UNCLASSIFIED Department of the Army FY 2003 RDT&E Program			

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

01-Feb-2002

Line	Program Element	Act	Item	Thousands of Dollars		
				FY 2001	FY 2002	FY 2003
	Basic research			205,184	231,982	237,486
	Applied Research			814,839	909,564	642,251
	Advanced technology development			811,028	910,329	735,652
	Demonstration/validation			897,927	878,491	775,641
	Engineering and manufacturing development			1,784,361	2,200,967	2,796,790
	Management support			890,780	795,316	806,058
	Operational system development			859,043	1,126,020	924,616
Total	RDT&E, Army			6,263,162	7,052,669	6,918,494

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				FY 2001	FY 2002	FY 2003
Basic research						
1	0601101A	01	IN-HOUSE LABORATORY INDEPENDENT RESEARCH	13,983	14,688	22,998
2	0601102A	01	DEFENSE RESEARCH SCIENCES	133,081	144,240	139,633
3	0601104A	01	UNIVERSITY AND INDUSTRY RESEARCH CENTERS	58,120	73,054	74,855
Total: Basic research				205,184	231,982	237,486
Applied Research						
4	0602105A	02	MATERIALS TECHNOLOGY	30,625	20,617	18,659
5	0602120A	02	SENSORS AND ELECTRONIC SURVIVABILITY	22,662	31,934	24,305
6	0602122A	02	TRACTOR HIP	6,991	7,672	6,839
7	0602211A	02	AVIATION TECHNOLOGY	30,216	43,859	43,692
8	0602270A	02	EW TECHNOLOGY	21,624	17,292	19,584
9	0602303A	02	MISSILE TECHNOLOGY	71,056	61,085	31,884
10	0602307A	02	ADVANCED WEAPONS TECHNOLOGY	6,435	26,883	11,208
11	0602308A	02	ADVANCED CONCEPTS AND SIMULATION	35,334	31,333	20,634
12	0602601A	02	COMBAT VEHICLE AND AUTOMOTIVE TECHNOLOGY	87,009	112,957	55,763
13	0602618A	02	BALLISTICS TECHNOLOGY	52,245	60,948	74,094
14	0602622A	02	CHEMICAL, SMOKE AND EQUIPMENT DEFEATING TECHNOLOGY	3,840	6,529	3,675
15	0602623A	02	JOINT SERVICE SMALL ARMS PROGRAM	5,223	5,560	5,812
16	0602624A	02	WEAPONS AND MUNITIONS TECHNOLOGY	46,722	65,197	38,090

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				FY 2001	FY 2002	FY 2003
17	0602705A	02	ELECTRONICS AND ELECTRONIC DEVICES	40,144	49,965	27,448
18	0602709A	02	NIGHT VISION TECHNOLOGY	24,935	22,993	22,333
19	0602712A	02	COUNTERMINE SYSTEMS	17,228	22,889	13,186
20	0602716A	02	HUMAN FACTORS ENGINEERING TECHNOLOGY	17,911	19,791	17,415
21	0602720A	02	ENVIRONMENTAL QUALITY TECHNOLOGY	58,745	23,569	23,018
22	0602782A	02	COMMAND, CONTROL, COMMUNICATIONS TECHNOLOGY	22,987	24,123	21,821
23	0602783A	02	COMPUTER AND SOFTWARE TECHNOLOGY	4,360	4,113	4,354
24	0602784A	02	MILITARY ENGINEERING TECHNOLOGY	54,366	59,354	51,124
25	0602785A	02	MANPOWER/PERSONNEL/TRAINING TECHNOLOGY	11,658	15,175	14,335
26	0602786A	02	LOGISTICS TECHNOLOGY	26,529	33,474	25,502
27	0602787A	02	MEDICAL TECHNOLOGY	108,400	128,798	67,476
28	0602789A	02	ARMY ARTIFICIAL INTELLIGENCE TECHNOLOGY	1	0	0
29	0602805A	02	DUAL USE SCIENCE AND TECHNOLOGY	7,593	13,454	0
Total: Applied Research				814,839	909,564	642,251
Advanced technology development						
30	0603001A	03	WARFIGHTER ADVANCED TECHNOLOGY	21,200	62,089	50,262
31	0603002A	03	MEDICAL ADVANCED TECHNOLOGY	216,951	174,042	16,590
32	0603003A	03	AVIATION ADVANCED TECHNOLOGY	26,835	38,496	45,404
33	0603004A	03	WEAPONS AND MUNITIONS ADVANCED TECHNOLOGY	56,230	35,381	66,514

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Line	Program Element	Act	Item	Thousands of Dollars		
				FY 2001	FY 2002	FY 2003
34	0603005A	03	COMBAT VEHICLE AND AUTOMOTIVE ADVANCED TECHNOLOGY	167,679	225,960	234,978
35	0603006A	03	COMMAND, CONTROL, COMMUNICATIONS ADVANCED TECHNOLO	27,820	33,176	4,826
36	0603007A	03	MANPOWER, PERSONNEL AND TRAINING ADVANCED TECHNOLO	6,844	3,093	3,527
37	0603008A	03	ELECTRONIC WARFARE ADVANCED TECHNOLOGY	0	0	28,254
38	0603009A	03	TRACTOR HIKE	12,391	10,324	18,069
39	0603017A	03	TRACTOR RED	951	0	0
40	0603020A	03	TRACTOR ROSE	10,476	9,212	4,895
41	0603105A	03	MILITARY HIV RESEARCH	5,661	5,885	0
42	0603122A	03	TRACTOR HIP	942	0	0
43	0603238A	03	GLOBAL SURVEILLANCE/AIR DEFENSE/PRECISION STRIKE T	20,997	31,986	31,291
44	0603270A	03	EW TECHNOLOGY	28,825	24,367	11,600
45	0603313A	03	MISSILE AND ROCKET ADVANCED TECHNOLOGY	48,444	75,396	87,890
46	0603322A	03	TRACTOR CAGE	2,963	3,283	3,083
47	0603606A	03	LANDMINE WARFARE AND BARRIER ADVANCED TECHNOLOGY	19,922	25,640	24,104
48	0603607A	03	JOINT SERVICE SMALL ARMS PROGRAM	11,809	4,388	6,013
49	0603654A	03	LINE-OF-SIGHT TECHNOLOGY DEMONSTRATION	50,262	69,859	28,283
50	0603710A	03	NIGHT VISION ADVANCED TECHNOLOGY	41,598	49,389	36,494
51	0603728A	03	ENVIRONMENTAL QUALITY TECHNOLOGY DEMONSTRATIONS	10,685	7,292	8,980
52	0603734A	03	MILITARY ENGINEERING ADVANCED TECHNOLOGY	5,006	4,705	2,921
53	0603772A	03	ADVANCED TACTICAL COMPUTER SCIENCE AND SENSOR TECH	16,537	16,366	21,674

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FY 2003 RDT&E Program

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UNCLASSIFIED Department of the Army FY 2003 RDT&E Program			

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Appropriation: 2040 A RDT&E, Army

01-Feb-2002

Line	Program Element	Act	Item	Thousands of Dollars		
				FY 2001	FY 2002	FY 2003
Total: Advanced technology development				811,028	910,329	735,652
Demonstration/validation						
54	0603305A	04	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION	0	0	27,887
55	0603308A	04	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION (DEM/VAL)	93,808	70,021	7,417
56	0603619A	04	LANDMINE WARFARE AND BARRIER - ADV DEV	17,804	19,877	20,286
57	0603627A	04	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-ADV DEV	0	0	2,432
58	0603639A	04	TANK AND MEDIUM CALIBER AMMUNITION	46,238	52,074	11,354
59	0603653A	04	ADVANCED TANK ARMAMENT SYSTEM (ATAS)	263,436	100,587	124,108
60	0603713A	04	ARMY DATA DISTRIBUTION SYSTEM	17	0	0
61	0603747A	04	SOLDIER SUPPORT AND SURVIVABILITY	13,117	17,331	20,788
62	0603766A	04	TACTICAL SUPPORT DEVELOPMENT - ADV DEV (TIARA)	0	16,605	16,392
63	0603774A	04	NIGHT VISION SYSTEMS ADVANCED DEVELOPMENT	14,831	8,675	11,694
64	0603779A	04	ENVIRONMENTAL QUALITY TECHNOLOGY DEM/VAL	12,880	35,030	9,331
65	0603782A	04	WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	0	12,464	60,809
66	0603790A	04	NATO RESEARCH AND DEVELOPMENT	1,847	6,375	8,773
67	0603801A	04	AVIATION - ADV DEV	9,506	13,196	8,643
68	0603802A	04	WEAPONS AND MUNITIONS - ADV DEV	27,520	34,197	27,761
69	0603804A	04	LOGISTICS AND ENGINEER EQUIPMENT - ADV DEV	6,127	6,399	11,419
70	0603805A	04	COMBAT SERVICE SUPPORT CONTROL SYSTEM EVALUATION A	13,627	8,621	8,971

UNCLASSIFIED
 Department of the Army
 FY 2003 RDT&E Program

Exhibit R-1

Summary

01-Feb-2002

Summary Recap of Budget Activities	Thousands of Dollars		
	FY 2001	FY 2002	FY 2003
UNCLASSIFIED Department of the Army FY 2003 RDT&E Program			

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

01-Feb-2002

Line	Program Element	Act	Item	Thousands of Dollars		
				FY 2001	FY 2002	FY 2003
71	0603807A	04	MEDICAL SYSTEMS - ADV DEV	14,970	19,872	10,398
72	0603850A	04	INTEGRATED BROADCAST SERVICE (JMIP/DISTP)	0	1,968	1,962
73	0603851A	04	TRACTOR CAGE (DEM/VAL)	941	3,686	0
74	0603854A	04	ARTILLERY SYSTEMS - DEM/VAL	341,765	444,091	246,465
75	0603856A	04	SCAMP BLOCK II	19,493	6,895	21,006
76	0603869A	04	MEADS CONCEPTS - DEM/VAL	0	527	117,745
Total: Demonstration/validation				897,927	878,491	775,641
Engineering and manufacturing development						
77	0604201A	05	AIRCRAFT AVIONICS	40,527	50,838	40,308
78	0604220A	05	ARMED, DEPLOYABLE OH-58D	511	2,326	1,873
79	0604223A	05	COMANCHE	590,771	781,307	910,160
80	0604270A	05	EW DEVELOPMENT	64,241	53,616	22,819
81	0604280A	05	JOINT TACTICAL RADIO SYSTEM	59,814	74,814	65,818
82	0604321A	05	ALL SOURCE ANALYSIS SYSTEM	45,586	44,198	42,322
83	0604328A	05	TRACTOR CAGE	2,820	3,856	9,800
84	0604329A	05	COMMON MISSILE	4,683	16,592	29,919
85	0604601A	05	INFANTRY SUPPORT WEAPONS	2	0	0
86	0604604A	05	MEDIUM TACTICAL VEHICLES	2,014	1,945	1,953
87	0604609A	05	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-ENG DEV	3,336	7,854	8,153

UNCLASSIFIED
 Department of the Army
 FY 2003 RDT&E Program

Exhibit R-1

Summary

01-Feb-2002

Summary Recap of Budget Activities	Thousands of Dollars		
	FY 2001	FY 2002	FY 2003
UNCLASSIFIED Department of the Army FY 2003 RDT&E Program			

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

01-Feb-2002

Line	Program Element	Act	Item	Thousands of Dollars		
				FY 2001	FY 2002	FY 2003
88	0604611A	05	JAVELIN	471	2,825	489
89	0604619A	05	LANDMINE WARFARE	19,287	18,780	11,913
90	0604622A	05	FAMILY OF HEAVY TACTICAL VEHICLES	0	0	3,990
91	0604633A	05	AIR TRAFFIC CONTROL	1,159	2,179	2,339
92	0604641A	05	TACTICAL UNMANNED GROUND VEHICLE (TUGV)	288	1,490	0
93	0604642A	05	LIGHT TACTICAL WHEELED VEHICLES	9,171	2,501	7,877
94	0604645A	05	ARMORED SYSTEMS MODERNIZATION (ASM)-ENG. DEV.	2,115	0	59,860
95	0604649A	05	ENGINEER MOBILITY EQUIPMENT DEVELOPMENT	0	9,202	8,146
96	0604710A	05	NIGHT VISION SYSTEMS - ENG DEV	28,722	27,376	32,328
97	0604713A	05	COMBAT FEEDING, CLOTHING, AND EQUIPMENT	88,705	90,244	94,474
98	0604715A	05	NON-SYSTEM TRAINING DEVICES - ENG DEV	71,482	28,682	43,650
99	0604716A	05	TERRAIN INFORMATION - ENG DEV	7,027	8,766	8,232
100	0604726A	05	INTEGRATED METEOROLOGICAL SUPPORT SYSTEM	1,755	1,896	3,417
101	0604738A	05	JSIMS CORE PROGRAM	0	30,727	24,230
102	0604739A	05	INTEGRATED BROADCAST SERVICE	6,005	0	0
103	0604741A	05	AIR DEFENSE COMMAND, CONTROL AND INTELLIGENCE - EN	15,857	17,088	26,978
104	0604742A	05	CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	0	65,613	53,294
105	0604746A	05	AUTOMATIC TEST EQUIPMENT DEVELOPMENT	12,466	13,174	11,839
106	0604760A	05	DISTRIBUTIVE INTERACTIVE SIMULATIONS (DIS) - ENGIN	19,924	20,975	21,487
107	0604766A	05	TACTICAL EXPLOITATION SYSTEM/DCGS (TIARA)	57,867	59,693	56,662
108	0604768A	05	BRILLIANT ANTI-ARMOR SUBMUNITION (BAT)	97,931	122,868	190,293

UNCLASSIFIED
Department of the Army
FY 2003 RDT&E Program

Exhibit R-1

Summary

01-Feb-2002

Summary Recap of Budget Activities

Thousands of Dollars

FY 2001	FY 2002	FY 2003
---------	---------	---------

UNCLASSIFIED
Department of the Army
FY 2003 RDT&E Program

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

01-Feb-2002

Line	Program Element	Act	Item	Thousands of Dollars		
				FY 2001	FY 2002	FY 2003
109	0604770A	05	JOINT SURVEILLANCE/TARGET ATTACK RADAR SYSTEM	28,133	8,026	4,740
110	0604778A	05	POSITIONING SYSTEMS DEVELOPMENT (SPACE)	2,327	0	0
111	0604780A	05	COMBINED ARMS TACTICAL TRAINER (CATT)	17,784	13,531	7,579
112	0604783A	05	JOINT NETWORK MANAGEMENT SYSTEM	0	25,912	8,028
113	0604801A	05	AVIATION - ENG DEV	10,698	4,032	3,150
114	0604802A	05	WEAPONS AND MUNITIONS - ENG DEV	17,698	17,146	41,758
115	0604804A	05	LOGISTICS AND ENGINEER EQUIPMENT - ENG DEV	23,595	29,326	65,857
116	0604805A	05	COMMAND, CONTROL, COMMUNICATIONS SYSTEMS - ENG DEV	62,557	118,643	82,238
117	0604807A	05	MEDICAL MATERIEL/MEDICAL BIOLOGICAL DEFENSE EQUIPM	6,089	9,153	12,625
118	0604808A	05	LANDMINE WARFARE/BARRIER - ENG DEV	84,867	68,550	128,992
119	0604814A	05	SENSE AND DESTROY ARMAMENT MISSILE - ENG DEV	28,596	61,300	70,888
120	0604817A	05	COMBAT IDENTIFICATION	6,705	2,989	1,995
121	0604818A	05	ARMY TACTICAL COMMAND & CONTROL HARDWARE & SOFTWARE	37,849	57,216	80,672
122	0604819A	05	LOSAT	25,364	21,416	14,463
123	0604820A	05	RADAR DEVELOPMENT	12,911	5,119	0
124	0604823A	05	FIREFINDER	45,466	26,732	26,122
125	0604854A	05	ARTILLERY SYSTEMS - EMD	19,006	61,961	251,376
126	0604865A	05	PATRIOT PAC-3 THEATER MISSILE DEFENSE ACQ - EMD	0	0	150,819
127	0605013A	05	INFORMATION TECHNOLOGY DEVELOPMENT	100,179	108,490	50,865
Total: Engineering and manufacturing development				1,784,361	2,200,967	2,796,790

UNCLASSIFIED
 Department of the Army
 FY 2003 RDT&E Program

Exhibit R-1

Summary

01-Feb-2002

Summary Recap of Budget Activities	Thousands of Dollars		
	FY 2001	FY 2002	FY 2003
UNCLASSIFIED Department of the Army FY 2003 RDT&E Program			

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

01-Feb-2002

Line	Program Element	Act	Item	Thousands of Dollars		
				FY 2001	FY 2002	FY 2003
	Management support					
128	0604256A	06	THREAT SIMULATOR DEVELOPMENT	20,293	18,857	15,251
129	0604258A	06	TARGET SYSTEMS DEVELOPMENT	14,961	25,003	10,772
130	0604759A	06	MAJOR T&E INVESTMENT	42,380	49,482	53,797
131	0605103A	06	RAND ARROYO CENTER	19,105	19,806	22,148
132	0605301A	06	ARMY KWAJALEIN ATOLL	147,442	148,825	132,831
133	0605326A	06	CONCEPTS EXPERIMENTATION	18,179	31,501	22,627
134	0605502A	06	SMALL BUSINESS INNOVATIVE RESEARCH	144,559	0	0
135	0605601A	06	ARMY TEST RANGES AND FACILITIES	120,277	113,451	144,183
136	0605602A	06	ARMY TECHNICAL TEST INSTRUMENTATION AND TARGETS	39,094	34,719	43,222
137	0605604A	06	SURVIVABILITY/LETHALITY ANALYSIS	38,326	34,514	39,200
138	0605605A	06	DOD HIGH ENERGY LASER TEST FACILITY	36,145	23,188	14,410
139	0605606A	06	AIRCRAFT CERTIFICATION	3,140	3,552	4,062
140	0605702A	06	METEOROLOGICAL SUPPORT TO RDT&E ACTIVITIES	6,719	6,833	7,310
141	0605706A	06	MATERIEL SYSTEMS ANALYSIS	8,683	8,811	10,189
142	0605709A	06	EXPLOITATION OF FOREIGN ITEMS	3,549	3,495	3,490
143	0605712A	06	SUPPORT OF OPERATIONAL TESTING	68,382	90,790	99,375
144	0605716A	06	ARMY EVALUATION CENTER	25,855	44,611	43,950
145	0605718A	06	SIMULATION & MODELING FOR ACQ, RQTS, & TNG (SMART)	0	0	2,694
146	0605801A	06	PROGRAMWIDE ACTIVITIES	67,449	59,584	73,058

UNCLASSIFIED
 Department of the Army
 FY 2003 RDT&E Program

Exhibit R-1

Summary

01-Feb-2002

Summary Recap of Budget Activities

Thousands of Dollars

FY 2001	FY 2002	FY 2003
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UNCLASSIFIED
 Department of the Army
 FY 2003 RDT&E Program

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

01-Feb-2002

Thousands of Dollars

Line	Program Element	Act	Item	FY 2001	FY 2002	FY 2003
147	0605803A	06	TECHNICAL INFORMATION ACTIVITIES	32,521	38,930	34,040
148	0605805A	06	MUNITIONS STANDARDIZATION, EFFECTIVENESS AND SAFET	15,961	30,437	16,014
149	0605856A	06	ENVIRONMENTAL COMPLIANCE	2,404	0	0
150	0605857A	06	ARMY ACQUISITION POLLUTION PREVENTION PROGRAM	5,019	1,719	1,902
151	0605898A	06	MANAGEMENT HEADQUARTERS (RESEARCH AND DEVELOPMENT)	8,185	7,208	11,533
152	0909999A	06	FINANCING FOR CANCELLED ACCOUNT ADJUSTMENTS	2,152	0	0
Total: Management support				890,780	795,316	806,058
Operational system development						
153	0102419A	07	JOINT LAND ATTACK CRUISE MISSILES DEFENSE (JLENS)	25,981	32,130	29,081
154	0203610A	07	DOMESTIC PREPAREDNESS AGAINST WEAPONS OF MASS DEST	2,884	2,581	0
155	0203726A	07	ADV FIELD ARTILLERY TACTICAL DATA SYSTEM	35,420	36,650	38,161
156	0203735A	07	COMBAT VEHICLE IMPROVEMENT PROGRAMS	95,689	166,449	54,465
157	0203740A	07	MANEUVER CONTROL SYSTEM	47,071	39,883	44,444
158	0203744A	07	AIRCRAFT MODIFICATIONS/PRODUCT IMPROVEMENT PROGRAM	97,654	145,169	201,566
159	0203752A	07	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM	5,658	14,889	3,689
160	0203758A	07	DIGITIZATION	30,820	32,027	28,968
161	0203759A	07	FORCE XXI BATTLE COMMAND, BRIGADE AND BELOW (FBCB2	62,144	56,381	64,915
162	0203761A	07	FORCE XXI WRAP	0	15,446	0
163	0203801A	07	MISSILE/AIR DEFENSE PRODUCT IMPROVEMENT PROGRAM	13,892	13,727	43,738

UNCLASSIFIED
Department of the Army
FY 2003 RDT&E Program

Exhibit R-1

Summary

01-Feb-2002

Summary Recap of Budget Activities	Thousands of Dollars		
	FY 2001	FY 2002	FY 2003
UNCLASSIFIED Department of the Army FY 2003 RDT&E Program			

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

01-Feb-2002

Line	Program Element	Act	Item	Thousands of Dollars		
				FY 2001	FY 2002	FY 2003
164	0203802A	07	OTHER MISSILE PRODUCT IMPROVEMENT PROGRAMS	54,419	68,318	13,018
165	0203808A	07	TRACTOR CARD	3,689	11,457	8,891
166	0208010A	07	JOINT TACTICAL COMMUNICATIONS PROGRAM (TRI-TAC)	35,423	21,428	14,121
167	0208053A	07	JOINT TACTICAL GROUND SYSTEM	6,209	5,176	2,860
168	0301359A	07	SPECIAL ARMY PROGRAM	10,636	7,072	7,031
169	0303028A	07	SECURITY AND INTELLIGENCE ACTIVITIES	0	2,434	5,438
170	0303140A	07	INFORMATION SYSTEMS SECURITY PROGRAM	12,109	13,253	14,844
171	0303141A	07	GLOBAL COMBAT SUPPORT SYSTEM	68,867	84,426	71,864
172	0303142A	07	SATCOM GROUND ENVIRONMENT (SPACE)	38,286	44,647	72,244
173	0303150A	07	WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM	13,783	13,385	17,895
174	0305114A	07	TRAFFIC CONTROL, APPROACH AND LANDING SYSTEM-FY 19	637	777	977
175	0305204A	07	TACTICAL UNMANNED AERIAL VEHICLES	35,970	37,880	46,479
176	0305206A	07	AIRBORNE RECONNAISSANCE ADV DEVELOPMENT	4,864	10,972	4,882
177	0305208A	07	DISTRIBUTED COMMON GROUND SYSTEMS (JMIP)	7,839	72,095	15,683
178	0603778A	07	MLRS PRODUCT IMPROVEMENT PROGRAM	62,955	99,505	57,825
179	0708045A	07	END ITEM INDUSTRIAL PREPAREDNESS ACTIVITIES	85,644	77,863	61,025
180	1001018A	07	NATO JOINT STARS	500	0	512
Total: Operational system development				859,043	1,126,020	924,616
Total: RDT&E, Army				6,263,162	7,052,669	6,918,494

Table of Contents - RDT&E Volume II

Line No.	PE	Program Element Title	Page
#4 - Demonstration/validation			
54	0603305A	Army Missile Defense Systems Integration	1
55	0603308A	Army Missile Defense Systems Integration (Dem/Val)	18
56	0603619A	Landmine Warfare and Barrier - Adv Dev	28
57	0603627A	Smoke, Obscurant and Target Defeating Sys-Adv Dev	39
58	0603639A	Tank and Medium Caliber Ammunition	44
59	0603653A	ADVANCED TANK ARMAMENT SYSTEM (ATAS)	64
61	0603747A	Soldier Support and Survivability	73
62	0603766A	Tactical Support Development - Adv Dev (TIARA)	93
63	0603774A	Night Vision Systems Advanced Development	98
64	0603779A	Environmental Quality Technology Dem/Val	108
65	0603782A	WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	120
66	0603790A	NATO Research and Development	126
67	0603801A	Aviation - Adv Dev	138
68	0603802A	Weapons and Munitions - Adv Dev	158
69	0603804A	Logistics and Engineer Equipment - Adv Dev	172
70	0603805A	Combat Service Support Control System Evaluation a	192
71	0603807A	Medical Systems - Adv Dev	198
72	0603850A	Integrated Broadcast Service (JMIP/DISTP)	216
74	0603854A	Artillery Systems - Dem/Val	222
75	0603856A	SCAMP Block II	232

Table of Contents - RDT&E Volume II

Line No.	PE	Program Element Title	Page
76	0603869A	Meads Concepts - Dem/Val	239
#5 - Engineering and manufacturing development			
77	0604201A	AIRCRAFT AVIONICS	245
78	0604220A	Armed, Deployable OH-58D	256
79	0604223A	COMANCHE	261
80	0604270A	EW DEVELOPMENT	275
81	0604280A	Joint Tactical Radio System	301
82	0604321A	ALL SOURCE ANALYSIS SYSTEM	309
84	0604329A	Common Missile	324
86	0604604A	MEDIUM TACTICAL VEHICLES	330
87	0604609A	Smoke, Obscurant and Target Defeating Sys-Eng Dev	337
88	0604611A	JAVELIN	346
89	0604619A	LANDMINE WARFARE	349
90	0604622A	Family of Heavy Tactical Vehicles	354
91	0604633A	AIR TRAFFIC CONTROL	364
92	0604641A	TACTICAL UNMANNED GROUND VEHICLE (TUGV)	372
93	0604642A	LIGHT TACTICAL WHEELED VEHICLES	375
94	0604645A	Armored Systems Modernization (ASM)-Eng. Dev.	383
95	0604649A	ENGINEER MOBILITY EQUIPMENT DEVELOPMENT	390
96	0604710A	Night Vision Systems - Eng Dev	397

Table of Contents - RDT&E Volume II

Line No.	PE	Program Element Title	Page
97	0604713A	Combat Feeding, Clothing, and Equipment	416
98	0604715A	Non-System Training Devices - Eng Dev	451
99	0604716A	TERRAIN INFORMATION - ENG DEV	466
100	0604726A	Integrated Meteorological Support System	474
101	0604738A	JSIMS Core Program	483
102	0604739A	Integrated Broadcast Service	489
103	0604741A	Air Defense Command, Control and Intelligence - Eng	492
104	0604742A	CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	506
105	0604746A	Automatic Test Equipment Development	519
106	0604760A	Distributive Interactive Simulations (DIS) - Engin	532
107	0604766A	Tactical Exploitation System/DCGS-A (TIARA)	545
108	0604768A	Brilliant Anti-Armor Submunition (BAT)	554
109	0604770A	Joint Surveillance/Target Attack Radar System	561
111	0604780A	COMBINED ARMS TACTICAL TRAINER (CATT)	570
112	0604783A	JOINT NETWORK MANAGEMENT SYSTEM	582
113	0604801A	Aviation - Eng Dev	588
114	0604802A	Weapons and Munitions - Eng Dev	594
115	0604804A	Logistics and Engineer Equipment - Eng Dev	627
116	0604805A	Command, Control, Communications Systems - Eng Dev	675
117	0604807A	Medical Materiel/Medical Biological Defense Equipm	721
118	0604808A	Landmine Warfare/Barrier - Eng Dev	733

Table of Contents - RDT&E Volume II

Line No.	PE	Program Element Title	Page
119	0604814A	Sense and Destroy Armament Missile - Eng Dev	759
120	0604817A	Combat Identification	770
121	0604818A	Army Tactical Command & Control Hardware & Software	777
122	0604819A	LOSAT	819
123	0604820A	RADAR DEVELOPMENT	826
124	0604823A	FIREFINDER	829
125	0604854A	Artillery Systems - EMD	837
126	0604865A	Patriot PAC-3 Theater Missile Defense Acq - EMD	854
127	0605013A	Information Technology Development	861

Alphabetic Listing - RDT&E Volume II

Program Element Title	PE	Line No.	Page
ADVANCED TANK ARMAMENT SYSTEM (ATAS)	0603653A	59	64
Air Defense Command, Control and Intelligence - Eng	0604741A	103	492
AIR TRAFFIC CONTROL	0604633A	91	364
AIRCRAFT AVIONICS	0604201A	77	245
ALL SOURCE ANALYSIS SYSTEM	0604321A	82	309
Armed, Deployable OH-58D	0604220A	78	256
Armored Systems Modernization (ASM)-Eng. Dev.	0604645A	94	383
Army Missile Defense Systems Integration	0603305A	54	1
Army Missile Defense Systems Integration (Dem/Val)	0603308A	55	18
Army Tactical Command & Control Hardware & Software	0604818A	121	777
Artillery Systems - Dem/Val	0603854A	74	222
Artillery Systems - EMD	0604854A	125	837
Automatic Test Equipment Development	0604746A	105	519
Aviation - Adv Dev	0603801A	67	138
Aviation - Eng Dev	0604801A	113	588
Brilliant Anti-Armor Submunition (BAT)	0604768A	108	554
COMANCHE	0604223A	79	261
Combat Feeding, Clothing, and Equipment	0604713A	97	416
Combat Identification	0604817A	120	770
Combat Service Support Control System Evaluation a	0603805A	70	192
COMBINED ARMS TACTICAL TRAINER (CATT)	0604780A	111	570

Alphabetic Listing - RDT&E Volume II

Program Element Title	PE	Line No.	Page
Command, Control, Communications Systems - Eng Dev	0604805A	116	675
Common Missile	0604329A	84	324
CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	0604742A	104	506
Distributive Interactive Simulations (DIS) - Engin	0604760A	106	532
ENGINEER MOBILITY EQUIPMENT DEVELOPMENT	0604649A	95	390
Environmental Quality Technology Dem/Val	0603779A	64	108
EW DEVELOPMENT	0604270A	80	275
Family of Heavy Tactical Vehicles	0604622A	90	354
FIREFINDER	0604823A	124	829
Information Technology Development	0605013A	127	861
Integrated Broadcast Service	0604739A	102	489
Integrated Broadcast Service (JMIP/DISTP)	0603850A	72	216
Integrated Meteorological Support System	0604726A	100	474
JAVELIN	0604611A	88	346
JOINT NETWORK MANAGEMENT SYSTEM	0604783A	112	582
Joint Surveillance/Target Attack Radar System	0604770A	109	561
Joint Tactical Radio System	0604280A	81	301
JSIMS Core Program	0604738A	101	483
LANDMINE WARFARE	0604619A	89	349
Landmine Warfare and Barrier - Adv Dev	0603619A	56	28
Landmine Warfare/Barrier - Eng Dev	0604808A	118	733

Alphabetic Listing - RDT&E Volume II

Program Element Title	PE	Line No.	Page
LIGHT TACTICAL WHEELED VEHICLES	0604642A	93	375
Logistics and Engineer Equipment - Adv Dev	0603804A	69	172
Logistics and Engineer Equipment - Eng Dev	0604804A	115	627
LOSAT	0604819A	122	819
Meads Concepts - Dem/Val	0603869A	76	239
Medical Materiel/Medical Biological Defense Equipm	0604807A	117	721
Medical Systems - Adv Dev	0603807A	71	198
MEDIUM TACTICAL VEHICLES	0604604A	86	330
NATO Research and Development	0603790A	66	126
Night Vision Systems - Eng Dev	0604710A	96	397
Night Vision Systems Advanced Development	0603774A	63	98
Non-System Training Devices - Eng Dev	0604715A	98	451
Patriot PAC-3 Theater Missile Defense Acq - EMD	0604865A	126	854
RADAR DEVELOPMENT	0604820A	123	826
SCAMP Block II	0603856A	75	232
Sense and Destroy Armament Missile - Eng Dev	0604814A	119	759
Smoke, Obscurant and Target Defeating Sys-Adv Dev	0603627A	57	39
Smoke, Obscurant and Target Defeating Sys-Eng Dev	0604609A	87	337
Soldier Support and Survivability	0603747A	61	73
Tactical Exploitation System/DCGS-A (TIARA)	0604766A	107	545
Tactical Support Development - Adv Dev (TIARA)	0603766A	62	93

Alphabetic Listing - RDT&E Volume II

Program Element Title	PE	Line No.	Page
TACTICAL UNMANNED GROUND VEHICLE (TUGV)	0604641A	92	372
Tank and Medium Caliber Ammunition	0603639A	58	44
TERRAIN INFORMATION - ENG DEV	0604716A	99	466
WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	0603782A	65	120
Weapons and Munitions - Adv Dev	0603802A	68	158
Weapons and Munitions - Eng Dev	0604802A	114	594

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

COST (In Thousands)	FY 2001 Actual	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	27887	68837	68840	54130	44043	0	263737
TR3 MOBILE TACTICAL HIGH ENERGY LASER (MTHL)	0	0	3492	39780	39683	24762	9876	0	117593
TR4 MISSILE DEFENSE INTEGRATION	0	0	8120	12010	12117	12059	12148	0	56454
TR5 MISSILE DEFENSE BATTLELAB	0	0	13105	13298	13602	13784	18511	0	72300
TR6 ARMY AIR AND MISSILE DEFENSE	0	0	3170	3749	3438	3525	3508	0	17390

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

Mobile Tactical High Energy Laser: This project funds a chemical laser weapon system assessment and hardware development effort for the Army Transformation.

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. This Program also supports the Technical and Integration of the Army's Single Integrated Air Picture (SIAP).

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). The Army is developing and procuring individual TAMD weapon systems that must be integrated to form a Family of Systems (FoS).

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

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.

This program supports the Legacy to Objective transition path of the Transformation Campaign Plan.

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	0	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	27887
Current Budget Submit (FY 2003 PB)	0	0	27887

FY03 increases due to re-alignment of funding from PE 0603308A.

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603305A - Army Missile Defense Systems Integration						PROJECT TR3		
COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
TR3 MOBILE TACTICAL HIGH ENERGY LASER (MTHEL)		0	0	3492	39780	39683	24762	9876	0	117593

A. Mission Description and Budget Item Justification: This project funds weapon system assessment and hardware development effort for the Army Transformation applications based on mature chemical laser technologies and available HEL beam control subsystems and integrates them into a mobile platform. This effort will leverage the successful components of the Tactical High Energy Laser Advanced Concept Technology Demonstration (THEL ACTD), which is based on deuterium fluoride chemical laser (DFCL) technologies, and will include demonstrated chemical oxygen laser (COIL) technologies; acquisition, pointing, and tracking system; and battle management systems. The MTHEL development effort is a continuation of the combined US/Israel THEL program, which was initiated in Jul 96 to evaluate the effectiveness of THELs to negate the threat posed to population areas by short range Katyusha rockets. The THEL ACTD was successfully completed in Oct 00 and is currently in the two year ACTD residual testing phase at the High Energy Laser Systems Test Facility (HELSTF). The demonstrated effectiveness of the fixed site THEL demonstrator led to the initiation of a system engineering trade study in FY01 to transition to mobile THEL variants that meet both Israeli and US Army mission needs. The mission of the MTHEL is based on a Combined Operational Requirement being developed by the US Army Air Defense School and the Israeli Air Force. The work in this program element is consistent with the Army Directed Energy Master Plan and the Army Modernization Plan. Work in this program element is related to and fully coordinated with efforts in PE 0605605 (DOD High Energy Laser Systems Test Facility) and PE 0602307A (Advanced Weapons Technology, Project 042 - High Energy Laser Technology) in accordance with the ongoing Reliance joint planning process and contains no unwarranted duplication of effort among the military departments. Work is performed by the US Army Space and Missile Defense Command (SMDC) in Huntsville, AL. This system supports the Legacy to Objective path of the Army Transformation Campaign Plan and introduces a new weapon demonstration system based on an identified key enabling transformation technology, high energy lasers, leading to a HEL system for the US Army warfighting arsenal.

FY 2003 Planned Program

- 3492 Continue System Engineering Assessment based on the MTHEL Combined Operational Requirements Document and lethality testing results. Major efforts will include: integrating mature chemical HEL technologies; modified THEL component and subsystem designs for pressure recovery, exhaust management, thermal management closed cycle operation, gain generation, vibration damping, beam control, etc.; and conduct lethality and propagation testing using both DF CL and COIL wavelengths from available sources to validate codes related to system engineering and performance specifications.

Total 3492

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
TR3

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

Israel provided \$9.1M in FY 01 under the provisions of the THEL Memorandum of Agreement (MOA) to support this effort. Under the MTHEL system MOA, Israel is expected to match the majority of the Army's MTHEL funding on a 50/50 basis.

C. Acquisition Strategy: The MTHEL acquisition strategy is to assess chemical laser technologies in FY 02 and FY 03 in System Engineering Trade Studies and lethality testing, and then select those technologies that will be integrated into a fully mobile tactical high energy laser system beginning in FY 04. The fabrication, integration, and functional testing of the MTHEL is expected to take approximately 3 years, followed by one to three years of demonstration/validation testing at the High Energy Laser Systems Test Facility to enable the Army to effectively address key doctrinal, training, operational tactics, techniques, and procedures, logistics, etc. for developing, fielding, integrating and deploying a HEL weapon system into the US Army arsenal.

<u>D. Schedule Profile</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>
Conduct Assessment of DF & COIL Technologies			1-4Q				
Initiate Long Leads & Fabrication			1-4Q				
Complete Fabrication/Integration				1-4Q	1-4Q	1-4Q	
Complete Functional Testing						1-4Q	
Complete Field Testing at HELSTF							1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
TR3

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 . Tech Assessment	TBD	TBD	0	0		0		3000	1-4Q	Continue	Continue	0
Subtotal:			0	0		0		3000		Continue	Continue	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 . Tech Assessment	SETAC	TBD/Hsv, AL	0	0		0		492	1-4Q	Continue	492	0
Subtotal:			0	0		0		492		Continue	492	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
TR3

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:			0	0		0		3492		Continue	Continue	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603305A - Army Missile Defense Systems					PROJECT TR4			
		Integration								
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
TR4 MISSILE DEFENSE INTEGRATION	0	0	8120	12010	12117	12059	12148	0	56454	

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). Existing USASMDC elements were reorganized and merged to form the Force Development and Integration Center (FDIC). This project funds the SMDI efforts required to execute the specified proponent role of USASMDC through development of Space and Missile Defense (SMD) 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. Additionally, this project funds analysis and experimentation integrating the pillars of MD (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 MD mission and exceed the scope of other programs.

Additionally the Office of Technical Integration and Interoperability (OTII) was established in July 2000 to serve as the Command's lead for Army Single Integrated Air Picture (SIAP) initiatives and perform the critical function of identifying technology efforts within DoD and industry to focus and leverage ongoing and projected technology initiatives in space and missile defense. This project funds the coordination of SIAP requirements with the operational community: verification that operational requirements exist to support technical specifications and any subsequent changes; integration and coordination of army operational requirements for SIAP with the user community; determination of which implementation options/roadmaps provide the maximum warfighting benefits; development of the operational view within the Theater Air and Missile Defense (TAMD) integrated architecture; identification of existing and/or required modeling and simulation capabilities to support SIAP; and integration of hardware-in-the-loop and associated assessments and analysis. These products/tasks are required to ensure a specific, focused effort that integrates SIAP with weapons, sensors, BMC3 and concepts of operations. This program also supports Aviation and Artillery attack operation systems and passive missile defense materiel solutions. This project supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2003 Planned Program

- 5326 Continue 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 Space-based Infrared System (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.

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
TR4

FY 2003 Planned Program (Continued)

- 2794 Continue efforts for coordinating SIAP requirements with TRADOC Deputy Combat Developers (DCDs) to consolidate SIAP operational requirements across all four pillars, integrating SIAP requirements into current and evolving doctrine, identifying SIAP demonstrations and experiments that showcase Army interoperability, coordinating Army participation in TAMDM joint interoperability exercises/demonstrations, assessing the models and simulations that support SIAP and developing the Army position on SIAP- related tools and supporting SIAP Task Force initiatives in resolving Joint Data Network (JDN) fixes.

Total 8120

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

C. Acquisition Strategy: Not applicable for this item.

D. Schedule Profile

	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	1-4Q	1-4Q
Continue to develop technical interoperability solutions for Integrated MD requirements.			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
TR4

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award 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:												

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	0	0		0		8120		0	8120	0
Subtotal:			0	0		0		8120		0	8120	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
TR4

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award 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:			0	0		0		8120		0	8120	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603305A - Army Missile Defense Systems Integration	PROJECT TR5
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COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
TR5 MISSILE DEFENSE BATTLELAB	0	0	13105	13298	13602	13784	18511	0	72300

A. Mission Description and Budget Item Justification: This project funds the delivery of space and missile defense innovations to the warfighter through prototyping, operational analysis, and experimentation to integrate space and missile defense into the Legacy, Interim, and Objective Forces and to address interoperability issues.

FY 2003 Planned Program

- 8826 Participate in Integration, Experiments and Exercises - Total Defender, Millennium Challenge, Future Operational Capability Operations Center Technology, Advanced Prototype Development. Millennium Challenge, Olympic Challenge, FCC2, Space Control, Hardware/Software Integration, advanced prototypes and concepts Development.
- 4279 Conduct Operational Analysis. Models, Sims, Assessment Tools - Brigade & Corps level operational analysis of space and missile defense related issues; space representation into existing models & simulations; maintenance of analysis M&S tools.

Total 13105

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)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
TR5

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award 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:												

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	CPAFF/CPF F	Various, AL & CO	0	0		0		7521		0	7521	0
b . Govt Support and Support Contracts	MIPR	Various, AL & CO	0	0		0		5584		0	5584	0
Subtotal:			0	0		0		13105		0	13105	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
TR5

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award 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:			0	0		0		13105		0	13105	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603305A - Army Missile Defense Systems Integration	PROJECT TR6
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COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
TR6 ARMY AIR AND MISSILE DEFENSE	0	0	3170	3749	3438	3525	3508	0	17390

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 engineering 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 2001 Accomplishments:

No funding received in FY01

FY 2002 Planned Program

Funding for FY02 contained in PE 0603308A, Proj 99A

FY 2003 Planned Program

- 1843 JDEP test Event Participation
- 730 Communications Equipment
- 597 Operational Center Support: Provides support during JDEP testing and pre-event simulations

Total 3170

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

**0603305A - Army Missile Defense Systems
Integration**

PROJECT

TR6

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)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
TR6

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
			0	0		0		0		0	0	0
Subtotal:												

Remarks: Fy02 costs are reflected in PE 0603308A, Proj 99A

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, contractor support and communications support	MIPR, 1095	Various	0	0		0		1836	1-4Q	0	1836	0
Subtotal:								1836		0	1836	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
TR6

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 support and equipment costs	1095, MIPR	Various Government Agencies	0	0		0		1334	1-4Q	0	1334	0
Subtotal:			0	0		0		1334		0	1334	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	0		0		3170		0	3170	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

COST (In Thousands)	FY 2001 Actual	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	93808	70021	7417	1472	1463	452	439	0	226463
978 SPACE CONTROL	2972	996	1001	999	996	0	0	0	6964
989 MOBILE TACTICAL HIGH ENERGY LASER (MTHL)	14420	12905	0	0	0	0	0	0	51252
990 SPACE AND MISSILE DEFENSE INTEGRATION	56913	41419	516	473	467	452	439	0	92663
997 SPACE AND MISSILE DEFENSE BATTLELAB	19503	13118	0	0	0	0	0	0	68101
99A ARMY AIR AND MISSILE DEFENSE	0	1583	5900	0	0	0	0	0	7483

A. Mission Description and Budget Item Justification: This program element funds missile defense systems integration efforts for both the Army Space and Missile Defense Command (SMDC) and the Program Executive Office for Air 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 by 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. It also supports the Technical and Integration of the Army's Single Integrated Air Picture (SIAP).

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)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

The Army is developing and procuring individual TAMD weapon systems that will 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 will integrate Army and Joint requirements in order to satisfy both needs. The PEO supports interoperability systems engineering, simulation, analysis, and evaluation in order to integrate the Family of Systems. Funding will allow the PEO to address both Army and Joint interoperability requirements, ensuring an effective Army TAMD FoS.

This program supports the Legacy to Objective transition path of the Transformation Campaign Plan.

Funding for projects 989, 990, 997 and 99A transferred to PE 0603305A beginning in FY03. Project 978, Space Control, is designated as a DOD Space Program.

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	96380	19491	22321
Appropriated Value	97273	71191	0
Adjustments to Appropriated Value		0	0
a. Congressional General Reductions		-1170	0
b. SBIR / STTR	-2572	0	0
c. Omnibus or Other Above Threshold Reductions		0	0
d. Below Threshold Reprogramming/Supplemental		0	0
e. Rescissions	-893	0	0
Adjustments to Budget Years Since FY2002 PB		0	-14904
Current Budget Submit (FY 2003 PB)	93808	70021	7417

Change Summary Explanation:

FY02 increases due to various Congressional adds to the President's Budget (\$51.7M). FY03 decrease due to re-alignments to meet critical Army priorities and transfers to PE 603305A.

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603308A - Army Missile Defense Systems Integration (Dem/Val)	PROJECT 978
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COST (In Thousands)	FY 2001 Actual	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	2972	996	1001	999	996	0	0	0	6964

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. 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) Army Space Control Negation Technologies, 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 degrade theater commanders' capabilities to achieve information superiority and total situational awareness of the total battlespace picture.

FY 2001 Accomplishments:

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

Total 2972

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

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

PROJECT

978**FY 2002 Planned Program**

- 996 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 996

FY 2003 Planned Program

- 1001 Perform analysis for potential application to the Future Combat System (FCS). Continue architectural definitions. Identify core battle management requirements.

Total 1001

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)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
978

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award 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		996		1001		0	4969	0
Subtotal:			0	2972		996		1001		0	4969	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)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

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
			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0
Project Total Cost:			0	2972		996		1001		0	4969	0

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603308A - Army Missile Defense Systems Integration (Dem/Val)						PROJECT 99A		
COST (In Thousands)	FY 2001 Actual	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	1583	5900	0	0	0	0	0	7483

A. Mission Description and Budget Item Justification: This funding supports both the JDEP and the SIAP efforts within the Army. 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).

The Single Integrated Air Picture (SIAP) program will provide track quality data and fused sensor data to weapon platforms to identify and engage threat systems. The Army was directed, by the JROC, to fund infrastructure costs associated with SIAP. This funding will be used to manage and coordinate all of the Army's SIAP activities with numerous Army stakeholders. It will also allow the Army to provide Army solutions to SIAP-related tasks.

FY 2001 Accomplishments:

No funding received in FY01

FY 2002 Planned Program

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

Total 1583

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

February 2002

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

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

PROJECT

99A

FY 2003 Planned Program

- 775 Program Management Support. Provides for Army overall management of SIAP program .
- 1875 Systems Engineering. Provides funding for Functional and Allocated baselines within Army systems.
- 600 Modeling and Simulation Support. Provides for capability to model and simulate Army systems.
- 700 Test and Evaluation. Provides funding for live test support and analysis of various Army test activities.
- 1200 Interoperability assessment. Provides support for Lessons Learned Database, root cause analysis, capabilities and limitations of systems and interoperability roadmap.
- 750 Block Upgrades. Provides funding for the an Acquisition Roadmap, Incremental Block Design options, life cycle costs estimates and block fielding plans.

Total 5900

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)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

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
a . Contractor Support	Various	Various	0	0		0		4425		0	4425	0
Subtotal:			0	0		0		4425		0	4425	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		775		Continue	1475	0
Subtotal:			0	0		700		775		Continue	1475	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

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		883		700		Continue	1583	0
Subtotal:			0	0		883		700		Continue	1583	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		1583		5900		Continue	7483	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation				PE NUMBER AND TITLE 0603619A - Landmine Warfare and Barrier - Adv Dev					
COST (In Thousands)	FY 2001 Actual	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	17804	19877	20286	19295	21133	13909	14779	Continuing	Continuing
005 LANDMINE ADV DEV	8150	9343	10116	9190	9167	8957	6355	Continuing	Continuing
606 CNTRMN/BARRIER ADV DEV	9654	10534	10170	10105	11966	4952	8424	Continuing	Continuing

A. Mission Description and Budget Item Justification: 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), and Ground Stand-off Mine Detection System (GSTAMIDS). These Systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY 2002 PB)	22594	21651	20633
Appropriated Value	22803	20051	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-174	0
b. SBIR/STTR	-672	0	0
c. Omnibus or other above threshold reduction	0	0	0
d. Below threshold reprogramming	-4118	0	0
e. Rescissions	-209	0	0
Adjustments to Budget Years Since FY 2002 PB	0	0	-347
Current Budget Submit (FY 2003 PB)	17804	19877	20286

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**February 2002**

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

0603619A - Landmine Warfare and Barrier - Adv Dev

FY01:

Funding: Reprogrammed \$4118K to support higher Army program requirements.

FY02:

Funding: Received \$400K congressional increase for Plants Detecting Minefields under project 606. Reduction against 005 (Raptor).

Schedule: Raptor MS B changed from 3Q 03 to 3Q 05 based on program restructuring.

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603619A - Landmine Warfare and Barrier - Adv Dev	PROJECT 005
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COST (In Thousands)	FY 2001 Actual	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	8150	9343	10116	9190	9167	8957	6355	Continuing	Continuing

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 2001 Accomplishments:

- 530 Conducted Solicitation Development and Source Selection Plan
 - 2850 Conducted study of Wide Area Munitions (WAM) to Gateway interface, develop Interface Control Document, Concept of Operations and Cold Region Research & Engineering Laboratory Studies
 - 1681 Conducted Source Selection for Component Advanced Development
 - 3089 Continued modeling and simulation development and upgrade to test range
- Total 8150

FY 2002 Planned Program

- 2126 Raptor Modeling and Simulation, Smart Munition Test Range Upgrade
 - 1500 White papers for systems concepts
 - 3917 Initiate Component Advanced Development for Raptor
 - 1800 Raptor Engineering Support
- Total 9343

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603619A - Landmine Warfare and Barrier - Adv Dev	PROJECT 005
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FY 2003 Planned Program

- 5116 Continue Raptor System Component Advanced Development
- 3000 Raptor Modeling and Simulation
- 2000 Raptor Engineering Support

Total 10116

<u>B. Other Program Funding Summary</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 0604808, Project 016, Mine Systems Engineering	0	4491	22472	31837	37359	37494	30823	Continuing	Continuing
SSN: M12100, Intelligent Combat Outpost	0	0	0	0	0	19976	19955	Continuing	Continuing
SSN: M12202, Raptor Training Device	0	0	0	0	0	2398	2395	Continuing	Continuing

C. Acquisition Strategy: Component Advanced Development contracts will be awarded to one or more contractors to develop the RAPTOR system. Downselect to one or more contractors for System Development and Demonstration.

<u>D. Schedule Profile</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>
Raptor CAD Decision Review		4Q					
Raptor MS B					3Q		

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration/validation

0603619A - Landmine Warfare and Barrier - Adv Dev

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	0		3617	2Q	5116	2Q	Continue	Continue	Continue
b . White papers and Concept Studies	C-CPIF	Various	0	2850	1-4Q	1500	1Q	0		0	4350	0
Subtotal:			0	2850		5117		5116		Continue	Continue	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	1511	1Q	1400	1Q	1490	1Q	Continue	Continue	Continue
b . Simulation and modeling	C-CPIF	Various	0	1000	1-4Q	800	1Q	1200	1Q	0	3000	0
c . Simulation/modeling	MIPR	CRREL, New Hampshire	200	1189	1Q	826	1Q	1500	1Q	0	3715	0
d . Other OGAs/contracts	Various	Various	989	400	1Q	400	1Q	500	1Q	Continue	Continue	Continue
Subtotal:			3288	4100		3426		4690		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603619A - Landmine Warfare and Barrier - Adv Dev	PROJECT 005
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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 (RAPTOR)	MIPR	ATEC, Virginia	0	900	1Q	500	1Q	10	1Q	Continue	Continue	Continue
Subtotal:			0	900		500		10		Continue	Continue	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	300	1Q	300	1Q	300	1Q	Continue	Continue	Continue
Subtotal:			372	300		300		300		Continue	Continue	Continue

Project Total Cost:			3660	8150		9343		10116		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603619A - Landmine Warfare and Barrier - Adv Dev					PROJECT 606			
COST (In Thousands)		FY 2001 Actual	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	9654	10534	10170	10105	11966	4952	8424	Continuing	Continuing

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), and Ground Stand-off Mine Detection System (GSTAMIDS). These Systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 8004 Developed GSTAMIDS Quadruple Resonance Confirmation Sensors.
 - 1650 Conducted Source selection and awarded GSTAMIDS Block 1 Systems Concept (Virtual Prototype) Contract.
- Total 9654

FY 2002 Planned Program

- 6500 Contractor Testing and Integration Risk Reduction of GSTAMIDS Quadruple Resonance Sensors.
 - 2500 Complete GSTAMIDS Block I Systems (Virtual Prototype) Concept.
 - 1134 Prepare and conduct GSTAMIDS Block I MS B IPR.
 - 400 Plants Detecting Minefields.
- Total 10534

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603619A - Landmine Warfare and Barrier - Adv Dev	PROJECT 606
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FY 2003 Planned Program

- 600 Prepare procurement package and award ASTAMIDS System Component Development.
- 9470 Initiate ASTAMIDS System Component Development.
- 100 Initiate test planning for ASTAMIDS.

Total 10170

<u>B. Other Program Funding Summary</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 415, Mine Neutralization/Detection	25900	36844	46220	34272	11446	8943	9502	Continuing	Continuing
R68101, GSTAMIDS Block 0	0	13180	17425	0	0	0	0	0	30605
R68102, GSTAMIDS Block 1	0	0	0	0	2013	8989	8980	Continuing	Continuing
S11500, ASTAMIDS	0	0	0	0	0	0	0	Continuing	Continuing

C. Acquisition Strategy: Airborne Stand-off Minefield Detection System (ASTAMIDS) will competitively select a System Component Development contractor and will award a sole source System Development and Demonstration (SDD) contract upon completion of System Component Development phase and Milestone Decision Authority (MDA) approval. Sole source production contract with multiple options are anticipated for the 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 Quadrupole Resonance Contract was awarded on a sole source basis. The Block I Systems Concept Contract was competitively awarded for the Concept Technology Development Phase. The Block I SDD contract may be competitively solicited with multiple production options.

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
606

D. Schedule Profile

	<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>
GSTAMIDS Block I MS B			2Q				
GSTAMIDS Block I MS C					4Q		
ASTAMIDS Component Advanced Development Initiation			2Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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 . GSTAMIDS, Blk I ; System concept Contract	C-CPFF	BAE	0	1537	1Q	1745	1Q	0		0	3282	3282
b . GSTAMIDS BLK I QR	C-CPFF	Quantum Magnetics, San Diego, CA	2185	6400	2Q	4868		0		0	13453	13530
c . ASTAMIDS	C-CPIF	TBD	0	0		0		8761	3Q	Continue	Continue	Continue
d . Plants Detecting Landmines	TBD	TBD	0	0		309	1-4Q	0		0	309	0
Subtotal:			2185	7937		6922		8761		Continue	Continue	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 . GSTAMIDS Blk I Eng. Support	MIPR	Various	0	779	3Q	1763	1Q	0		0	2542	0
b . ASTAMIDS	MIPR	Various	0	0		0		850	3Q	Continue	Continue	Continue
Subtotal:			0	779		1763		850		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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	430	3Q	724	3Q	0		0	1154	0
b . ASTAMIDS	MIPR	ATEC, Virginia	0	0		0		100	2Q	Continue	Continue	Continue
Subtotal:			0	430		724		100		Continue	Continue	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	267	1Q	441	1Q	0		0	972	0
b . Prog Mgmt GSTAMIDS	C-FP	Various	662	241	1-4Q	684	1-4Q	0		0	1587	0
c . ASTAMIDS	In-house	PM-MCD	0	0		0		459	1Q	Continue	Continue	Continue
Subtotal:			926	508		1125		459		Continue	Continue	Continue

Project Total Cost:			3111	9654		10534		10170		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603627A - Smoke, Obscurant and Target Defeating Sys-Adv Dev
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COST (In Thousands)	FY 2001 Actual	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	2432	10421	13590	6832	8821	0	42096
E78 TARGET DEFEATING SYS	0	0	2432	5927	6764	0	0	0	15123
E79 SMOKE/OBSCURANT SYSTEM	0	0	0	4494	6826	6832	8821	0	26973

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. This program element supports the Component Advanced Development and System Integration developmental phases of high performance obscuration materials and systems to increase the survivability of the combined armed forces and to complement weapon 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).

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
President's Previous Budget (FY 2002 PB)	0	0	2438
Appropriated Value	0	0	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	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	0	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-6
Current Budget Submit (FY 2003 PB)	0	0	2432

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603627A - Smoke, Obscurant and Target Defeating Sys-Adv Dev	PROJECT E78
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COST (In Thousands)	FY 2001 Actual	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	2432	5927	6764	0	0	0	15123

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 Component Advanced Development and System Integration developmental phases of high performance obscurant materials and systems to increase the survivability of the combined armed forces and to complement weapons systems. These programs develop systems to provide large area and projected obscurant across the spectrum from visual through infrared and millimeter wavelength radar. The technologies supported by this program enhance obscurant systems as combat multipliers. Distant smoke and obscurant developmental efforts will concentrate on the ability to place obscurant on threat forces. Instead of traditional self-defense procedures, this technology will transfer the visibility defeating materials directly to the threat and remove soldiers from direct-fire risk. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:
 No funds provided

FY 2002 Planned Program
 No funds provided

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603627A - Smoke, Obscurant and Target Defeating Sys-Adv Dev	PROJECT E78
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FY 2003 Planned Program

- 1432 DSS - (Distant Smoke System) Initiate contract planning for distant smoke or robotic obscuration systems.
- 1000 DSS - Initiate program planning and conduct a Milestone B for distant smoke or robotic obscuration systems.

Total 2432

<u>B. Other Program Funding Summary</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, A, Budget Activity 2, PE 0602622A, Project 552	3840	3529	3675	3940	3904	4461	4605	Continuing	Continuing

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

<u>D. Schedule Profile</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>
DSS - Milestone B, Program initiation			3Q				
DSS - Initiate RDTE competitive contract planning			1-2Q				
DSS - Award competitive RDTE contract			3-4Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
E78

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Robotic hardware development	C/CPFF	TBS	0	0		0		800	3-4Q	0	800	0
Subtotal:			0	0		0		800		0	800	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)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
E78

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award 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
a . DSS - Program management	In house	SBCCOM, APG, MD	0	0		0		1000	1Q	0	1000	0
b . DSS - Conduct Milestone and Initiate contract planning	In house	SBCCOM, APG, MD	0	0		0		632	1-3Q	0	632	0
Subtotal:			0	0		0		1632		0	1632	0

Project Total Cost:			0	0		0		2432		0	2432	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

COST (In Thousands)	FY 2001 Actual	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	46238	52074	11354	7618	2148	142796	148322	Continuing	Continuing
643 120MM CONVENTIONAL TANK AMMUNITION	27011	29737	5368	1651	2148	31864	32776	Continuing	Continuing
64A TRAJECTORY CORRECTABLE MUNITION	2884	0	0	0	0	0	0	0	2884
64B 105MM CONVENTIONAL TANK AMMUNITION	0	22337	2993	3978	0	0	0	0	29308
656 MULTI ROLE ARMAMENT AND AMMUNITION SYSTEM (MRAAS)	16343	0	0	0	0	110932	115546	Continuing	Continuing
694 MEDIUM CALIBER AMMUNITION	0	0	2993	1989	0	0	0	0	4982

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

The current cartridge development areas are in Kinetic Energy (120mm, M829E3), Training Ammunition (120mm, XM1002 and 25mm, M910E1), Anti-Personnel (105mm, XM1040 and 120mm, XM1028) and Smart Extended Range Munitions (105mm MRM), in support of weapon platforms. MRM, the Mid Range Muniton, will provide greater hit probability at extended ranges, both line-of-sight and beyond-line-of-sight, increased survivability and lethality for the Mobile Gun System and Future Combat System, and will expand the Maneuver Task Force Commander's battle space.

To date, five rounds of tank ammunition (M829A1, M829A2, M830A1, M865, and M831) have completed development under this program and entered/completed production.

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

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	49635	32986	30234
Appropriated Value	50139	52500	0
Adjustments to Appropriated Value		0	0
a. Congressional General Reductions		-426	0
b. SBIR / STTR	-1442	0	0
c. Omnibus or Other Above Threshold Reductions		0	0
d. Below Threshold Reprogramming	-1999	0	0
e. Rescissions	-460	0	0
Adjustments to Budget Years Since FY2002PB		0	-18880
Current Budget Submit (FY 2003 PB)	46238	52074	11354

Funding: FY2001 - Funds (\$1999) reprogrammed for higher priority programs.

Funding: FY2002 - Includes Congressional plus-ups MRM KE, MRM TM3, and GPS-ISU.

Funding: FY2003 - Decrease represents the elimination of funding for the Tank Extended Range Munitions (TERM)

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603639A - Tank and Medium Caliber Ammunition						PROJECT 643		
COST (In Thousands)		FY 2001 Actual	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	27011	29737	5368	1651	2148	31864	32776	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project develops ammunition for the Legacy tank force and the Future Combat System (FCS).

FY 2003 funding continues development of the 120mm XM1002 High-Explosive Anti-Tank, Multi-Purpose w/Tracer (HEAT-MP-T) training cartridge. This cartridge will be a ballistically similar, complementary training cartridge to the currently fielded M830A1 HEAT-MP-T service cartridge and will provide realistic training for Abrams tank crews. Tank training cartridges are required due to installation firing range restrictions on many types of service ammunition.

This program initiates development of the 120mm XM1028 anti-personnel canister cartridge. This cartridge meets an urgent requirement from the Commander-in-Chief, United States Forces Korea (USFK), to effectively provide rapid, lethal fire against massed assaulting infantry armed with hand-held anti-tank and automatic weapons at close range (500 meters or less). Upon muzzle exit, 900-1000 tungsten balls are expelled, similar in concept to a shotgun shell. Unlike previous anti-personnel tank cartridges, the XM1028 has no fuze and is intended to be a simple, low-cost, low-technology cartridge.

This project develops 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 many other program arrangements and agreements.

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

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

February 2002

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

0603639A - Tank and Medium Caliber Ammunition

PROJECT

643

FY 2001 Accomplishments:

- 4800 Finalized M829E3 Cartridge Configuration
- 9623 Procured 1163 M829E3s for Production Qualification Test (PQT) and provide government engineering support
- 4205 Initiated testing of PQT hardware for M829E3
- 4285 Finalized Producibility Improvements for M829E3
- 900 Completed risk reduction alternative propellant for M829E3
- 3198 XM1002 TP-T Cartridge projectile design, propellant and tracer development, and producibility completion

Total 27011

FY 2002 Planned Program

- 15000 Complete M829E3 Cartridge Development and Full Rate Production decision.
- 3000 Live Fire Testing M829E3 Cartridge
- 900 Vehicle Integration M829E3
- 2100 PQT Testing for M829E3
- 1337 Initial Operational Test and Evaluation for M829E3
- 5400 XM1002 TP-T Cartridge Engineering and Manufacturing Development (EMD) Phase 2, EMD contract award, conduct firing table tests, procure propulsion PQT components.
- 2000 Initial Cartridge/System Investigation (MRM).

Total 29737

FY 2003 Planned Program

- 1368 Fabricate PQT Prototypes for XM1002.
- 4000 Award Systems Development and Demonstration contract (XM1028)

Total 5368

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
643

<u>B. Other Program Funding Summary</u>	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	43738	45879	51471	43935	43022	40322	44642	Continuing	Continuing
E73400-M865 120mm KE Tank Trainer	105201	96809	103492	86266	86662	84000	95000	Continuing	Continuing
E78013-M829E3 120mm Tank KE	0	35348	40254	37717	43399	51644	52425	Continuing	Continuing
E78011 M1028 120mm Canister	0	0	3000	10000	7500	0	0	0	20500

C. Acquisition Strategy: FY 2003 funds support the continuing development of the XM1002 HEAT-MP-T training cartridge. This project will use a streamlined acquisition strategy, keeping costs low while meeting scheduled requirements. Integrated Product Teams (IPTs) are being used. The XM1002 will replace the current M831A1 training cartridge.

The acquisition strategy for the 120mm XM1028 anti-personnel canister cartridge has been approved. FY 2003 will initiate a two-year development effort for the XM1028. The contract award will be competitive and developed using performance specifications, leveraging canister cartridge work the government has accomplished to date.

Prior year funds (FY 2002 and earlier) funded development of the M829E3 APFSDS-T and MRM along with the XM1002. Operational Requirements Documents (ORDs) have been approved for the XM1028, XM1002, and M829E3.

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

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
643

D. Schedule Profile (continued)	<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>
Initial Operational Capability			3Q				
XM1002 TP-T CARTRIDGE							
Propellant Development	1-2Q						
Contractor projectile producibility/cost reduction	1-3Q						
Cartridge Design Freeze		3Q					
Procure PQT propellant/propulsion components	3-4Q	1-4Q	1-4Q				
Procure other PQT components/LAP		1-4Q	1-4Q				
Test PQT				1-3Q			
Type Classify				4Q			
XM1028 CANISTER CARTRIDGE							
Prototype Manufacturing				1-4Q			
Qualification testing				3Q			
Milestone C Type Classification				4Q			
MRM							
Award Study Contracts		3Q					

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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	9623	1Q	10700	1Q	0		0	51123	53135
b . ARDEC (M829E3)	MIPR	Picatinny Arsenal, NJ	43247	2289	1Q	2100	1-4Q	0		0	47636	0
c . Army Research Lab (M829E3)	MIPR	Aberdeen PG, MD	17299	1696	1Q	400	1Q	0		0	19395	0
d . Rheinmettal(M829E3)	SS-FFP	Germany	2100	900	2Q	0		0		0	3000	0
e . Batelle Northwest Lab (M829E3)	MIPR	Richmond, WA	4110	300	1Q	0		0		0	4410	0
f . Miscellaneous (M829E3)	MIPR	Multiple	1105	1345	1-2Q	100	2Q	0		0	2550	0
g . MRM (Integration Contract)	C-CPIF	TBD	0	0		1800	3Q	0		0	1800	0
h . XM1002 TP-T Ctg	FFP	ATK New Brighton, MN	600	2400	1Q	4015	2Q	768	1Q	751	8534	0
i . ARDEC (XM1002)	MIPR	Picatinny Arsenal, NJ	370	460	1Q	470	1-4Q	300	1-4Q	300	1900	0
j . Miscellaneous (XM1002)	MIPR	Multiple	30	390	1-2Q	100	2Q	50	1Q	50	620	0
k . XM1028 Canister Cartridge	FFP	TBD	0	0		0		2400	1Q	0	2400	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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
1. ARDEC (XM1028)	MIPR	Picatinny Arsenal, NJ	0	0		0		300	1-4Q	0	300	0
Subtotal:			99661	19403		19685		3818		1101	143668	53135

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	4200	1-2Q	7500	1-3Q	0		0	22687	0
b. Army Research Lab (M829E3)	MIPR	Aberdeen PG, MD	6315	1320	1-3Q	500	1-3Q	0		0	8135	0
c. Miscellaneous (M829E3)	MIPR	Multiple	11795	278	1-3Q	100	1-3Q	0		0	12173	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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
d . Miscellaneous (MRM)	MIPR	Multiple	0	0		150	2-4Q	0		0	150	0
e . Aberdeen Test Center (XM1002)	MIPR	Aberdeen PG, MD	0	0		375	1-3Q	0		500	875	0
f . Miscellaneous (XM1002)	MIPR	Multiple	0	100	1-4Q	100	1Q	50	1Q	50	300	0
g . Aberdeen Test Center (XM1028)	MIPR	Aberdeen PG, MD	0	0		0		1000	2Q	0	1000	0
Subtotal:			29097	5898		8725		1050		550	45320	0

Remarks: Testing includes all testing needed to support M829E3, MRM, XM1028 and XM1002 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	1300	1-4Q	700	1-4Q	0		0	10784	0
b . Miscellaneous (M829E3)	MIPR	Multiple	230	140	1-4Q	237	1-4Q	0		0	607	0
c . PM-TMAS (MRM)	MIPR	Picatinny Arsenal, NJ	0	0		50	1-4Q	0		0	50	0
d . PM-TMAS (XM1002)	MIPR	Picatinny Arsenal, NJ	0	270	1-4Q	340	1-4Q	200	1-4Q	0	810	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
643

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. PM-TMAS (XM1028)	MIPR	Picatinny Arsenal, NJ	0	0		0		300	1-4Q	0	300	0
Subtotal:			9014	1710		1327		500		0	12551	0

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

Project Total Cost:			137772	27011		29737		5368		1651	201539	53135
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603639A - Tank and Medium Caliber Ammunition						PROJECT 64B	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
64B 105MM CONVENTIONAL TANK AMMUNITION	0	22337	2993	3978	0	0	0	0	29308

A. Mission Description and Budget Item Justification: This project will develop 105mm ammunition for the Mobile Gun System (MGS) in the new Interim Brigade Combat Teams (IBCTs). Mid Range Munition (MRM) will provide both the MGS and Future Combat System Block 1 systems (FUE FY08) the ability to hit and kill all battlefield targets at extended ranges, both line of sight and beyond line of sight, increase survivability and lethality, and expand the Maneuver Task Force Commander's battle space. Global Positioning System (GPS) Anti-Jam device for munitions and platforms will allow U.S. forces to fight in environments where low cost GPS jammers exist. Development of the XM1040, 105mm anti-personnel canister cartridge responds to an urgent need of the MGS to immediately suppress dismounted infantry assaults in close/restricted terrain. This two-year development effort will leverage the technology of the preceding XM1028 120mm anti-personnel canister cartridge program. Like the XM1028, the XM1040 canister cartridge is envisioned to be similar in concept to a shotgun shell, expelling hundreds of metal balls upon muzzle exit. Unlike previous anti-personnel tank cartridges, the XM1040 will have no fuze and is intended to be a simple, low-cost, low-technology cartridge.

This project develops 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 many other program arrangements and agreements.

This project supports the Legacy-to-Objective transformation path of the Transformation Campaign Plan.

FY 2002 Planned Program

- 5600 Kinetic Energy (KE) System Engineering and System Design (MRM)
- 5400 KE Seeker Development and Algorithm Improvement (MRM)
- 2000 KE End- to- End Air Frame Fabrication and Test (MRM)
- 1437 KE Lethality and Propulsion Fabrication and Test (MRM)
- 3100 Tri-mode (TM3) System Engineering and System Design (MRM)
- 1900 TM3 Seeker Development and Algorithm Improvement (MRM)

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

0603639A - Tank and Medium Caliber Ammunition

PROJECT

64B**FY 2002 Planned Program (Continued)**

- 1900 TM3 Lethality and End to End Fabrication and Test (MRM)
- 1000 Anti-Jam GPS Preliminary Design and Analysis (MRM)

Total 22337

FY 2003 Planned Program

- 2993 Contract Award/Prototype Manufacturing (XM1040)

Total 2993

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603639A - Tank and Medium Caliber Ammunition	PROJECT 64B
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<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PAA SSN E24300: CTG, 105mm HEP-T, w/Fuze M393A3	0	5994	8100	8000	8000	0	0	0	30094
PAA SSN E22300: CTG, 105mm TP-T, M467A1	0	0	6000	10000	15000	21000	21000	Continuing	Continuing
PAA SSN E24400 CTG, 105mm Canister, M1040	0	0	0	3000	5000	2000	0	0	10000

C. Acquisition Strategy: FY2003 will initiate the development of the XM1040, 105mm anti-personnel Canister cartridge required for the Mobile Gun System (MGS) in the new Interim Brigade Combat Teams (IBCTs) with follow-on production upon completion. The contract award will be competitive and developed using performance specifications leveraging the technology of the preceding XM1028, 120mm anti-personnel Canister cartridge. This project will use a streamlined acquisition strategy, keeping costs low while meeting scheduled requirements. Integrated Product Teams (IPTs) will be used. The Operational Requirements Document (ORD) for this program has been approved.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Preliminary Design Reviews (KE/TM3) (MRM)		3Q					
Lethality Tests (KE/TM3) (MRM)		4Q					
End to End Airframe and Propulsion Tests (KE/TM3) (MRM)		4Q					
Seeker and Algorithm Tests (MRM)		3-4Q					
Preliminary Design Review (GPS)		3Q					
Critical Design Review (GPS)			1Q				
Contract Award (XM1040)			2Q				
Engineering Design Tests (XM1040)			3-4Q				
Prototype Manufacturing (XM1040)				1-4Q			
Qualification Testing (XM1040)				3Q			
Milestone C Type Classification (XM1040)				4Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
64B

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 Tech Systems	SS-CPFF	Clearwater, FL	0	0		9100	2Q	0		0	9100	0
b . Raytheon	SS-CPFF	Tucson, AZ	0	0		3800	2Q	0		0	3800	0
c . Electro-Radiation Inc.	SS-CPFF	Totowa, NJ	0	0		700	2Q	0		0	700	0
d . ARDEC	MIPR	Picatinny, NJ	0	0		2637	2-4Q	0		0	2637	0
e . Integration Contractor	C-CPFF	TBD	0	0		1800	2Q	0		0	1800	0
f . XM1040	C-CP	TBD	0	0		0		2000	2Q	2700	4700	0
g . ARDEC (XM1040)	MIPR	Picatinny, NJ	0	0		0		343	1-4Q	350	693	0
Subtotal:			0	0		18037		2343		3050	23430	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
64B

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 . Yuma Proving Ground (YPG)	MIPR	Yuma, AZ	0	0		200	2-4Q	0		0	200	0
b . Aberdeen Test Center (ATC)	MIPR	Aberdeen, MD	0	0		200	2-4Q	0		0	200	0
c . Army Research Lab (ARL)	MIPR	Aberdeen, MD	0	0		1250	2-4Q	0		0	1250	0
d . AMCOM	MIPR	Huntsville, AL	0	0		600	2-4Q	0		0	600	0
e . Various PM/Schools	MIPR	TBD	0	0		800	2-4Q	0		0	800	0
f . STRICOM	MIPR	Orlando, FL	0	0		500	2-4Q	0		0	500	0
g . Yuma Proving Ground (YPG) (XM1040)	MIPR	Yuma, AZ	0	0		0		250	3-4Q	578	828	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration/validation

0603639A - Tank and Medium Caliber Ammunition

64B

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	0		3550		250		578	4378	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-TMAS (MRM)	In House	Picatinny Arsenal, NJ	0	0		750	2-4Q	0		0	750	0
b . PM-TMAS (XM1040)	In House	Picatinny Arsenal, NJ	0	0		0		400	1-4Q	350	750	0
Subtotal:			0	0		750		400		350	1500	0

Project Total Cost:			0	0		22337		2993		3978	29308	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603639A - Tank and Medium Caliber Ammunition	PROJECT 694
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COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
694 MEDIUM CALIBER AMMUNITION	0	0	2993	1989	0	0	0	0	4982

A. Mission Description and Budget Item Justification: This project will develop Medium Caliber Ammunition for the Bradley Fighting Vehicle System (BFVS), as well as other systems using Medium Caliber Armaments. FY 2003 funds the development of the 25mm M910E1 Target Practice, Discarding Sabot w/Tracer (TPDS-T) cartridge. This project will provide a leverage opportunity and increase insight to resolve the existing issue of ineffective BFVS training since the 25mm M910 TPDS-T cartridge was type classified as the trainer for the M791 Armor Piercing, Discarding Sabot w/Tracer (APDS-T) tactical cartridge. The 25mm M910E1 will provide full range ballistic similitude to the current tactical round, the 25mm M919 Armor Piercing, Fin Stabilized, Discarding Sabot w/Tracer (APFSDS-T), as well as its predecessor, the M791 cartridge.

This project develops 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 many other program arrangements and agreements.

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

FY 2003 Planned Program

- 2993 Contract Award/Prototype Manufacturing

Total 2993

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
694

<u>B. Other Program Funding Summary</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>
PAA SSN E08210 , M919 25mm KE (Bradley)	36736	29792	0	0	0	26000	79000	0	171528
PAA SSN E08204, M910 25mm TPDS-T	16868	23980	16951	0	0	8821	8655	0	75275
PAA SSN E08203 M793 25mm TP-T	12241	15971	16136	443	0	6145	12293	0	63229

C. Acquisition Strategy: An acquisition strategy will be prepared in FY2002 for formal staffing. FY2003 will initiate the two year development of the 25mm M910E1 Target Practice, Discarding Sabot w/Tracer (TPDS-T) for the Bradley Fighting Vehicle System (BFVS) with follow-on production upon completion. The contract award will be competitive and developed using performance specifications. This project will use a streamlined acquisition strategy, keeping costs low while meeting schedule requirements. Integrated Product Teams (IPTs) will be used. The Operational Requirements Document (ORD) for this program has been approved.

<u>D. Schedule Profile</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>
25MM M910E1							
Contract Award			2Q				
Engineering Design Tests			1-3Q				
Prototype Manufacturing			3-4Q				
Qualification Testing				1-3Q			
Type Classification				4Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
694

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 . TBD (M910E1)	C-CP	TBD	0	0		0		2350	2Q	989	3339	0
b . ARDEC (M910E1)	Picatinny Arsenal, N.J.		0	0		0		450	1-4Q	450	900	0
Subtotal:			0	0		0		2800		1439	4239	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)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
694

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 . Yuma Proving Grounds (M910E1)	Yuma A.Z.		0	0		0		0		350	350	0
Subtotal:			0	0		0		0		350	350	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-TMAS (M910E1)	In House	Picatinny Arsenal, NJ	0	0		0		193	1-4Q	200	393	0
Subtotal:			0	0		0		193		200	393	0

Project Total Cost:			0	0		0		2993		1989	4982	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603653A - ADVANCED TANK ARMAMENT SYSTEM (ATAS)							
COST (In Thousands)	FY 2001 Actual	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	263436	100587	124108	43062	26092	4358	0	0	586589
B99 TANK & MEDIUM CALIBER ARMAMENTS	8490	1986	0	0	0	0	0	0	20810
C03 INTERIM ARMORED VEHICLE (IAV) FAMILY	254946	98601	124108	43062	26092	4358	0	0	565779

A. Mission Description and Budget Item Justification: The Tank and Medium Caliber Armaments is an Acquisition Category (ACAT) Level III project that involves several efforts. 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. It also supports the International Quadripartite Agreement among the U.S., France, Germany and the United Kingdom for cooperative development/interoperability efforts to reduce risks on Tank and Medium Caliber Ammunition Systems.

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)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	265681	101461	18051
Appropriated Value	268139	101461	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-874	0
b. SBIR / STTR	-245	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Reprogramming	-2000	0	0
e. Rescissions	-2458	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	106057
Current Budget Submit (FY 2003 PB)	263436	100587	124108

FY01 funding (\$2M) in Project DB99 reprogrammed to higher priority requirements.
 FY03 program funding increased to align IAV program with Army Cost Position (ACP) as approved at Nov 00 DAB.

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603653A - ADVANCED TANK ARMAMENT SYSTEM (ATAS)					PROJECT C03			
COST (In Thousands)		FY 2001 Actual	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	254946	98601	124108	43062	26092	4358	0	0	565779

A. Mission Description and Budget Item Justification: This project supports the development of the Family of Interim Armored Vehicles (IAV). An immediate need exists for a rapid 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 family includes: Infantry Carrier (ICV), Reconnaissance Vehicle (RV), Mobile Gun System (MGS), Mortar Carrier (MC), Commander's Vehicle (CV), Fire Support Vehicle (FSV), Engineer Squad Vehicle (ESV), Medical Evacuation Vehicle (MEV), Anti-Tank Guided Missile Vehicle (ATGM), and 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 2001 Accomplishments:

- 170040 Designed refinement of Interim Armored Vehicles. Modified the Canadian LAV III into the IAV family: electrical requirements, hull changes, weapon integration. Continued design work on NBCRV and MGS: gun turret drives, fighting compartment assembly, fire control target acquisition.
 - 22545 Initiated Funding Systems Developmental Testing. Performed gun and autoloader qualification testing, ballistic hull and turret testing, and coupon (armor) testing
 - 4500 Government Systems Engineering and Program Management
 - 41012 Produced 2 IAV RDT&E test articles for live-fire test (ICV and ATGM) and 10 Mobile Gun System (MGS) production-like prototypes for government Development Testing (DT) for and Limited User Testing (LUT)
 - 1660 GFE for test vehicles
 - 1295 Training devices
 - 13894 Tube-Launched, Optically-Tracked, Wire-Guided (TOW) Improved Munitions
- Total 254946

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

**0603653A - ADVANCED TANK ARMAMENT
SYSTEM (ATAS)**

PROJECT

C03**FY 2002 Planned Program**

- 40827 Continue vehicle design refinement and support to government testing. Complete design integration of NBCRV. Complete design work on MGS: gun turret drives, fighting compartment assembly, fire control target acquisition. Begin development of Block modifications: mounted mortar on Mortar Carrier, add-on armor, Integrated Electronic Technical Manuals (IETM). Complete weapon integration and design for ATGM and FSV.
- 48574 Partially fund Live Fire Test & Evaluation (LFT&E). Perform Development Testing: PQT, MC unique, Ammo Requal, MGS Unique, Remote Weapons Station (RWS) and Initial Operational Test & Evaluation (IOT&E) on all variants.
- 4200 Government Systems Engineering and Program Management
- 5000 Training Devices

Total 98601

FY 2003 Planned Program

- 37690 Complete Design Refinement efforts (Block Mods) and support to government testing
- 81918 Live Fire Test & Evaluation (LFT&E), Initial Operational Testing and Evaluation (IOT&E), and Production Qualification Test (PQT) on NBCRV and MGS
- 4500 Government Systems Engineering and Program Management

Total 124108

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603653A - ADVANCED TANK ARMAMENT SYSTEM (ATAS)	PROJECT C03
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<u>B. Other Program Funding Summary</u>	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	928427	657990	811831	980828	806704	761057	816922	2179000	7964759
PA, OPA, W61900 IAV APPLIQUE*	0	14944	15035	15016	14996	14983	14967	30000	119941

*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. The contracting effort was stalled in FY01 as a result of a contract stop order. The contract stop order was lifted 9 Apr 01, and subsequently, contract execution began. Development, Integration and Assembly efforts are ongoing with the production TDP for the Infantry Carrier Vehicle (ICV) to be available for final changes to the production vehicle in first quarter FY01. First vehicles, ICVs, are scheduled for delivery to the government beginning in Feb 02, with other IAV variants to follow-on this hardware buy. The RDTE portion of the IAV contract is Delivery Order 1. Production buys are/will be Delivery Order 2 and beyond.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Release of Draft Solicitation							
Final Receipt of White Paper Comments							
Release of Formal Request for Proposals							
Receipt of Proposals							
Milestone II	1Q						
Contract Award	1Q						
Final Production Technical Data Package Available (ICV)		1Q					
First Vehicle Delivery		2Q					
Begin Testing of Vehicles**		3Q	2Q				
First Unit Equipped (Battalion -)**		4Q	2Q				

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
C03

D. Schedule Profile (continued)	<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>
Planned Initial Operational Capability (IOC)**			3Q	1Q			
Planned Milestone III**			3Q	2Q			

**Reflects current program schedule, and schedule ranges briefed at MS II in November 00.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
C03

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	1028	170040	1Q	40827	2Q	37690	1Q	9430	259015	259015
b . GFE	Requisition	Various	0	1660	1-4Q	0		0		0	1660	1660
c . Prototype Development (10)	Firm Fixed Price	GM GDLS DG L.L.C	0	37220	3Q	0		0		0	37220	37220
d . Training Devices	MIPR	STRICOM, Orlando, FL	0	1295	3Q	5000	3Q	0		13820	20115	20115
e . TOW for Missile Development	Reprogram		0	13894		0		0		0	13894	13894
Subtotal:			1028	224109		45827		37690		23250	331904	331904

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)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
C03

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	2000	1Q	2300	1Q	2600	1Q	8100	18746	18746
b . Source Selection Board			2338	0		0		0		0	2338	2338
Subtotal:			6084	2000		2300		2600		8100	21084	21084

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 System Testing	MIPR	ATEC, APG, MD/Various	2015	13527	4Q	28719	2Q	0		0	44261	44261
b . Fort Lewis Concept Prove Out	MIPR	BCT Materiel Dev Cell, Ft Lewis, WA	1281	0		0		0		0	1281	1281
c . Procure Test Vehicles	Competitive/ CPAF	GM GDLS DG L.L.C.	0	3792	1Q	0		0		0	3792	3792
d . Live Fire Test & Evaluation	MIPR	ATC, ARL, AEC	0	3099		7340	2Q	6820	1Q	6842	24101	24101
e . Initial Operational Test & Evaluation	MIPR	OTC	0	5919		12515	2Q	38073	1-2Q	26426	82933	82933

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
C03

III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award 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 Systems Testing	MIPR	ATEC, APG, MD/VARIOUS	0	0		0		37025	1Q	1694	38719	38719
Subtotal:			3296	26337		48574		81918		34962	195087	195087

Remarks: *Congressionally Mandated Testing, Section 113C of the FY01 Authorization Act.

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	2505	2000	1Q	1400	1Q	1400	1Q	5200	12505	12505
b . Consultant Contract PM Support	Competitive/ Various	ICI, Camber, Warren, MI	1699	500	4Q	500	2Q	500	2Q	2000	5199	5199
Subtotal:			4204	2500		1900		1900		7200	17704	17704

Project Total Cost:			14612	254946		98601		124108		73512	565779	565779
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

COST (In Thousands)	FY 2001 Actual	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	13117	17331	20788	22758	22637	20140	20634	0	156015
610 FOOD ADV DEVELOPMENT	3292	3706	3907	4079	4089	4219	4228	0	32368
669 CLOTHING AND EQUIPMENT	3360	4788	4881	5533	5258	5529	5918	0	42164
C09 SOLDIER SUPPORT EQUIPMENT - AD	6465	8837	12000	13146	13290	10392	10488	0	81483

A. Mission Description and Budget Item Justification: This program element supports development for organizational equipment, improved individual clothing and equipment, and other combat service support equipment that will enhance soldier battlefield effectiveness, survivability, and sustainment. The program element also supports the development of personnel and cargo parachutes, airdrop containers, and other aerial delivery equipment to improve safety and efficiency of airborne operations. This Program Element includes a development project for food, packaging, and combat feeding equipment systems; an advanced development project for individual clothing and equipment items; and an advanced development project for a new generation of field service support items, shelters, tents, space heaters, showers, and latrines to advance the quality of life for field soldiers.

Supports the Legacy-to-Objective transition path of the Army's Transformation Campaign Plan (TCP).

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	13449	17482	20458
Appropriated Value	13574	17482	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-151	0
b. SBIR / STTR	-332	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-125	0	0
Adjustments Budget Years Since FY2002 PB	0	0	330
Current Budget Submit (FY 2003 PB)	13117	17331	20788

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603747A - Soldier Support and Survivability	PROJECT 610
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COST (In Thousands)	FY 2001 Actual	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	3292	3706	3907	4079	4089	4219	4228	0	32368

A. Mission Description and Budget Item Justification: This project funds the development of joint service food and combat feeding equipment designed to reduce the logistics burden and operation and support (O&S) costs of subsistence support to service personnel. Project supports development of rations and rapidly deployable field food service equipment. Project conducts demonstration and validation of improved subsistence and subsistence support items used to enhance soldier effectiveness and quality of life in all three Services, as part of an integrated DoD Food Research, Development, Test, Evaluation and Engineering Program. The Program is reviewed and validated twice annually by the DoD Food and Nutrition Research and Engineering Board as part of the Joint Service Food Program.

This project supports the Legacy-to-Objective transition path of the Army's Transformation Campaign Plan.

FY 2001 Accomplishments:

- 120 Developed, demonstrated, and evaluated improvements (safety, reliability, maintainability, efficiency, etc.) to field feeding systems as required by the services for integration into future procurements.
- 457 Assessed ten pieces of new/advanced food service equipment technologies and transitioned five to the Navy for procurement. Demonstrated and validated a convenience food logistics model to assist in the designing and managing freezer storage requirements for prepared foods aboard ships.
- 435 Completed design and conducted initial testing of the Air Force's all-electric field kitchen system.
- 1100 Completed testing of new Meals Ready to Eat (MRE) and Unitized Group Rations (UGR) and components targeted for FY03 production. Determined usage rates for UGR to reduce waste and cost. Completed initial prototype of eat-on-the-move shelf stable pocket sandwich.
- 105 Completed tracking of warfighter feeding patterns and performance data and transferred to database to establish initial baseline for future field feeding scenarios.
- 245 Completed investigation of high impact nanocomposite alternatives to current polymeric tray that will enhance durability, oven performance, and assure extended (3yr) shelf life. Initiated evaluation of these alternative trays.

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

PROJECT
610

FY 2001 Accomplishments: (Continued)

- 225 Downselected alternate chemical heater for the MRE that can be used on board Army pre -positioned ships, assessed production capability, and transitioned item to Defense Supply Center Philadelphia (DSCP) for production/MRE assembly.
- 505 Completed market investigation, conducted a make -or-buy analysis, and prepared the solicitation for initial development of the Multi-Temperature Refrigeration Container System (MTRCS) and Marine Corps 8X8X20 Refrigerated container that will support delivery of perishable rations on the battlefield.
- 100 Conducted sampling analysis of fielded Mobile Kitchen Trailers (MKTs) to support requirements development and evaluation of integrated technologies for the Battlefield Kitchen that will replace the MKT.

Total 3292

FY 2002 Planned Program

- 120 Develop and evaluate improvements to field feeding systems as required by the services for integration into future procurements.
- 1795 Continue improvement of individual and group rations to improve quality and warfighter acceptability. Complete right sizing of secondary menu components and transition to DSCP. Complete warfighter field test to determine ration type and effect on morale and performance. Initiate evaluation of institutional sized products integrated to reduce UGR weight and cube. Optimize monolayer nanocomposite polymeric tray to reduce cost and enhance producibility. Complete producibility evaluation of shelf stable sandwich. Complete Carbo Pack design for high energy expenditure warfighters.
- 275 Complete evaluation of nanocomposite-enhanced polymeric trays and investigate monolayered design/other tray enhancements to optimize cost, shelflife, utility in the field and survivability in frozen environments.
- 245 Continue evaluation of new/advanced shipboard food service equipment to improve quality and efficiency and the convenience food logistics model to optimize on-board freezer storage space.
- 400 Complete modification to the Air Force all-electric kitchen.
- 220 Continue storage studies and determine correlation and validation protocols for accelerated ration storage to reduce cost and ensure that operational requirements are met.
- 651 Fabricate initial system demonstration prototype (1 @ \$200K) of the Multi-Temperature Refrigeration Container System (MTRCS) and Marine Corps 8X8X20 Refrigerated Container and conduct initial testing to evaluate integrated technologies and assess integration risks.

Total 3706

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

PROJECT
610

FY 2003 Planned Program

- 413 Develop and evaluate improvements to field feeding systems as required by the services for integration into future procurements.
- 1393 Continue improvement of individual and group rations, conduct field evaluations to evaluate advances in food processing and packaging technologies to improve quality and warfighter acceptability. Complete evaluation of institutional sized pouches to replace cylindrical metal cans to reduce cost and ensure environmental compliance.
- 368 Prepare evaluation report on labor saving equipment and food technologies for the Navy. Continue evaluation of new shipboard food service equipment to improve galley efficiencies.
- 248 Develop feeding pattern database; design ration delivery system prototype; and conduct evaluation to optimize consumption patterns, enhance warrior performance, and reduce waste.
- 143 Complete storage studies and finalize predictive protocols for accelerated storage of rations; transition recommended changes to Defense Logistics Agency (DLA).
- 198 Design initial prototype automatic sanitation system to interface with the Marine Corps Rapid Deployment Kitchen that will minimize labor, water, and energy.
- 373 Refine design and initiate evaluation of Remote Unit Self Heating Meals for remote site group feeding that will reduce food service costs, weight, and labor by 90%.
- 469 Complete Multi-Temperature Refrigeration Container System (MTRCS) initial testing to evaluate integrated technologies and assess integration risks. Demonstrate that MTRCS technology performs successfully in the intended operational environment and is ready for transition into System Development Demonstration (SDD).
- 302 Evaluate performance of advanced technologies that will improve field feeding sanitation in remote feeding operations.

Total 3907

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

PROJECT
610

B. Other Program Funding Summary	<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, 0604713.548, Military Subsistence System	1694	1846	1941	2051	2051	2078	2077	Continuing	Continuing
OPA3, M65803, Kitchen, Containerized, Field	6077	4250	11158	7449	7203	8079	0	0	51248
OPA 3, M65802, Sanitation Center, Field Feeding	4323	2771	8954	8928	8986	8973	8980	Continuing	Continuing
OPA 3, M65801, Refrigerated Containers	1466	1066	0	0	0	0	0	0	3459

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

D. Schedule Profile	<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 design of Air Force all electric field kitchen system.	4Q						
Initiate Testing of Multi-Temp Refrigeration Container System (MTRCS) integrated technologies.		4Q					
Demonstrate that MTRCS Technology performs in the intended operational environment.			4Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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	SBCCOM, Natick, MA	15755	1560	1-4Q	1650	1-4Q	1650	1-4Q	Continue	Continue	Continue
b . Joint Service Food/Combat Feeding Equipment	Contracts	Various	5004	1027	1-4Q	1346	1-4Q	1523	1-4Q	Continue	Continue	Continue
Subtotal:			20759	2587		2996		3173		Continue	Continue	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)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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	620	1-4Q	Continue	Continue	Continue
Subtotal:			2181	569		562		620		Continue	Continue	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	SBCCOM, Natick, MA	1230	136	1-4Q	148	1-4Q	114	1-4Q	Continue	Continue	Continue
Subtotal:			1230	136		148		114		Continue	Continue	Continue

Project Total Cost:			24170	3292		3706		3907		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603747A - Soldier Support and Survivability					PROJECT 669			
COST (In Thousands)	FY 2001 Actual	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	3360	4788	4881	5533	5258	5529	5918	0	42164	

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. This project supports the Legacy-to-Objective transition path of the Army's Transformation Campaign Plan.

FY 2001 Accomplishments:

- 240 Developed performance specification and prepared for contract award for initial development for the Advanced Bomb Suit (ABS).
 - 1427 Completed contract phase I, conducted initial developmental testing on phase I prototypes, downselected to a single contractor, and awarded contract phase II to initiate laser protection integration for the Military Eye Protection System, (MEPS).
 - 72 Investigated advanced materials and designs in preparation for obtaining concept approval and Milestone B decision for the Integrated Head Protection, (IHP).
 - 495 Completed manufacturing methods development, conduct production scale-up of user evaluation items, and commence user evaluation and survey for the Cold Weather Canteen, CWC.
 - 661 Refined concept demonstration and obtain constructive user feedback Advanced Combat Uniform, (ACU).
 - 90 Obtained concept approval and solicitation release for the Modular Combat Boot, (MCB).
 - 88 Procured and tested modified chemical protective undergarments (mCPU) to validate the concept of using MCPUs as an interim solution until completed development for the Joint Protective Air Crew Ensemble, (JPACE).
 - 287 Provided in-house engineering support services, computer services, conduct technical and program reviews.
- Total 3360

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

0603747A - Soldier Support and Survivability

PROJECT

669**FY 2002 Planned Program**

- 1158 Military Eye Protection System, complete contract phase II, procure test items and commence user evaluation.
 - 220 Modular Combat Boot, obtain test items and initiate technical testing and extended user evaluation.
 - 245 Improved Bivy Cover, demonstrate application of advanced materials and designs for an Improved Bivy Cover for the Modular Sleep System.
 - 2835 Advanced Combat Uniform, continue design integration and fabricate 9-12 prototype systems, conduct controlled user evaluation, obtain feedback, conduct early configuration management planning, and achieve Milestone A/B.
 - 330 Provide in-house engineering support services, computer services, conduct technical and program reviews.
- Total 4788

FY 2003 Planned Program

- 310 Modular Combat Boot, complete user evaluation and present results to the Army Uniform Board.
 - 3731 Advanced Combat Uniform, complete developmental contract phase III and complete initial testing.
 - 476 Improved Small Arms Protective Insert, investigate lighter, more producible ceramic materials for increased ballistic protection and reduced weight in the Small Arms Protective Insert for the Interceptor Body Armor System.
 - 364 In-house engineering support services, computer services, conduct technical and program reviews.
- Total 4881

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

PROJECT
669

<u>B. Other Program Funding Summary</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, 0604713.L40, Clothing and Equipment	5117	4522	4651	5209	5193	5478	5571	Continuing	Continuing
OMA, 121017, Central Funding and Fielding	79590	90013	73401	80941	113533	114101	114672	Continuing	Continuing

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.

<u>D. Schedule Profile</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>
Life Cycle Systems Review	2-4Q	2-4Q	2-4Q	2-4Q	2-4Q	2-4Q	2-4Q

A Life Cycle Systems Review is held during the 2nd and 4th quarter of each fiscal year.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603747A - Soldier Support and Survivability	PROJECT 669
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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 . Clothing & Individual Equipment	MIPR	SBCCOM, Natick, MA	509	748	1-4Q	1494	1-4Q	1578	1-4Q	Continue	Continue	Continue
b . Clothing & Individual Equipment	Contracts	Various	2268	2167	1-4Q	2250	1-4Q	1964	1-4Q	Continue	Continue	Continue
Subtotal:			2777	2915		3744		3542		Continue	Continue	Continue

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	50	50	1-4Q	50	1-4Q	50	1-4Q	Continue	Continue	Continue
b . Misc Support	Contract	Various	0	0		0	1-3Q	0	1-4Q	0	0	0
Subtotal:			50	50		50		50		Continue	Continue	Continue

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

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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	108	1-4Q	664	1-4Q	925	1-4Q	Continue	Continue	Continue
Subtotal:			140	108		664		925		Continue	Continue	Continue

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	285	287	1-4Q	330	1-4Q	364	1-4Q	Continue	Continue	Continue
Subtotal:			285	287		330		364		Continue	Continue	Continue

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..

Project Total Cost:			3252	3360		4788		4881		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603747A - Soldier Support and Survivability					PROJECT C09			
COST (In Thousands)	FY 2001 Actual	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	6465	8837	12000	13146	13290	10392	10488	0	81483	

A. Mission Description and Budget Item Justification: This project supports development of critical soldier support systems such as shelters, showers, latrines, heaters, and other combat service support equipment that will improve unit sustainability and combat effectiveness. Project supports demonstration and validation of aerial delivery systems for personnel and equipment, with emphasis on reduced incidence of injuries, improved safety and accuracy, and increased survivability of aircraft, personnel, and equipment. Project also supports the development of tactical rigid-wall shelters which provide highly mobile, joint service platforms for the digitization of the battlefield, housing of critical vehicle-mounted battlefield systems, medical care capabilities and high tech maintenance.

This project supports the Legacy-to-Objective transition path of the Army's Transformation Campaign Plan.

FY 2001 Accomplishments:

- 2021 Continued Testing and Evaluation on the Dual Row Airdrop Capability (DRAC). Initiated load certification.
- 1200 Procured initial test items for the DRAC (40 @ \$30K ea).
- 570 Conducted Milestone B program initiation for Enhanced Container Delivery Capability (ECDC). Conducted design verification and systems integration testing.
- 160 Developed test items for the ECDC (16 @ \$10K ea).
- 500 Conducted market investigation for the Containerized Batch Laundry (CBL), and initiated development and design of prototypes. Demonstrated that CBL technologies perform successfully in the intended operational environment. Transitioned into System Development Demonstration (SDD).
- 371 Conducted Market Survey, prepared Milestone B decision package for Mobile Integrated Remains Collection System (MIRCS).
- 1010 Conducted initial market investigation for development of Cargo Bed Covers (CBC), for High Mobility Trailer Variants. Initiated CBC Type I and II Pre-Planned Product Improvement efforts.
- 633 Conducted Market Investigation for Extraction Parachute Jettison System (EPJS)- Heavy. Completed Milestone B package.

Total 6465

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

0603747A - Soldier Support and Survivability

PROJECT

C09**FY 2002 Planned Program**

- 700 Complete Market Investigation and consolidate existing data to support a Milestone B Decision on Low Cost Aerial Delivery Capability. Conduct initial testing to evaluate integrated technologies and assess integration risks.
- 450 Conduct Market Investigation, conduct MS B, prepare and award developmental contract, and initiate prototype design of the Clothing Repair System (CRS).
- 700 Conduct Milestone B decision and develop initial test prototypes of Mobile Integrated Remains Collection System(MIRCS) (2 @ \$350K ea.) to demonstrate subsystem interoperability and reduce integration risks.
- 1270 Complete DRAC single ship and formation drop evaluations.
- 800 Award contracts for EPJS(H) components and purchase safety of flight test items to conduct initial testing to assess risk.
- 900 Conduct EPJS(H) electronic emissions evaluation. Prepare and conduct Safety of flight evaluations at Edwards Air Force Base on EPJS (H) components.
- 750 Award development contract for Enhanced Container Delivery Capability (ECDC) components and purchase initial developmental test items.
- 700 Prepare and conduct initial testing on the ECDC to evaluate integrated technologies and assess risk. Transition to SDD.
- 1576 Conduct Market Investigation, prepare documentation for Milestone B and prepare contract for prototype development of the Rapid Rigging/De-rigging Air Drop System (RRDAS).
- 991 Conduct MS B and award initial RDT&E contract for Cargo Bed Covers for High Mobility Trailer Variants. Initiate Cargo Bed Cover Type III/IV P3I effort.

Total 8837

FY 2003 Planned Program

- 700 Fabricate prototype of Clothing Repair System prototypes (2 @ \$350K ea) and conduct initial evaluation of operational suitability. Transition to SDD.
- 1186 Conduct Market Investigation for subsystems of the Battlefield Hygiene System and award development contract to integrate demonstrated subsystems and components.
- 1175 Complete MIRCS System Integration, complete initial development testing and transition to SDD.
- 1150 Purchase initial developmental test items and data items for EPJS(H).

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

February 2002

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

0603747A - Soldier Support and Survivability

PROJECT

C09

FY 2003 Planned Program (Continued)

- 950 Prepare for and conduct testing of EPJS(H) as a complete integrated system.
- 1500 Conduct market investigation, complete Milestone B, and award initial RDT&E effort for the Ballistic Protection System.
- 4275 Conduct initial Safety of Flight and Emissions Testing on the RRDAS. Evaluate systems and technologies in the intended operational environment. Prepare for transition to SDD.
- 500 Procure test items for the RRDAS (5 @ \$100K ea.).
- 564 Conduct market investigation, complete Milestone B and award initial RDT&E effort for Ammunition Solar Cover.

Total 12000

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

PROJECT
C09

<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, 0604713.C40, Soldier Support Equipment	8636	8643	13367	14059	14418	11145	11159	Continuing	Continuing
M82706, Containerized Latrine System	0	1021	666	870	0	0	0	0	2557
M82708, Containerized Batch Laundry	0	0	3008	3997	3962	0	0	0	10967
MA7805, Universal Static Line	3934	0	0	0	0	0	0	0	4910

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

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete Dual Row Airdrop System single ship and formation drop evaluations.		2Q					
Initiate MIRCS Market Survey	1Q						
Complete Milestone B for MIRCS		2Q					
Award R&D Contract to fabricate MIRCS prototypes		2Q					
Fabricate Prototype MIRCS		4Q					
Conduct initial system tests on MIRCS.			4Q				
Conduct MS B and award RDT&E contract for Cargo Bed Cover High Mobility Trailer variant		4Q					
Conduct MS B on Extraction Parachute Jettison Device - Heavy	4Q						
Conduct MS B on Enhanced Container Delivery Capability (ECDC)	3Q						
Conduct Safety of Flight and Emissions Testing on the EPJS - Heavy		2Q					
Conduct Testing on the ECDC and transition to SDD		4Q					
Conduct Testing on the EPJS - Heavy as a system			3Q				
Conduct Safety of Flight and Emissions Testing on RRDAS			3Q				

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603747A - Soldier Support and Survivability

PROJECT
C09

D. Schedule Profile (continued)	<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>
Conduct MS B and award development contract for CRS		3Q					
Conduct testing of CRS concept			4Q				
Conduct Milestone B on Ballistic Protection System			2Q				
Conduct Milestone B on Ammunition Solar Cover			2Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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	SBCCOM (NRDEC), Natick, MA	14424	1930	1-4Q	2880	1-4Q	3564	1-4Q	Continue	Continue	Continue
b . Soldier Support Equipment	Contracts	Various	9927	2624	1-3Q	3456	1-4Q	3903	1-4Q	Continue	Continue	Continue
Subtotal:			24351	4554		6336		7467		Continue	Continue	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)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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	3083	1-4Q	Continue	Continue	Continue
Subtotal:			4250	1253		1496		3083		Continue	Continue	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	2166	658	1-3Q	1005	1-4Q	1450	1-4Q	Continue	Continue	Continue
b . Project Management Support	In-House	SBCCOM, Natick, MA	361	0		0		0		0	361	0
Subtotal:			2527	658		1005		1450		Continue	Continue	Continue

Project Total Cost:			31128	6465		8837		12000		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603766A - Tactical Support Development - Adv Dev (TIARA)						PROJECT 907		
COST (In Thousands)		FY 2001 Actual	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	16605	16392	17396	16369	15248	16888	Continuing	Continuing

A. Mission Description and Budget Item Justification: 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, exploiting critical data for near real time integration into the appropriate tactical echelon.

Capabilities developed will be incorporated into the Tactical Exploitation System (TES), Division TES (DTES), TES -Light, and Distributed Common Ground Station - Army (DCGS-A). 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 2001 Accomplishments:

Not Applicable.

FY 2002 Planned Program

- 13304 Pursue technology to refine the common baseline, fully exploiting national and theater capabilities to meet emerging worldwide contingency scenarios. Effort includes emitter mapping, phased array communications, and Measurement and Signature Intelligence (MASINT) processing initiatives.
- 3301 Support ASPO program management for administrative activities.

Total 16605

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
907

FY 2003 Planned Program

- 13059 Continue to pursue technology refining the common baseline, fully exploiting national and theater capabilities to meet emerging worldwide contingency scenarios. Effort includes emitter mapping, phased ray communications, and MASINT processing initiatives.
- 3333 Continue support to ASPO program management for administrative activities.

Total 16392

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	0	16749	16431
Appropriated Value	0	16749	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-144	0
b. SBIR / STTR	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	0	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-39
Current Budget Submit (FY 2003 PB)	0	16605	16392

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
907

<u>C. Other Program Funding Summary</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, A Budget Activity 5	0	0	0	0	0	0	0	0	0
PE 0604766A TES/DCGS-A (TIARA)	57867	59693	56662	60070	48853	42460	42284	Continue	Continue
RDTE, A Budget Activity 7	0	0	0	0	0	0	0	0	0
PE 0305208A, Project 956 CIG/SS (JMIP)	7839	72095	15683	15911	15625	45089	12933	Continue	Continue
Other Procurement Army, OPA-2	0	0	0	0	0	0	0	0	0
BZ7315 TENCAP (TIARA)	12735	0	0	0	0	5933	0	0	23019
BZ7316 CIG/SS (JMIP)	2807	2591	2617	2656	2713	999	64753	Continue	Continue
BZ7317 Tactical Surveillance System (TIARA)	0	33410	17576	43675	18880	6008	7039	Continue	Continue

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.

<u>E. Schedule Profile</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 Emitter Mapping Initiative		4Q					
MultiSensor SIGINT Pulse Level Correlation Initiative			1Q	4Q			
Phased Ray Comms Initiative		2Q				4Q	
MASINT Product Processing Initiative		2Q			1Q		

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration/validation

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

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		13304	1-4Q	13059	1-4Q	Continue	Continue	Continue
Subtotal:			0	0		13304		13059		Continue	Continue	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 . ASPO	In House	ASPO, Alexandria, VA	0	0		3301	1-4Q	3333	1-4Q	Continue	Continue	Continue
Subtotal:			0	0		3301		3333		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603766A - Tactical Support Development - Adv Dev (TIARA)	PROJECT 907
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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
			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:			0	0		16605		16392		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603774A - Night Vision Systems Advanced Development						PROJECT 131		
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
131 NIGHT VISION SYS A/DEV	14831	8675	11694	5366	5320	5475	5462	0	65477

A. Mission Description and Budget Item Justification: This program currently addresses five initiatives: 1) Product improvements to current Night Vision Electro-Optic devices/systems supporting the Interim Brigade Combat Team (IBCT) and the Counteroffensive Force and Counter Attack Force. The improvements to equipment within the BCT will increase the survivability of the host platforms and demonstrate potential candidates for the Objective Force. The efforts are centered around the demonstration of improved stealthiness (sensors on a mast) and improved target acquisition performance through the use of aided target recognition (ATR). 2) Demonstrate the producibility of the new uncooled thermal technology needed for the next generation of night vision equipment and develop a common thermal engine that can be used in multiple platforms. The project is focused on not only improving the performance and sustainability of the Counter Attack, IBCT and Objective Force but also using horizontal technology integration to reduce sensor costs. This technology will provide unmanned platforms (ground and airborne) with an unmatched capability in a small, lightweight, very low power package. Initial applications for uncooled detectors are the Thermal Weapon Sight, head tracked night vision viewers, and the enhanced night vision goggle. Long-term applications are a common EO/IR sensor for the Objective Force networked sensors unmanned platforms. The technical focus is to demonstrate the producibility of these detectors and their ability to withstand laser damage. 3) Demonstration of next generation night vision devices for multiple applications. These technologies will be focused on improving the lethality, survivability and versatility of the IBCT and Objective Forces. FY 02/03 funds will be used to demonstrate “ See Thru the Wall (STTW)” systems which will allow units of action in Military Operations in Urban Terrain (MOUT) scenarios to detect objects and personnel in buildings and through walls significantly improving their force effectiveness and survivability. 4) Develop robotic sensor technology strategies to support the emerging Objective Force requirements. 5) Component Advanced Development (CAD) (Milestone A) phase of the Tactical SIGINT (TSP) system. TSP is a Unmanned Aerial Vehicle (UAV) mounted SIGINT/EW sensor that detects enemy and gray radio frequency (RF) emitters. TSP will provide the Land Commander with a deep looking SIGINT/EW system capable of detecting, identifying, locating and geo-locating RF emitters throughout the Area of Operation (AO). The TSP electronic emitter information will be fused with other sensors [i.e., Prophet, Electro-optical/ Infrared (EO/IR), Moving Target Indicator (MTI), Synthetic Aperture Radar (SAR), Corps Aerial Common Sensor (ACS)] to provide precise targeting information in near real time (NRT). The TSP Component Advanced Development (CAD) phase in FY02/03 focuses on demonstrating payloads that could satisfy the objective system requirements and identify which requirements will be pursued during the System Development and Demonstration (SDD) Phase. The TSP System Development and Demonstration efforts are covered under PE/Project 35204/11B beginning in FY04.

This project supports the Legacy to Objective transition path (for Night Vision) and the Objective transition path (for TSP) of the Transformation Campaign Plan.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration/validation**0603774A - Night Vision Systems Advanced
Development****131****FY 2001 Accomplishments:**

- 985 Developed and demonstrated advanced capabilities for Second Generation Forward Looking Infrared (FLIR) B-Kit, to include multi-level laser hardening
- 453 Completed Multifunction Laser B Kit and operational functions analysis
- 795 Initiated development of Long Range Advanced Scout Surveillance System (LRAS3) on a telescopic mast
- 439 Conducted analysis and evaluation of the potential for an uncooled FLIR B-Kit for Objective Individual Combat Weapon (OICW) and Objective Crew Served Weapon (OCSW)
- 313 Initiated and completed the development of head tracked commanders thermal sensor
- 2248 Initiated demonstration and evaluation of Enhanced Night Vision Goggle (ENVG) and enabling technologies
- 1752 Initiated demonstration and evaluation of Aviation Night Vision Goggle (ANVG) (14 test units)
- 910 Conducted cost benefit analysis for Tactical Unmanned Aerial Vehicle (TUAV) Payloads
- 935 Prepared for and conducted SSEB to award Component Advanced Development (CAD) contract for Tactical SIGINT Payload (TSP)
- 5401 Awarded CAD Contract for TSP to three contractors to develop varying capability SIGINT payload design approaches on a UAV
- 600 UAV quieting

Total 14831

FY 2002 Planned Program

- 702 Evaluate alternative "thru wall" devices to support USAIC ORD development and develop thru wall technology strategy
- 1969 Develop laser protection and assess production and performance issues for uncooled detectors
- 742 Complete analysis and evaluation of the potential for an uncooled FLIR B-Kit for multiple manned and unmanned platform applications.
- 203 Initiate the common multi sensor fusion (acoustic, seismic, EO/IR) Robotic Sensors technology strategy to support network sensors for the Objective Force concept
- 1096 Complete development and demonstrate Long Range Advanced Scout Surveillance System/Lightweight Laser Designator Rangefinder (LRAS3/LLDR) on a telescopic mast (and interface with available Aided Target Recognition (ATR)) to support demonstration of LRAS3 P3I and IAV P3I
- 3963 Continue TSP CAD development of varying capability SIGINT payload design approaches on a UAV by contractors

Total 8675

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
131

FY 2003 Planned Program

- 501 Demonstrate thru-wall technologies for urban tactical environment
- 3509 Continue development laser protection and assess production and performance issues for uncooled detectors
- 700 Develop Robotic Sensors technology strategy to support Objective Force organic sensor strategy.
- 3515 Complete TSP CAD which evaluates SIGINT payload design approaches on a UAV
- 1085 Conduct demonstration of payload and systems integration
- 1434 Conduct operational assessment of payload and systems integration and flight demonstration/s
- 950 Prepare for and conduct Source Selection Evaluation Board (SSEB) for Tactical SIGINT Payload Mile Stone B System Development and Demonstration (SDD) contract

Total 11694

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY02 PB)	14831	12756	11721
Appropriated Value	14968	8756	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-81	0
b. SBIR / STTR	0	0	0
c. Omnibus or Other Above Threshold Reprogramming	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-137	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-27
Current Budget Submit (FY 2003 PB)	14831	8675	11694

Change Summary Explanation:

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
131

FY 2002 Congressional cut of \$4M from TSP efforts; \$0.081M General Congressional Reduction.

C. Other Program Funding Summary	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	24935	22993	22333	22434	23718	23594	24585	Continue	Continue
PE 0603710A/Night Vision Advanced Development RDTE, A Budget	41598	49389	36494	39336	36831	37170	39910	Continue	Continue
PE 0604710A/Night Vision Devices Engineering Development RDTE	28722	27376	32328	21625	18904	18013	18336	Continue	Continue
OPA2 K38300 LRAS3	45733	44193	49927	51194	51068	43341	1776	40000	372269
WTCV G80717 M2A3/M3A3 Bradley	55473	58223	46426	42641	46671	31765	32824	0	359299
WTCV GA0750 Abrams Upgrade	49160	52922	18741	0	0	0	0	0	186019
WTCV GA0730 M1A2 SEP	26828	12450	18421	25246	33145	53870	63263	Continue	Continue
RDTE (PE 64270 L12) - (includes Prophet funding in FY 00-03)	2939	1731	9289	23133	10180	12122	15067	Continue	Continue
OPA2 BA0330 TUAUV	47441	56860	84290	108893	62788	184442	186298	Continue	Continue
OPA2 W61900 IAV	72225	74090	65294	133996	87886	98705	82593	Continue	Continue
RDTE (PE 35204 11B) - Tactial SIGINT Payload (TSP) Development	0	0	0	5868	23711	20107	11850	Continue	Continue

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
131

D. Acquisition Strategy: The advances and improvements for Second Generation FLIR (SGF), ANVG, ENVG and Multifunction Laser activities utilize various cost reimbursement development contracts that were and will continue to be competitively awarded using best value source selection procedures. Tactical SIGINT Payload (TSP) Component Advanced Development phase has been competitively awarded contracts to three contractors. Based on rooftop demonstration, one or more of the contractor's options will be exercised for flight demonstration.

<u>E. Schedule Profile</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>
Tactical SIGINT Payload (TSP) CAD Decision Review	1Q						
TSP CAD Contract	3-4Q	1-4Q	1-4Q				
Conduct TSP Rooftop Demonstrations		4Q	1Q				
Conduct TSP Flight Demonstrations			3-4Q				
TSP MS B Decision				2Q			
Multi Sensor B Kit efforts		2-4Q	1-4Q	1-4Q	1Q		
Multi Sensor B Kit Milestone B					2Q		
Common Thermal Engine efforts		2-4Q	1-4Q	1-4Q	1-4Q	1Q	
Common Thermal Engine Milestone B						2Q	
Short Range Thru Wall Efforts		2-4Q	1-4Q	1Q			
Short Range Thru Wall Milestone B				2Q			
Imaging Thru Wall Technology efforts			1-4Q	1-4Q	1Q		
Imaging Thru Wall Technology Milestone B					2Q		
Long Range Imaging Thru Wall Technology efforts				1-4Q	1-4Q	1Q	
Long Range Imaging Thru Wall Technology Milestone B						2Q	
Unmanned Ground Vehicle Thru Wall Technology efforts				1-4Q	1-4Q	1-4Q	1Q
Unmanned Ground Vehicle Thru Wall Technology Milestone B							2Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603774A - Night Vision Systems 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	2326	2326
b . SR2P	MIPR	NVESD	658	0		0		0		0	658	658
c . FLIR Develop/Integrate	Various	Various	1938	0		0		0		0	1938	1938
d . Multifunction Laser Design	C/CP	Raytheon, Dallas, TX	687	219	2Q	0		0		0	906	906
e . ATR/ATC Activities	MIPR	Various	462	0		0		0		0	462	462
f . TUAV Laser Rangefinder	C/CP	Versitron, Santa Rosa, CA	300	0		0		0		0	300	300
g . Large Format Array Uncooled Thermal Sight	C/CP	To Be Selected	0	0		360	2Q	0		0	360	360
h . LRAS3 /LLDR Telescopic Mast Demo	MIPR	NVESD	0	685	1-2Q	1096	1-2Q	0		0	1781	1781
i . Uncooled B-Kit Evolution	C/CP	ADC, Newington, VA	0	372	1-2Q	322	1-2Q	0		0	694	894
j . Head Tracked Commander's Sight	C/CP	Various	0	223	1-2Q	0		0		0	223	223

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603774A - Night Vision Systems 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
k . Demo and eval of ENVG technology	Various	Various	0	1778	2-3Q	0		0		0	1778	1778
l . Demo and eval of ANVG	Various	Various	0	1320	2-3Q	0		0		0	1320	1320
m . Cost Benefit Analysis TUAV	MIPR and C/FP	TRAC-WSMR, NM and TBE, Huntsville, AL	0	910	2-3Q	0		0		0	910	910
n . Thru-wall technology demonstration	TBD	TBS	0	0		655	1-2Q	501	1-2Q	0	1156	1156
o . Develop Robotic Sensor technology strategies	TBD	TBS	0	0		200	1-2Q	700	1-2Q	0	900	900
p . Laser protection and uncooled detectors	TBD	TBS	0	0		1706	2Q	3145	1Q	Continue	Continue	Continue
q . Award CAD Contract for TSP	C/CPFF	Applied Science Technologies, BAE, and Raytheon	0	4736	3-4Q	3963	2Q	3500	1Q	0	12199	12199
r . UAV Quieting, Etc. TSP	MIPR	TUAV Proj Office, Redstone Arsenal, AL	0	900	4Q	0		0		0	900	900
s . Demo of payload & systems integration TSP	TBD	TBS	0	0		0		1085	1Q	0	1085	1085

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603774A - Night Vision Systems 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
t . Land Warrior			3750	0		0		0		0	3750	3750
Subtotal:			9136	12128		8302		8931		Continue	Continue	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	424	508	1Q	347	1Q	340	1Q	Continue	Continue	Continue
b . Matrix Support	MIPR	HQ, CECOM	0	400	1Q	0		700	1Q	Continue	Continue	Continue
c . Engineering Support	FFP	MITRE; McLean, VA	0	500	1Q	0		265	1Q	Continue	Continue	Continue
Subtotal:			424	1408		347		1305		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603774A - Night Vision Systems Advanced Development

PROJECT
131

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	308	308
b . FLIR Demos and Evals	MIPR	Various	836	0		0		0		0	836	836
c . ENVG Demos and Evals	MIPR	Various	0	105	2-3Q	0		0		0	105	105
d . HT Command Site Eval	MIPR	Various	0	90	2Q	0		0		0	90	90
e . ANVG Test Plan and Flight Support	MIPR	Various	0	480	2Q	0		0		0	480	480
f . ANVG Simulation/Field Eval	MIPR	Various	0	100	2Q	0		0		0	100	100
g . Operational Assessment of TSP Rooftop & Flight Demo/s	MIPR	To Be Selected	0	0		0		900	1-3Q	0	900	900
Subtotal:			1144	775		0		900		0	2819	2819

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603774A - Night Vision Systems Advanced Development

PROJECT
131

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	24	1Q	Continue	Continue	Continue
b . Program Management		PM, Signals Warfare	0	400	1Q	0		534	1Q	Continue	Continue	Continue
Subtotal:			102	520		26		558		Continue	Continue	Continue
Project Total Cost:			10806	14831		8675		11694		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

COST (In Thousands)	FY 2001 Actual	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	12880	35030	9331	11694	9623	5125	4927	0	93374
035 NATIONAL DEFENSE CNTR FOR ENVIRO EXCELLENCE-NDCEE	4708	4863	4856	4962	4950	4941	4927	0	38971
04E ENVIRONMENTAL RESTORATION TECH VALIDATION	0	2608	4264	5427	3317	0	0	0	15616
04F COMMERCIALIZATION OF TECH TO LOWER DEFENSE COSTS	8172	5559	0	0	0	0	0	0	13731
04J ENVIRONMENTAL COMPLIANCE TECHNOLOGY VALIDATION	0	0	211	1305	1356	184	0	0	3056
EN1 CASTING EMISSION REDUCTION PROGRAM (CERP)	0	5800	0	0	0	0	0	0	5800
EN2 FORT ORD CLEANUP DEMONSTRATION PROJECT	0	2000	0	0	0	0	0	0	2000
EN3 MANAGING ARMY TECHNOLOGY ENVIRON ENHANCEMENTS	0	1000	0	0	0	0	0	0	1000
EN4 PLASMA ENERGY PYROLYSIS SYSTEM (PEPS)	0	6000	0	0	0	0	0	0	6000
EN5 PORTA BELLA ENVIRONMENTAL CLEANUP	0	2500	0	0	0	0	0	0	2500
EN6 UNEXPLODED ORDNANCE IN SUPPORT OF MILITARY READ	0	3400	0	0	0	0	0	0	3400
EN7 VANADIUM TECHNOLOGY PROGRAM	0	1300	0	0	0	0	0	0	1300

A. Mission Description and Budget Item Justification: 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.

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

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 discrimination). This program will address, and eventually resource, programs in each of the environmental quality technology pillars (restoration, conservation, compliance, and pollution prevention). Work must be endorsed by potential users and supported by a state-of-the-art assessment (i.e., technology is well-in-hand). 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.

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	13275	7536	9171
Appropriated Value	13397	35136	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reduction	0	-106	0
b. SBIR/STTR	-394	0	0
c. Omnibus or Other Above Threshold Reprogramming	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-123	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	160
Current Budget Submit (FY 2003 PB)	12880	35030	9331

Change Summary Explanation: Funding: FY 2002 - The following projects were added to this program element by Congress:
 - \$5,600K for Commercializing Dual Use Technologies (Commercialization of Technology to Lower Defense Costs, Project 04F): The objective of this Congressional add is to facilitate technology transfer by helping small and medium sized enterprises into new Defense and Defense spin-off markets. Appropriate assistance to these firms can result in an increased supply and broader commercial usage of Federal and military technologies, thereby lowering Defense procurement costs.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**February 2002**

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

0603779A - Environmental Quality Technology Dem/Val

- \$5,800K for Casting Emission Reduction Program (CERP), Project EN1: The objective of this Congressional add is to use the National Defense Center for Environmental Excellence (NDCEE) to validate new capabilities to reduce emissions resulting from casting operations associated with DoD materials.
- \$2,000K for Fort Ord Cleanup Demonstration Project, Project EN2: The objective of this Congressional add is to support the demonstration and validation of innovative technologies to specifically address the remediation of asbestos and PCBs generated from building removal at Fort Ord, California.
- \$1,000K for Managing Army Technology Environmental Enhancement Program, Project EN3: The objective of this Congressional add is to focus work on management oversight of the Army's environmental quality technology program.
- \$6,000K for Plasma Energy Pyrolysis System (PEPS), Project EN4: The objective of this Congressional add is to validate the new mobile PEPS unit or move the existing unit to an Army depot for the destruction of hazardous wastes at industrial-scale.
- \$2,500K for Porta Bella Environmental Cleanup Technology Demonstration, Project EN5: The objective of this Congressional add is to complete the technology demonstration work at Porta Bella, California.
- \$3,400K for Unexploded Ordnance (UXO) in Support of Military Readiness, Project EN6: The objective of this Congressional add is to support validation of identification and discrimination capabilities for buried UXO.
- \$1,300K Vanadium Technology Program, Project EN7: The objective of this Congressional add is to begin efforts to validate a capability to extract vanadium for materials found in landfills.

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603779A - Environmental Quality Technology Dem/Val					PROJECT 035			
COST (In Thousands)	FY 2001 Actual	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	4708	4863	4856	4962	4950	4941	4927	0	38971	

A. Mission Description and Budget Item Justification: This program is managed by the Army on behalf of the Office of the Assistant Deputy Under Secretary of Defense for Environment (ADUSD-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).

FY 2001 Accomplishments:

- 2856 - Oversaw and validated environmentally acceptable technologies for potential exploitation at DoD facilities/installations.
- Support pollution prevention efforts in acquisition (JG-PP).
- 1852 - Validated technologies that improve DoD's industrial pollution prevention and compliance technical capability for coatings, platings, sealants, and for heavy metals reduction/elimination from surface protection processes.
- Increased capabilities in technical data and modeling using existing capabilities in visualization and 3-D modeling.

Total 4708

FY 2002 Planned Program

- 2880 - 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, sealants, and for heavy metals reduction/elimination from surface protection processes.

Total 4863

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

February 2002

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

**0603779A - Environmental Quality Technology
Dem/Val**

PROJECT

035

FY 2003 Planned Program

- 2878 - Oversee and validate environmentally acceptable technologies for potential exploitation at DoD facilities/installations.
- Support pollution prevention efforts in acquisition (JG-PP).
- 1978 - Continue validation of technologies that improve DoD's industrial pollution prevention, compliance, and restoration technical capability for coatings, platings, sealants, and to reduce/eliminate heavy metals from surface protection processes, and unexploded ordnance remediation.

- Support weapon system acquisition and sustainment associated with life-cycle environmental management during development, testing, manufacturing, operation, maintenance, and disposal.
- Support related issues such as energy management, safety and occupational health considerations of weapon systems, and life-cycle cost assessments/analyses.

Total 4856

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)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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
a . Not applicable for this item			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
a . Technical Data	CPFF	Concurrent Technologies Corporation, Johnstown, PA (FY01)	1155	1162	2Q	1148	1Q	1188	1Q	Continue	4653	Continue
Subtotal:			1155	1162		1148		1188		Continue	4653	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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	CPIFF	Concurrent Technologies Corporation, Johnstown, PA (FY01)	1109	1190	4Q	1983	2Q	1978	2Q	Continue	Continue	Continue
Subtotal:			1109	1190		1983		1978		Continue	Continue	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	2356		1732		1690		Continue	8278	Continue
Subtotal:			2500	2356		1732		1690		Continue	8278	Continue

Project Total Cost:			4764	4708		4863		4856		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603779A - Environmental Quality Technology Dem/Val					PROJECT 04E			
COST (In Thousands)	FY 2001 Actual	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	2608	4264	5427	3317	0	0	0	15616	

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 in FY 2003, ground penetrating radar (GPR) and chemical and seismic/acoustic sensors will be integrated into the system as they mature.

FY 2001 Accomplishments:
- Program not funded in FY 2001.

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

February 2002

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

**0603779A - Environmental Quality Technology
Dem/Val**

PROJECT

04E

FY 2002 Planned Program

- 1500 - 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 2608

FY 2003 Planned Program

- 1000 - Complete controlled and live site demonstration and validation of prototype UXO multisensor and analysis system.
- 1000 - Integrate advanced sensors in prototype UXO multisensor and analysis system.
- 1164 - Begin validation of prototype system that integrates advanced sensors with fusion/analysis algorithms to improve buried UXO detection, discrimination, and identification at well-characterized controlled sites.
- 1100 - Begin live site demonstration and validation of enhanced prototype UXO multisensor and analysis system.

Total 4264

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)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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 . Validate developed or commercially available technologies to discriminate and identify buried UXO.	BAA and CPFF	TBD	0	0		500		650		1500	2650	0
b . In-House Development - Integration of sensors, hardware/software, & navigation system into prototype	In-house	Army Environmental Center (AEC), Aberdeen Proving Ground, MD	0	0		750	1Q	984	1Q	2118	3852	0
Subtotal:			0	0		1250		1634		3618	6502	0

Remarks: Performing activity and location to be determined through input by the Environmental Quality Technology (EQT) UXO Identification and Discrimination Coordinating Committee. Army Environmental Center will consider input from the coordinating committee and determine the appropriate executing organization and location depending on the product to be demonstrated.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
04E

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(s) support at test site(s) to facilitate the validation of technologies,	BAA and CPFF	TBD	0	0		250		500		1000	1750	0
b . In-House Development - Preparation of Test Sites	In-House	AEC	0	0		370	1Q	680	1Q	1021	2071	0
Subtotal:			0	0		620		1180		2021	3821	0

Remarks: Performing activity and location to be determined through input by the Environmental Quality Technology (EQT) UXO Identification and Discrimination Coordinating Committee. Army Environmental Center will consider input from the coordinating committee and determine the appropriate executing organization and location depending on the product to be demonstrated.

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 & evaluate the effectiveness of potential technologies to discriminate & identify buried UXO.	BAA and CPFF	TBD	0	0		277		540		1500	2317	0
b . In-House Development - Planning and Execution	In-House	AEC	0	0		261	1Q	510	1Q	620	1391	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration/validation

0603779A - Environmental Quality Technology Dem/Val

04E

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
			0	0		538		1050		2120	3708	0
Subtotal:												

Remarks: Performing activity and location to be determined through input by the Environmental Quality Technology (EQT) UXO Identification and Discrimination Coordinating Committee. Army Environmental Center will consider input from the coordinating committee and determine the appropriate executing organization and location depending on the product to be demonstrated.

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 Management (ERDC)	MIPR	Engineer Research and Development Center (ERDC), Vicksburg, MS	0	0		100		200		650	950	0
b . In-House Management (AEC)	In-House	AEC	0	0		100		200		335	635	0
Subtotal:			0	0		200		400		985	1585	0

Remarks: Performing activity and location to be determined through input by the Environmental Quality Technology (EQT) UXO Identification and Discrimination Coordinating Committee. Army Environmental Center will consider input from the coordinating committee and determine the appropriate executing organization and location depending on the product to be demonstrated.

Project Total Cost:			0	0		2608		4264		8744	15616	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603782A - WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	PROJECT 355
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COST (In Thousands)	FY 2001 Actual	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	12464	60809	43911	20202	15137	21045	0	173568

A. Mission Description and Budget Item Justification: Warfighter Information Network-Tactical (WIN-T) is the Objective Force communications system for reliable, secure, and seamless video, data, imagery, and voice services that enables decisive combat actions. WIN-T is the Army's portion of the Global Information Grid (GIG) and will interoperate with all systems on the GIG. The WIN-T network will integrate communications platforms and fuses systems together through a standard communications infrastructure for all tactical Command, Control, Communications, and Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems. WIN-T 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 and supports Mobile Battle Command Operations and situational awareness. WIN-T will be modular in design, scalable to users' requirements, and capable of adapting to the evolution of the Warfighter through task reorganization. WIN-T will be a bandwidth and spectrum-efficient, Joint Technical Architecture-Army (JTA-A) compliant, commercial standards-based network. Key elements of WIN-T include Switching/Routing, Transmission, Network Management, Information Assurance and subscriber services.

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

FY 2001 Accomplishments:
 No activity.

- FY 2002 Planned Program**
- 2950 Initiate efforts with NSA/Army Signal Center (SIGCEN)/JCSE to develop products to support the WIN-T program.
 - 1591 Prepare/coordinate Request For Proposal (RFP), and Milestone B Decision Documentation, and perform program support and management efforts.
 - 775 Conduct Source Selection Evaluation Board (SSEB) for dual System Integration/Demonstration contract awards to assess/develop WIN-Tactical Architecture.
 - 7048 Initiate assessment/development of WIN-Tactical architecture.
 - 100 Initiate Early User Test & Experimentation (EUT&E) activities
- Total 12464

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
355

FY 2003 Planned Program

- 49798 Continue analysis/development of WIN-Tactical Architecture to include modeling & simulation, and demonstrations.
- 6342 Continue to initiate efforts with NSA/SIGCEN/JCSE to develop products to support the WIN-T program.
- 3296 Prepare/coordinate Request For Proposal and Milestone C Decision documentation, and perform program support and management efforts.
- 1373 Early User Test & Experimentation (EUT&E)

Total 60809

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	0	15075	26152
Appropriated Value	0	12575	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-111	0
b. SBIR/STTR	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	0	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	34657
Current Budget Submit (FY 2003 PB)	0	12464	60809

Change Summary Explanation:
 FY02 funding reduced by Congressional action (-\$2.5M).
 FY03 program increased to fully fund System Integration and Demonstration (SID) efforts (+\$34.657M).

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603782A - WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	PROJECT 355
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<u>C. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
B79100 - WIN-Tactical Program (Other Procurement, Army)	0	0	0	0	103321	157507	108345	Continue	Continue

D. Acquisition Strategy: The proposed WIN-Tactical program consists of two separate, but linked contracts. First includes awarding dual System Integration & Demonstration (SID) contracts. The SID contracts will consist of a nominal 27 month effort with two (2) competitively selected contractors. WIN-Tactical System architecture will be defined, modeling and simulations will assess performance, and technology risks will be measured and assessed at the Early User Test and Evaluation (EUT&E). This data will support the government's decision to enter Low Rate Initial Production (LRIP). The government plans to award a linked follow-on contract for LRIP and Full Rate Production (FRP). The contractor will deliver performance specifications and technical documentation which will define the performance baseline for LRIP equipment in response to the LRIP Request for Proposal (RFP). LRIP will provide for the procurement of unit sets, and includes unit set fielding and training, as well as enhancements and will support Force Development Test and Experiment (FDT&E) and Initial Operational Test and Experimentation (IOT&E). Upon successful completion of the LRIP, Full Rate Production will be awarded to the LRIP contractor.

<u>E. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Acquisition Strategy approved		2Q					
Develop System Integration & Deomonstration (SID) Request for Proposal (RFP)		1-2Q					
RFP Release SID		2Q					
Conduct Source Selection and Evaluation Board (SSEB) for SID Contract		2-3Q					
Milestone B decision		3Q					
SID Contract		3-4Q	1-4Q	1-4Q			
IPR			3Q				
Develop RFP Documentation for LRIP			4Q	1-3Q			
Early User Test & Experimentation (EUT&E)				2Q			

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
355

E. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
LRIP RFP Release				3Q			
Conduct SSEB for LRIP Contract				4Q			
Milestone C decision				4Q			
LRIP/FRP					1-4Q	1-4Q	1-4Q
Production Verification Test						2-3Q	
New Equipment Training						4Q	1Q
Force Development Test & Experimentation (FDT&E)							1Q
Initial Operational Test and Evaluation (IOT&E)							2Q
First Unit Equipped (FUE)							3Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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 . SID (System Integration & Demo)	CPIFF	TBD	0	0		7048	3-4Q	49798	1-4Q	Continue	56846	Continue
Subtotal:			0	0		7048		49798		Continue	56846	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 . WIN-Tactical Architecture Studies	MIPRs	MISC	0	0		2950	1Q	6342	1Q	Continue	9292	Continue
Subtotal:			0	0		2950		6342		Continue	9292	Continue

Remarks: Support costs include: Initiate efforts with NSA/SIGCEN/JCSE to develop products to support the WIN-T program..
MIPR - Military Interdepartmental Purchase Request
CPIFF - Cost Plus Fixed Fee

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603782A - WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	PROJECT 355
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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 . EUT&E	MIPRs	AEC	0	0		100		1373	2Q	Continue	1473	Continue
Subtotal:			0	0		100		1373		Continue	1473	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 . Documentation Preparation & PM Support	MIPRs	MISC	0	0		1591	1-4Q	3296	1-4Q	Continue	4887	Continue
b . SID Source Selection Evaluation Board	MIPRs	MISC	0	0		775	2-3Q	0		Continue	Continue	Continue
Subtotal:			0	0		2366		3296		Continue	Continue	Continue

Project Total Cost:			0	0		12464		60809		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603790A - NATO Research and Development						PROJECT 691		
COST (In Thousands)	FY 2001 Actual	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	1847	6375	8773	8912	9110	9303	9522	0	76924

A. Mission Description and Budget Item Justification: This program implements the provisions of Title 10 U.S. Code, Section 2350a, Cooperative Research and Development (R&D) Projects: Allied Countries. The objective is to improve, through the application of emerging technologies, the conventional defense capabilities of the United States, the North Atlantic Treaty Organization (NATO), U.S. major non-NATO allies and Friendly Foreign countries. 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 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 partners 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 Army weapon and command, control, communications and information (C3I) systems.

FY 2001 Accomplishments:

- 1007 Multilateral Interoperability Program (MIP) (Partners: Germany, France, United Kingdom, Canada, Italy): Continued integration work from the Command and Control Systems Interoperability Program (C2SIP) into an Advanced Concept Technology Demonstration (ACTD) to achieve NATO levels four (messaging) and five (database) interoperability and also extended the effort into a sustainable program to incorporate lessons learned into national systems. Extended participation to include Canada and Italy.
- 410 Electro-thermal Chemical (ETC) Gun Technologies for Future Military Vehicle Systems (Partner: Germany): Sought to jointly advance ETC gun technologies, and demonstrate feasibility of future large caliber ETC guns. Investigation was 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): Jointly developed 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. Conducted experiments to validate propagation mostly in Canada, and conducted simulation and modeling in the U.S.

Total 1847

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603790A - NATO Research and Development	PROJECT 691
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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.

- 900 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.

- 500 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.

- 902 Senior National Representatives (Army)(SNR(A))/International Cooperative Opportunities (ICO) Projects (Partners: France, Germany, United Kingdom, Italy): Supporting harmonization of programs at various levels; exchanging information, identifying knowledge gaps and conduct feasibility studies to further promote cooperative development; standardizing, fielding and roadmapping various processes; distributing the workload among the different nations.

- 530 International Agreement Tracking System (IATS)/International Online (IO) Development and Implementation, NATO/International Cooperative R&D Policy Development, and Report to Congress Pursuant to 10 USC 2350a, prepare and provide to USD(A&T) the Army section of the 2002 Report to Congress on the International Cooperative Research and Development Program.

- 2000 Technology Research and Development (TRDP) 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 (ESEP) (Partner: Major NATO Allies): Supports and facilitates cooperation by expanding the MOU participants' knowledge of each others' research, development and acquisition process.

Total 6375

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration/validation

0603790A - NATO Research and Development

691

FY 2003 Planned Program

- 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. Space and Missile Defense Command (SMDC) is also designing and fabricating a testbed.
- 800 Simulation and Command and Control (C2) Information System Connectivity Experimentation (SINCE) (Partner: Germany): Continue to define and demonstrate a generic solution for interfacing and networking Brigade/Battalion (BDE/BN) Command and Control Information Systems (C2IS) and applicable Modeling and Simulation (M&S) systems as required to support Coalition Force collaborative Mission Management experimentation.
- 1000 Automated Identification Technology for Asset Tracking/Total Asset Visibility (TAV) (Partner: United Kingdom): Continue development of the Asset Tracking Data System which will allow seamless tracking and identification of US and UK materiel shipment/consignments and will significantly enhance US coalition warfare capabilities.
- 1000 Senior National Representatives (Army) (SNR(A))/International Cooperative Opportunities (ICO) Projects (Partners: France, Germany, United Kingdom, Italy): Supporting harmonization of programs at various levels; exchanging information, identifying knowledge gaps and conduct feasibility studies to further promote cooperative development; standardizing, fielding and roadmapping various processes; distributing the workload among the different nations.
- 690 International Agreement Tracking System (IATS)/International Online (IO) Development and Implementation, NATO/International Cooperative R&D Policy Development, and Report to Congress Pursuant to 10 USC 2350a, prepare and provide to USD(A&T) the Army section of the 2002 Report to Congress on the International Cooperative Research and Development Program.
- 2783 Technology Research and Development Projects (TRDP) (Partners: United Kingdom, Germany, France, Canada, Australia, Netherlands, Korea, Norway): The scope of this MOU encompasses R&D collaboration on basic, exploratory and advanced technologies, the maturation of which may lead to the development of technologically superior conventional weapon systems.
- 500 Engineer and Scientist Exchange Program (ESEP) (Partner: Major NATO Allies): Supports and facilitates cooperation by expanding the MOU participants' knowledge of each others' research, development and acquisition process.
- 500 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.

Total 8773

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603790A - NATO Research and Development

PROJECT
691

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	1902	8633	8843
Appropriated Value	1920	6433	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-58	0
b. SBIR / STTR	-56	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-17	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-70
Current Budget Submit (FY 2003 PB)	1847	6375	8773

C. Other Program Funding Summary: None

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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 in support of Army Transformation to the Objective Force or as product improvements to Legacy Force.

<u>E. Schedule Profile</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>
Multilateral Interoperability Program (MIP)							
- Complete Lab Demo/Tests & Simulations	3Q						
- Complete C2SIP ATCD		3Q					
- Complete Integration into MCS			3Q				
Electro-Thermal Chemical (ETC)							
- Fabricate ETC Gun Module	4Q						
- Complete System Test and Report		4Q					
Intense Laser Pulse Propagation in the Atmosphere							
- Complete Modeling and Simulation	4Q						
- Complete Testing and Experimentation		4Q					
SINCE - C2 Systems							
- Interface/Network Definition		4Q					
- Complete Modeling and Simulation			4Q				
- Complete Demonstration				4Q			
- Final Report					2Q		
Total Asset Visibility (TAV)							
- Conclude International Agreement		3Q					
- Complete Requirements Definition			4Q				
- Develop Asset Tracking Architecture				1-4Q			
- Joint Testing and Demonstration					1-4Q		
- Complete Final Report						2Q	
Senior National Representatives (Army)							
- Mine Protection For Armored Vehicles (MPAV) Feasibility Study		2-4Q	1-4Q				

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603790A - NATO Research and Development

PROJECT
691

E. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
- Identify International Cooperative Opportunities International Agreement Tracking System (IATS) / International On Line (IOL)		1-4Q	1-4Q	1-4Q	1-4Q		
- Achieve IATS and Tri Service Server (TSS) Database Interoperability	4Q						
- Initial Operational Capability of IOL		3Q					
- Incorporate Tier II and Tier III IOL Requirements Engineer and Scientist Exchange Program (ESEP)		3-4Q	1-4Q				
- Identify and Complete ESEP Assignments Technology Research and Development Projects (TRDP)		1-4Q	1-4Q				
- Identify and Conclude TRDP Project Agreements		1-4Q	1-4Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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)	CPIFF	C3S, CSC Fort Washington, PA	0	690		700		0		0	1390	0
b . Electro-Thermal Chemical (ETC) Gun - Munitions & Propellants	TBD	UDLP Minneapolis, MN	0	287		0		0		0	287	0
c . International Agreement Tracking System (IATS) - Software Development	TBD	JIL Information Systems Vienna, VA	0	217		234		277		0	728	0
d . Intense Laser Pulse Propagation in the Atmosphere (ILPPA) - Sensors	TBD	TBD	0	80		0		0		0	80	0
e . Automated Identification Technology for Asset Tracking/Total Asset Visibility (TAV) - Software	TBD	TBD	0	0		1050		1020		0	2070	0
f . Engineer-Scientist Exchange Program (ESEP)	TBD	TBD	0	0		650		350		0	1000	0
g . Techniques for Active Defense (TAD) - Missile Defense	TBD	TBD	0	0		0		1820		0	1820	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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
h . Simulation & C2 Information System Connectivity Experimentation (SINCE) - C2 Systems	TBD	TBD	0	0		680		376		0	1056	0
i . Senior National Representatives (Army) (SNR[A])	TBD	TBD	0	0		350		350		0	700	0
j . TRDP	TBD	TBD	0	0		924		1942		0	2866	0
			0	1274		4588		6135		0	11997	0
Subtotal:			0	1274		4588		6135		0	11997	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 . MIP	MIPR	CECOM Ft. Monmouth, NJ	0	160		150		0		0	310	0
b . ETC Gun	MIPR	TACOM, Warren, MI	0	62		0		0		0	62	0
c . IATS	MIPR	TBD	0	47		50		54		0	151	0
d . ILPPA	MIPR	AMCOM, Redstone Arsenal, AL	0	18		0		0		0	18	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration/validation

0603790A - NATO Research and Development

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
e . Automated Identification Technology for Asset Tracking/TAV	MIPR	LOGSA	0	0		225		225		0	450	0
f . ESEP	MIPR	TBD	0	0		125		75		0	200	0
g . TAD	MIPR	AMCOM, Redstone Arsenal, AL	0	0		0		390		0	390	0
h . Simulation and C2 Information System Connectivity Experimentation (SINCE)	MIPR	CECOM Ft. Monmouth, NJ	0	0		100		75		0	175	0
i . SNR(A)	MIPR	TBD	0	0		75		75		0	150	0
j . TRDP	MIPR	TBD	0	0		180		425		0	605	0
Subtotal:			0	287		905		1319		0	2511	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603790A - NATO Research and Development

PROJECT
691

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	206	0
b . ETC Gun	MIPR	Aberdeen Proving Ground, NJ	0	41		0		0		0	41	0
c . IATS	MIPR	TBD	0	31		33		36		0	100	0
d . ILPPA	MIPR	White Sands Missile Range, NM	0	12		0		0		0	12	0
e . Automated Identification Technology for Asset Tracking/TAV	MIPR	AMSAA, Aberdeen Proving Ground, NJ	0	0		150		150		0	300	0
f . ESEP	MIPR	TBD	0	0		70		50		0	120	0
g . TAD	MIPR	White Sands Missile Range, NM	0	0		0		260		0	260	0
h . Simulation and C2 Information System Connectivity Experimentation (SINCE)	MIPR	CECOM Ft Monmouth, NJ	0	0		60		50		0	110	0
i . SNR(A)	MIPR	TBD	0	0		50		50		0	100	0
j . TRDP	MIPR	TBD	0	0		120		283		0	403	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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
Subtotal:			0	190		583		879		0	1652	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 . MIP	MIPR	PEO C3S, Ft. Monmouth, NJ	0	53		50		0		0	103	0
b . ETC Gun	MIPR	PEO GCSS	0	21		0		0		0	21	0
c . IATS	MIPR	TBD	0	16		17		18		0	51	0
d . ILPPA	MIPR	AMCOM, Redstone, AL	0	6		0		0		0	6	0
e . Automated Identification Technology for Asset Tracking/TAV	MIPR	LOGSA	0	0		75		75		0	150	0
f . ESEP	MIPR	TBD	0	0		32		25		0	57	0
g . TAD	MIPR	PEO MD, Redstone Arsenal, AL	0	0		0		130		0	130	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration/validation

0603790A - NATO Research and Development

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
h . Simulation and C2 Information System Connectivity Experimentation (SINCE)	MIPR	CECOM, Ft. Monmouth, NJ	0	0		40		25		0	65	0
i . SNR(A)	MIPR	TBD	0	0		25		25		0	50	0
j . TRDP	MIPR	TBD	0	0		60		142		0	202	0
Subtotal:			0	96		299		440		0	835	0
Project Total Cost:			0	1847		6375		8773		0	16995	0

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev
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COST (In Thousands)	FY 2001 Actual	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	9506	13196	8643	10389	10482	11240	11529	Continuing	Continuing
B32 ADV MAINT CONCEPTS/EQ	2936	3403	3672	3909	4005	4118	4218	0	31664
B33 CARGO HANDLING & MISSION SPT	2725	2970	3283	3551	3561	3625	3821	0	28515
B45 AIRCREW INTEGRATED SYS-AD	3845	6823	1688	2929	2916	3497	3490	Continuing	Continuing

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

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002/03 PB)	9757	9105	9429
Appropriated Value	9848	13305	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-109	0
b. SBIR / STTR	-251	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-91	0	0
Adjustments to Budget Years Since FY2002/03 PB	0	0	-786
Current Budget Submit (FY 2003 PB)	9506	13196	8643

FY02: +\$4.2M for Visual Cockpit optimization.

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev						PROJECT B32	
COST (In Thousands)	FY 2001 Actual	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	2936	3403	3672	3909	4005	4118	4218	0	31664

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: advanced maintenance aids, database management software, on-board diagnostics, diagnostic and prognostic 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. Other efforts include Digital Aviation Logistics, Hybrid Electric Vehicles, and Maintenance Free Tires. 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 2001 Accomplishments:

- 422 Complete system development and demonstration of Structural Usage Monitoring System (SUMS).
- 754 Complete system development and demonstration of Aviation Diagnostic and Engine Prognostic Technology (ADEPT).
- 405 Mark parts and perform flight analysis to validate Aviation Parts Marking Demonstration (APMD).
- 298 Develop Digital Aviation Logistics (DAL) maintenance system definition.
- 1057 Management Support Services.

Total 2936

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

0603801A - Aviation - Adv Dev

PROJECT

B32**FY 2002 Planned Program**

- 250 Digital Aviation Logistics (DAL) concept and technology development/IPT.
 - 285 Initiate effort to develop a wireless sensor application for aircraft.
 - 172 Initiate Automated Configuration Management effort.
 - 825 Develop advanced maintenance aid that will improve isolation of faulty components on Army helicopters.
 - 650 Procurement of prototype and component advanced development on Hybrid Electric Vehicle.
 - 50 Evaluation of applications to AGSE systems for Maintenance Free Tires.
 - 396 Advanced Maintenance Concepts.
 - 775 Management Support Services.
- Total 3403

FY 2003 Planned Program

- 150 Digital Aviation Logistics (DAL) - continue concept and technology development.
 - 460 Bench test of wireless sensors for aircraft.
 - 1275 Continue the automated configuration management effort.
 - 500 Continue development of the advanced maintenance aid on Army helicopters.
 - 200 System integration and early operational testing of Hybrid Electric Vehicle.
 - 249 Advanced Maintenance Concepts.
 - 838 Management Support Services.
- Total 3672

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

PROJECT
B32

B. Other Program Funding Summary

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Aircraft Procurement, Army(APA) SSN AZ3100	11817	18975	18091	19452	17201	17899	18385	Continuing	Continuing

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

D. Schedule Profile

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
STRUCTURAL USAGE MONITORING SYSTEM (SUMS)							
System Development and Demonstration		2-4Q					
AVIATION DIAGNOSTIC AND ENGINE PROGNOSTIC TECHNOLOGY (ADEPT)							
System Development and Demonstration		3-4Q					
AVIATION PARTS MARKING DEMONSTRATION (APMD)							
Mark Parts and Flight Analysis		3Q					
DIGITAL AVIATION LOGISTICS (DAL)							
Complete DAL Maintenance System Definition		2Q					
Concept and Technology Development/IPT			1-4Q				
Continue Concept and Technology Development			1-4Q				
WIRELESS AIRCRAFT SENSORS							
Develop Sensor Application		2-4Q					
Bench Test			2Q				
AUTOMATED CONFIGURATION MANAGEMENT							
Initiate Management Methodology		2-3Q					
Identify Aircraft Interface Requirements			1-4Q				
ADVANCED MAINTENANCE AID							
Define System and Develop Methodology		2-4Q					
Develop Algorithms			2-3Q				

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

PROJECT
B32

D. Schedule Profile (continued)	<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>
HYBRID ELECTRIC VEHICLE							
Procure prototype and perform component advanced development		1-4Q					
System Integration and Early Operational Testing			1-4Q				
MAINTENANCE FREE TIRES							
Application and Standardization on AGSE		2-4Q					
ADVANCED MAINTENANCE CONCEPTS							
Initiate Development of Advanced Maintenance Concepts		2-4Q					
Continue Development of Advanced Maintenance Concepts			1-4Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

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	2323	2250
b . ADEPT	CA/CR	Allied Signal, Tempe, AZ	823	754	3Q	0		0		0	1577	1470
c . APMD	SS/CPFF	The Boeing Company, Philadelphia, PA	490	405	3Q	0		0		0	895	800
d . DAL	CA/CR	Rita, Easton, MD	1764	298	2Q	250	1Q	150	1Q	300	2762	1870
e . Wireless Aircraft Sensors	C/CPFF	TBD	0	0		285	2Q	460	2Q	785	1530	1450
f . Automated Configuration Management	C/CPFF	TBD	0	0		172	2Q	1275	1Q	1635	3082	2820
g . Adv. Maint. Aid	C/CPFF	TBD	0	0		825	2Q	500	2Q	1520	2845	2740
h . Hybrid Electric Vehicle	MIPR	TACOM	0	0		650	1Q	200	1Q	0	850	800
i . Maintenance Free Tires	MIPR	Army Research Lab, Hampton, VA	0	0		50	2Q	0		0	50	50
j . Advanced Maintenance Concepts	C/CPFF	TBD	0	0		396	2Q	249	1Q	1391	2036	1850

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev	PROJECT B32
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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:			4978	1879		2628		2834		5631	17950	16100

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	671	2Q	505	2Q	545	2Q	Continue	Continue	Continue
Subtotal:			0	671		505		545		Continue	Continue	Continue

Remarks: None

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev	PROJECT B32
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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
			0	0		0		0		0	0	0
Subtotal:												

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	NA		0	119		100	2Q	110	2Q	Continue	329	Continue
b . Program Management In-House	NA		0	267		170		183		Continue	Continue	Continue
Subtotal:			0	386		270		293		Continue	Continue	Continue

Remarks: None

Project Total Cost:			4978	2936		3403		3672		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev					PROJECT B33			
COST (In Thousands)		FY 2001 Actual	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	2725	2970	3283	3551	3561	3625	3821	0	28515

A. Mission Description and Budget Item Justification: This project explores, develops and integrates affordable ground support equipment and diagnostic technologies to replace obsolete and unsupported ground support equipment and diagnostics 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 C decision. Funds for the high-capacity external cargo winches, remote external cargo monitoring and other efforts to include Aviation Turbine Engine Diagnostics System, Aircraft Cleaning and Deicing System, New Aviation Power System, Corrosion Environment Monitor Sensors, Battle Damage Assessment and Repair, Shop Equipment Contact Maintenance, Digital Aircraft Weight Scales and Standard Aircraft Towing System. Addressing priority Aviation Ground Support Equipment (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 2001 Accomplishments:

- 285 Complete coding of fault logic for Aviation Turbine Engine Diagnostic System (ATEDS).
- 222 Conduct lab analysis of the Aircraft Cleaning and De-icing System (ACDS).
- 135 Complete the restructured Computer-Aided Nondestructive Inspection and Repair Disposition (CANDID) program and document technology.
- 292 Complete fabrication of New Aviation Ground Power System (NAPS) prototypes.
- 75 Fabricate fuel pallets for National Guard CH-47D aircraft used on Advanced Cargo Handling System (ACHS) testing.
- 342 Initiate field analysis of prototype Corrosion Environment Monitor Sensors (CEMS).
- 359 Perform flight analysis of Unit Maintenance Aerial Recovery Kit (UMARK) with CH-47 victim aircraft and complete performance specification in preparation for Milestone C approval.
- 327 Demonstrate (field and bench tests) technologies for utilization of engine diagnostics data to isolate suspect components.
- 688 Management Support Services.

Total 2725

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

February 2002

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

0603801A - Aviation - Adv Dev

PROJECT

B33

FY 2002 Planned Program

- 1200 Develop software for Aviation Turbine Engine Diagnostics System (ATEDS).
 - 130 Continue field analysis of the Aircraft Cleaning and De-icing System (ACDS) and develop operational test prototype.
 - 150 Initiate evaluation and analysis of New Aviation Ground Power System (NAPS) prototype.
 - 108 Develop advanced technology in areas of high-capacity external cargo winches and remote external cargo monitoring for Advanced Cargo Handling System (ACHS).
 - 40 Completion of concept analysis contract for Corrosion Environment Monitor Sensors (CEMS).
 - 100 Complete the prototyping of the Electrical Repair Kit for the enhanced Battle Damage Assessment and Repair (BDAR) program.
 - 120 Evaluate designs and develop performance specification for Lightweight Power System in support of the Shop Equipment Contact Maintenance (SECM).
 - 125 Develop specifications for Digital Aircraft Weight Scales (DAWS).
 - 90 Initiate Advanced Ground Support Equipment effort to apply state-of-the-art technology in the fulfillment of AGSE operational requirements.
 - 50 Perform market research and identify equipment for Standard Aircraft Towing System (SATS).
 - 857 Management Support Services.
- Total 2970

FY 2003 Planned Program

- 1500 Complete software development for Aviation Turbine Engine Diagnostics System (ATEDS).
- 100 Operational testing and specification development for Aircraft Cleaning and De-icing System (ACDS).
- 100 Complete evaluation and develop performance specification for New Aviation Ground Power System (NAPS).
- 227 Advanced Cargo Handling System (ACHS) - design and fabricate an external cargo winch system utilizing remote external cargo monitoring.
- 150 Battle Damage Assessment and Repair (BDAR) Kit - complete prototyping of fuel cell and fluid line kits.

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

PROJECT
B33

FY 2003 Planned Program (Continued)

- 275 Continue the Advanced Ground Support Equipment (AGSE) effort that will apply state-of-the-art technology to reduce the AGSE footprint and increase reliability in meeting AGSE operational requirements.
- 22 Develop performance specification for Standard Aircraft Towing System (SATS).
- 909 Management Support Services.

Total 3283

<u>B. Other Program Funding Summary</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>
Aircraft Procurement, Army (APA) SSN AZ3100	11817	18975	18091	19452	17201	17899	18385	Continuing	Continuing

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.

<u>D. Schedule Profile</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>
AIRCRAFT TURBINE ENGINE DIAG SYSTEM (ATEDS)							
Coding of fault logic		2Q					
Software Development			2-4Q				
Complete Software Development			1-3Q				
AIRCRAFT CLEANING AND DE-ICING SYSTEM (ACDS)							
Analysis and Lab Tests		1Q					
Field Analysis and Prototype Development			1-4Q				
Operational Test and Performance Specification			1-3Q				
COMPUTER AIDED NONDESTRUCTIVE INSPECTION AND DISPOSITION (CANDID) SYSTEM							

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev	PROJECT B33
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<u>D. Schedule Profile (continued)</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>
Final Design Review	3Q						
NEW AVIATION POWER SYSTEM (NAPS)							
Preliminary Design Review	2Q						
Field Analysis		3-4Q					
Field Analysis and Evaluation and Spec Development			1-3Q				
ADVANCED CARGO HANDLING SYSTEM (ACHS)							
Fabricate Fuel Pallets	2-3Q						
Develop Advanced Lift Technology and Restore CH-47 Aircraft		1-4Q					
Design, Fabricate and Test Lift Technology			1-4Q				
CORROSION ENVIRONMENT MONITOR SYS (CEMS)							
Field Analysis @ Fort Eustis	1-4Q	1Q					
UNIT MAINTENANCE AERIAL RECOVERY KIT (UMARK)							
CH-47 Flight Analysis and Spec Development	1-4Q						
ON-BOARD ENGINE DIAGNOSTICS							
Final Review	2Q						
BATTLE DAMAGE ASSESSMENT AND REPAIR (BDAR)							
Prototype Electrical Repair Kits		1-4Q					
Prototype Fuel Cell and Hydraulic Kits			1-2Q				
LIGHTWEIGHT POWER SYSTEM							
Evaluate Designs and Develop Performance Specifications		3Q					
DIGITAL AIRCRAFT WEIGHT SCALES							
Performance Specifications		2Q					
ADVANCED GROUND SUPPORT EQUIPMENT							
Research User Requirements		3Q					
Design and Fabricate Prototypes			3Q				
STANDARD AIRCRAFT TOWING SYSTEM (SATS)							
Market Research and Identify		1-4Q					
Develop Performance Specification			1-3Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

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	1200	2Q	1500	2Q	900	7083	6400
b . ACDS	C/CPFF	Riveer, South Haven, MI	611	222	1Q	130	1Q	100	1Q	0	1063	920
c . CANDID	SS/CPFF	Boeing, Mesa AZ	1317	135	3Q	0		0		0	1452	1380
d . NAPS	C/CPFF	Rome Labs, Rome, NY	722	292	2Q	150	3Q	100	2Q	0	1264	1000
e . ACHS	C/CPFF	In-House, TBD	1202	75	2Q	108	1Q	227	1Q	650	2262	2134
f . CEMS (Corrosive Envmt Mtr)	CA/CR	Honeywell; Minneapolis, MN	641	342	1Q	40	1Q	0		0	1023	600
g . UMARK	MIPR	In-house; ATTC, Fort Rucker, AL	1700	359	1Q	0		0		0	2059	1970
h . On-Board Diagnostics	C/CPFF	Sikorsky; Stratford, CT	613	327	2Q	0		0		0	940	836
i . BDAR	C/CPFF	TBD	0	0		100	1Q	150	1Q	0	250	250
j . Lightweight Power System	C/CPFF	TBD	0	0		120	3Q	0		0	120	120
k . Digital Aircraft Weight Scales	MIPR	AATD	0	0		125	2Q	0		0	125	125

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

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
1. Advanced Ground Support Equipment	C/CPFF	TBD	0	0		90	3Q	275	3Q	Continue	Continue	Continue
m. Standard Aircraft Towing System	C/CPFF	TBD	0	0		50	1Q	22	1Q	0	72	220
Subtotal:			10004	2037		2113		2374		Continue	Continue	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. Technical Engineering Services	MIPR	AATD	0	560	3Q	582	3Q	600	3Q	Continue	Continue	0
Subtotal:			0	560		582		600		Continue	Continue	0

Remarks: None

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

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	NA		0	128	2Q	134	2Q	162	2Q	Continue	424	0
b . Program Management In-House	NA		0	0		141		147		Continue	Continue	0
Subtotal:			0	128		275		309		Continue	Continue	0

Remarks: None

Project Total Cost:			10004	2725		2970		3283		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev						PROJECT B45	
COST (In Thousands)	FY 2001 Actual	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	3845	6823	1688	2929	2916	3497	3490	Continuing	Continuing

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, microclimate 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)**February 2002**

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

0603801A - Aviation - Adv Dev

PROJECT

B45**FY 2001 Accomplishments:**

- 3845 Continued Virtual Cockpit Optimization Program PDRR integrated technologies simulation and demonstration.

Total 3845

FY 2002 Planned Program

- 2677 Begin advanced development of Air Warrior preplanned Block 2 improvements.
- 4146 Continued Virtual Cockpit Optimization Program PDRR integrated technologies simulation and demonstration.

Total 6823

FY 2003 Planned Program

- 1688 Continue advanced development of Air Warrior preplanned Block 2 improvements.

Total 1688

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev	PROJECT B45
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<u>B. Other Program Funding Summary</u>	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	10698	4032	3150	2433	2437	2356	2347	Continuing	Continuing
Aircraft Procurement, Army SSN AZ3110 - ACIS	10494	10179	15215	34668	34526	35622	36734	Continuing	Continuing

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 have been 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 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Air Warrior System Preliminary Design Review							
Air Warrior System Critical Design Review	2Q						
Begin Air Warrior System Test	3Q						
Begin Air Warrior System Developmental and Operational Tests		1Q					
Begin Air Warrior nonrecurring production engineering integration into aircraft platforms		2Q					
Air Warrior basic ensemble Full Rate Production Decision			2Q				
Advanced Development of Air Warrior Block improvements		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Engineering Manufacturing Development of Air Warrior Block improvements		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
VCOP components demonstration in Advanced Prototyping Engineering Experimentation (APEX) simulator	3Q	2Q					

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

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	C- C/FP	Various	0	0		2059	2Q	1095	2Q	Continue	Continue	Continue
b . Virtual Cockpit Optimization Program Advanced Development	SS-CPFF	Microvision, Seattle, WA	3902	2909	2Q	4146	2Q	0		Continue	10957	Continue
Subtotal:			3902	2909		6205		1095		Continue	Continue	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 Government	1119	876	1-4Q	93	1-4Q	142	1-4Q	Continue	Continue	Continue
Subtotal:			1119	876		93		142		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603801A - Aviation - Adv Dev

PROJECT
B45

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		270	3Q	100	3Q	Continue	Continue	Continue
b . Virtual Retinal Display Demonstration and Validation	MIPR	Various Government Agencies	512	0		0		0		0	512	0
c . VCOP			90	0		0		0		0	90	0
Subtotal:			685	0		270		100		Continue	Continue	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	Various Government	30	60	1-4Q	255	1-4Q	351	1-4Q	Continue	Continue	Continue
Subtotal:			30	60		255		351		Continue	Continue	Continue

Project Total Cost:			5736	3845		6823		1688		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

COST (In Thousands)	FY 2001 Actual	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	27520	34197	27761	19952	4955	0	0	0	126383
AS2 SMALL ARMS IMPROVEMENT	2247	1418	1042	0	0	0	0	0	6386
AS3 OBJECTIVE INDIVIDUAL COMBAT WEAPON (OICW) PD/RR	25273	29979	26719	19952	4955	0	0	0	117197
AS4 MORTAR SYSTEMS	0	2800	0	0	0	0	0	0	2800

A. Mission Description and Budget Item Justification: 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 weapons and mortar systems. 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. It also provides for the Precision Guided Mortar Munition (PGMM). This is a precision strike round, using advanced sensors and guidance systems. It will be fired from the 120mm mortar weapon currently in the Army inventory. These systems support the Legacy transition path of the Transformation Campaign Plan (TCP).

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	35847	31670	27861
Appropriated Value	36179	34470	0
Adjustments to Appropriated Value		0	0
a. Congressional General Reductions		-273	0
b. SBIR / STTR	-1067	0	0
c. Omnibus or Other Above Threshold Reductions		0	0
d. Reprogrammings	-7260	0	0
e. Rescissions	-332	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-100
Current Budget Submit (FY 2003 PB)	27520	34197	27761

Change Summary Explanation:

FY 2001 funding for OICW(\$-7.2M) reprogrammed to the Objective Crew Served Weapon (OCSW) program (PE 63607/D627) to properly execute requirement IAW Congressional intent.

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603802A - Weapons and Munitions - Adv Dev					PROJECT AS2			
COST (In Thousands)	FY 2001 Actual	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	2247	1418	1042	0	0	0	0	0	6386	

A. Mission Description and Budget Item Justification: This project addresses the modernization of existing Small Arms Weapon systems. It 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. These small arms weapon systems support the Legacy transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- M203 UPGRADES
- 294 Prototype Development
- 200 Designed/Fabricated Hardware
- 150 Test and Simulation
- M249 SHORT RANGE TRAINING AMMO
- 677 Contract Awarded
- 40 Developed and Fabricated Prototype
- 110 Conducted Proof of Principle Test
- 160 Requirements Review/Prepared Performance Spec
- M240 WEIGHT REDUCTION
- 47 Trade-Off Analysis
- 293 Evaluated Alternate Material Receivers
- 276 Evaluated Alternate Barrel Configuration
- Total 2247

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

February 2002

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

0603802A - Weapons and Munitions - Adv Dev

PROJECT

AS2

FY 2002 Planned Program

- M203 UPGRADES
- 256 Finalize Prototype
- 125 System Demo
- 125 Update Systems Development and Demonstration Plan
- 38 Prepare/Staff IPR Package
- M249 SHORT RANGE TRAINING AMMO
- 50 Requirements Validation
- 35 Prepare Performance Specifications
- 60 Prepare Technical Assessment
- M240 WEIGHT REDUCTION
- 40 MS A
- 30 Material Analysis/Welding
- 30 Fabricate Welded Receivers
- 100 Fabricate Lightweight Barrels
- 50 Evaluate Alternate Trigger Frames
- 100 Fabricate Lightweight Trigger Frames
- 75 Complete Prototype Weapons
- 125 Contractor Test
- 179 Systems Demonstration /Report
- Total 1418

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
AS2

FY 2003 Planned Program

NON-TOXIC PRIMER DEVELOPMENT

- 150 Develop Composition/Preliminary Testing
- 250 Refine Mix/Optimization
- 100 Primer Testing
- 200 Cartridge Testing
- 100 Safety/Sensitivity Testing
- 130 Lake City Producibility
- 70 Center for Health Promotion and Preventive Medicine (CHPPM) Assessment
- 42 Prepare Final Report and Documentation

Total 1042

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603802A - Weapons and Munitions - Adv Dev	PROJECT AS2
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<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE 0604802A, Project DAS1	6554	5719	8958	14754	10641	4423	2423	0	61105

C. Acquisition Strategy: Primary strategy is to solicit 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 Systems Development and Demonstration.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
M203 UPGRADES							
Prototype Development	1-3Q						
Design/Fabricate Hardware	2-4Q	1Q					
Test and Simulation	2-4Q	1Q					
Finalize Prototype		1-4Q					
System Demo		4Q					
Update Systems Development and Demonstration Plan		3Q					
Prepare/Staff IPR Package		4Q					
M249 SHORT RANGE TRAINING AMMO							
Contract Awarded	4Q						
Develop/Fabricate Prototype		1-2Q					
Conducted Proof of Principle Test		3-4Q					
Requirements Review/Prepare Performance Spec		2-3Q					
Requirements Validation		2-3Q					
Prepare Performance Specifications		2-3Q					
Prepare Tech Assessment		4Q					
M240 WEIGHT REDUCTION							
Trade-off Analysis	1Q						
Evaluate Alternate Material Receivers	2-3Q						
Evaluate Alternate Barrel Configuration	4Q	1Q					
MS A		1Q					

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
AS2

D. Schedule Profile (continued)	<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>
Material Analysis/Welding		1-2Q					
Fabricate Welded Receivers		2-4Q					
Fabricate Lightweight Barrels		3-4Q					
Evaluate Alternative Trigger Frames		3Q					
Fabricate Lightweight Trigger Frames		4Q					
Complete Prototype Weapons		4Q					
Contractor Test		4Q					
Systems Demonstration/Report		4Q					
NON-TOXIC PRIMER DEVELOPMENT							
Develop Composition/Preliminary Testing			1Q				
Refine Mix/Optimization			2Q				
Primer Testing			3Q				
Cartridge Testing			3Q				
Safety/Sensitivity Testing			3Q				
Lake City Producibility			3Q				
Prepare Final Report and Demonstration			3Q				
Contract Award			3Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603802A - Weapons and 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	Various	Multiple	801	1537	1-4Q	556	1-4Q	650	1-4Q	0	3544	3544
Subtotal:			801	1537		556		650		0	3544	3544

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, Picatinny, NJ	566	262	1-4Q	435	1-4Q	292	1-4Q	0	1555	0
b . ILS Support	MIPR	TACOM, Rock Island, IL	25	28	1-4Q	25	1-4Q	0		0	78	0
Subtotal:			591	290		460		292		0	1633	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603802A - Weapons and 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, Picatinny, NJ	100	260	1-4Q	222	1-3Q	0		0	582	0
Subtotal:			100	260		222		0		0	582	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	In House	OPMSA	167	135	1-4Q	170	1-4Q	100	1-4Q	0	572	0
b . TDY	In House	OPMSA	20	25	1-4Q	10	1-4Q	0		0	55	0
Subtotal:			187	160		180		100		0	627	0

Project Total Cost:			1679	2247		1418		1042		0	6386	3544
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603802A - Weapons and Munitions - Adv Dev					PROJECT AS3			
COST (In Thousands)		FY 2001 Actual	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	25273	29979	26719	19952	4955	0	0	0	117197

A. Mission Description and Budget Item Justification: The Objective Individual Combat Weapon (OICW) represents the next generation of the individual weapon system for U.S. Armed Services. This modular dual barrel weapon system includes revolutionary 20mm high explosive 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 ~500 meters. The OICW provides the soldier with a 300-500% increase in hit probability to defeat point, area and defilade targets out to ~500 meters. It will dramatically increase soldier survivability and versatility. The OICW will replace selected M16 Rifles and M4 Carbines. This system supports the Legacy transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 4918 Program Development
- 5554 PDRR Development Contract-System Design, Analysis & Development-Weapon
- 10311 PDRR Development Contract-System Design, Analysis & Development-Fire Control
- 3878 PDRR Development Contract-System Design, Analysis & Development-Ammunition
- 612 PDRR Development Contract- Testing of the Weapon, Fire Control & Ammunition

Total 25273

FY 2002 Planned Program

- 3340 Program Development
- 9900 PDRR Contract - Weapon Design and Analysis
- 12539 PDRR Contract - Fire Control Design and Analysis
- 1800 PDRR Contract - Ammunition Design and Analysis

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

February 2002

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

0603802A - Weapons and Munitions - Adv Dev

PROJECT

AS3

FY 2002 Planned Program (Continued)

- 2400 PDRR Contract - System safety Testing Including Weapon, Fire Control and Ammunition

Total 29979

FY 2003 Planned Program

- 3582 Program Development
- 6800 PDRR Contract - Weapon Development and Fabrication
- 10137 PDRR Contract - Fire Control Development & Fabrication
- 5700 PDRR Contract - Ammunition Development and Fabrication
- 500 PDRR Contract - Testing of Weapon, Fire Control and Ammunition

Total 26719

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

C. Acquisition Strategy: Based on the results of an Advanced Technology Demonstration (ATD) and the objective of the Operational Requirements Document (ORD) for the OICW system, a decision was made to enter PDRR rather than Engineering and Manufacturing (EMD) in FY00. The PDRR phase (Project DAS3) is utilizing modeling and simulation, as well as, developing, building and testing of the weapon system. The program is scheduled for an Army Requirements Oversight Council (AROC) in 3Q FY02.

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
AS3

<u>D. Schedule Profile</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>
PDRR Development Contract - Weapon Design and Analysis	2Q	2Q					
PDRR Development Contract - Fire Control Design and Analysis	2Q	2Q					
PDRR Development Contract - Ammunition Design and Analysis	2Q	2Q					
Army Requirements Oversight Council		3Q					
PDRR Contract - Develop Weapon		3Q	2Q				
PDRR Contract - Fabricate Weapon				2Q			
PDRR Contract - Develop Fire Control		3Q	2Q				
PDRR Contract - Fabricate Fire Control				2Q			
PDRR Contract - Develop Ammunition		3Q	2Q				
PDRR Contract - Fabricate Ammunition				2Q			
PDRR Contract - Testing of Weapon, Fire Control and Ammunition					2Q		

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603802A - Weapons and 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	20355	2Q	26639	1-2Q	23137	1Q	18517	96128	95034
Subtotal:			7480	20355		26639		23137		18517	96128	95034

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	2260	1-4Q	1363	1-4Q	1492	1-4Q	2995	9479	0
b . ILS Support	MIPR	Multiple	200	158	1-4Q	150	1-4Q	150	1-4Q	300	958	0
c . Training and Sims	MIPR	Multiple	230	646	1-4Q	0		0		800	1676	0
d . AMSAA	MIPR	APG, MD	150	132	1-4Q	137	1-4Q	200	1-4Q	240	859	0
Subtotal:			1949	3196		1650		1842		4335	12972	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603802A - Weapons and 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, VA	400	380	1-4Q	300	1-4Q	300	1-4Q	600	1980	0
Subtotal:			400	380		300		300		600	1980	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	In House	PMSA	460	1250	1-4Q	1300	1-4Q	1350	1-4Q	1365	5725	0
b . Travel			30	92		90		90		90	392	0
Subtotal:			490	1342		1390		1440		1455	6117	0

Project Total Cost:			10319	25273		29979		26719		24907	117197	95034
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

COST (In Thousands)	FY 2001 Actual	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	6127	6399	11419	9443	9166	8792	7894	Continuing	Continuing
526 MARINE ORIEN LOG EQ AD	2213	1995	1793	3822	3899	4080	3283	Continuing	Continuing
G10 ADV TAC PWR SOURCES AD	212	3	0	0	0	0	0	0	3649
G11 ADV ELEC ENERGY CON AD	700	996	1560	1541	1549	1600	1507	Continuing	Continuing
G14 MATERIALS HANDLING EQUIPMENT - AD	182	198	195	195	195	200	200	0	1577
K39 ENVIRONMENTAL EQUIPMENT - AD	668	903	0	0	0	0	0	0	13326
K41 WATER AND PETROLEUM DISTRIBUTION - AD	2152	2304	7871	3885	3523	2912	2904	0	27314

A. Mission Description and Budget Item Justification: 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 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 systems support the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	6260	7456	8300
Appropriated Value	6317	6456	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-57	0
b. SBIR / STTR	-173	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	40	0	0
e. Rescissions	-57	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	3119
Current Budget Submit (FY 2003 PB)	6127	6399	11419

Explanation of changes:

FY03: Increase supports numerous petroleum and water systems associated with the Army Transformation.

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603804A - Logistics and Engineer Equipment - Adv Dev	PROJECT 526
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COST (In Thousands)	FY 2001 Actual	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	2213	1995	1793	3822	3899	4080	3283	Continuing	Continuing

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.

These systems support the Legacy-to-objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 600 Continued Rapidly Installed Breakwater (RIB) delivery system design.
- 1203 Conducted Theater Support Vessel (TSV) market survey and awarded TSV lease/test contract.
- 410 Developed Landing Craft Utility, Parameters and Performance Characteristics for ESP/Upgrade.

Total 2213

FY 2002 Planned Program

- 1995 Obtain Theater Support Vessel (TSV) Decision Review (pre Milestone B), develop TEMP, and verify TSV performance requirements.

Total 1995

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
526

FY 2003 Planned Program

- 1793 Continue development of programmatic documentation for TSV.

Total 1793

<u>B. Other Program Funding Summary</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, 0604804A, 461, Marine Oriented Logistics, Engineering	1398	6182	38780	10326	6831	3436	3028	Continuing	Continuing
OPA 3, R97500, Causeway Systems	26647	0	29673	0	0	0	0	0	62989
OPA 3, M11200, Logistic Support Vessel (LSV)	0	25260	0	0	0	0	0	0	47774
OPA 3, M11203, Theatre Support Vessel(TSV)	0	0	0	0	0	84043	79393	Continuing	Continuing

C. Acquisition Strategy: TSV 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.

<u>D. Schedule Profile</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>
Conceptual Development of the RIBS.	2-3Q						
Theatre Support Vessel Concept Development	2-3Q	2-3Q	2-4Q				
LCU Parameters and Performance Characteristics	2-4Q						

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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), Vicksburg, MS	445	0		0		0		0	445	0
b . TSV and LCU Engineering	MIPR	Navy (NSWC) Suffolk, VA	250	1008	2-3Q	460	2-3Q	836	2-3Q	Continue	Continue	Continue
c . RIB Transporter	MIPR	TARDEC, Warren, MI	300	0		0		0		0	300	0
d . TSV VOLPE	MIPR	VOLPE US Dept of Transportation, Cambridge, MA	0	0		50	2-3Q	50	2-3Q	Continue	Continue	Continue
e . RIB Engineering Management	MIPR	Corps of Engineers (ERDC) Vicksburg, MS	120	325	2Q	0		0		0	445	0
f . RTACTCS	N/A	CECOM (Reprogrammed by DA)	1954	0		0		0		0	1954	0
Subtotal:			3069	1333		510		886		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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 . TSV	MIPR	TACOM CBU, Warren, MI	14	5	1-2Q	19	2-3Q	78	2-3Q	Continue	Continue	Continue
b . TSV	MIPR	CASCOM, Ft. Lee, VA	14	45	2-3Q	25	2-3Q	43	2-3Q	Continue	Continue	Continue
c . TSV	MIPR	TARDEC, Warren, MI/ICI	170	0		100	2-3Q	100	2-3Q	Continue	Continue	Continue
d . TSV	MIPR	PM Force Projection, Warren, MI	192	0		0		0		Continue	Continue	Continue
Subtotal:			390	50		144		221		Continue	Continue	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 . TSV	MIPR	DTC/ATC, MD	101	320	2-3Q	200	2-3Q	176	2-3Q	Continue	Continue	Continue
b . TSV	MIPR	USATCFE, Ft. Eustis, VA	0	0	2-3Q	541	2-3Q	0		Continue	Continue	Continue
Subtotal:			101	320		741		176		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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 . TSV	MIPR	PM TSV/TARDEC, TACOM, Warren, MI	0	510	2-3Q	600	2-3Q	510	2-3Q	Continue	Continue	Continue
b . SBIR/STTR			118	0		0		0		0	118	0
Subtotal:			118	510		600		510		Continue	Continue	Continue

Project Total Cost:			3678	2213		1995		1793		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation				PE NUMBER AND TITLE 0603804A - Logistics and Engineer Equipment - Adv Dev				PROJECT G11	
COST (In Thousands)	FY 2001 Actual	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	700	996	1560	1541	1549	1600	1507	Continuing	Continuing

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

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

FY 2001 Accomplishments:

- 575 Completed Advanced Medium Mobile Power Sources (AMMPS) component advanced development. (Quantity 4)
 - 125 Began test and evaluation of AMMPS prototype components.
- Total 700

FY 2002 Planned Program

- 996 Complete testing of AMMPS prototype components.
- Total 996

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
G11

FY 2003 Planned Program

- 1560 Initiate Man Portable Power (MPP) Program

Total 1560

<u>B. Other Program Funding Summary</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>
RDT&E:PE0604804A, 194 Engine Driven Generators	4939	4966	5590	3228	3118	5574	4049	Continuing	Continuing
OPA 3, MA9800 Generators and Associated Equipment	91040	61835	79180	64895	64823	60869	56667	Continuing	Continuing

C. Acquisition Strategy: Complete advanced development and transition to engineering development and production.

<u>D. Schedule Profile</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 system AMMPS advanced component prototypes	4Q						
Begin test & evaluation of AMMPS component prototypes	4Q						
Complete testing system AMMPS components prototypes		4Q					
AMMPS MS B			1Q				
Initiate Man Portable Power (MPP) Program for 2-5kW			1Q				
Procure commercial component and fabricate sub-assemblies from MPP Program				1Q			
Initiate MPP test program on military systems (2-5kW)					1Q		
Transition MPP Program to Engineering Development						1Q	
Initiate Large Advanced Mobile Power Sources (LAMPS) Program						2Q	
Initiate testing of LAMPS components							1Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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	859	0		24	1Q	0		0	883	0
b . Generator prototypes	MIPR	CECOM-Belvoir	35	106	1Q	192	1Q	0		0	333	0
c . MPP Components	TBD	TBD	0	0		0		860	1Q	Continue	Continue	Continue
Subtotal:			894	106		216		860		Continue	Continue	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 . Generator components	In-house	CECOM In-house	250	70	1Q	0		0		0	320	0
b . Prototypes	In-house	CECOM In-house	26	324		380	1Q	0		0	730	0
c . MPP Components	MIPR	CECOM-Belvoir	0	0		0		400	1Q	Continue	Continue	Continue
Subtotal:			276	394		380		400		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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 . Prototypes	MIPR	CECOM-Belvoir	0	100	1Q	250	1Q	0		0	350	0
b . MPP Components	TBD	TBD	0	0		0		150		Continue	Continue	Continue
Subtotal:			0	100		250		150		Continue	Continue	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 . Prototypes	In-house	CECOM In-house	0	100	1Q	150	1Q	0		0	250	0
b . MPP Components	In-house	CECOM In-house	0	0		0		150	1Q	Continue	Continue	Continue
Subtotal:			0	100		150		150		Continue	Continue	Continue

Project Total Cost:			1170	700		996		1560		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation				PE NUMBER AND TITLE 0603804A - Logistics and Engineer Equipment - Adv Dev				PROJECT K41	
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COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
K41	WATER AND PETROLEUM DISTRIBUTION - AD	2152	2304	7871	3885	3523	2912	2904	0	27314

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 research and development 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 2001 Accomplishments:

- 800 Completed Lightweight Water Purifier (LWP) Testing.
- 100 Initiated LWP IPR package and production contract RFP.
- 475 Awarded LWP final contract increment.
- 100 Prepared Reverse Osmosis (RO) Element Life Extension Report.
- 152 Initiated Reverse Osmosis cyanide removal evaluation.
- 500 Investigated pre-planned product improvements (P3I) for petroleum storage and distribution systems.
- 25 Continued Program Management Support.

Total 2152

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
K41

FY 2002 Planned Program

- 345 Develop technical requirements and initiate design of advanced petroleum test kits.
 - 269 Complete preparation of LWP IPR package and production contract RFP.
 - 175 Award LWP optimization contract.
 - 200 Conduct evaluation of LWP improvements.
 - 100 Conduct market survey for the Versatile Tank and Pump Unit (VTPU).
 - 70 Program management support.
 - 500 Continue evaluation of P3I for petroleum storage and distribution systems.
 - 425 Complete reverse osmosis cyanide and Nuclear, Biological, and Chemical (NBC) agent removal evaluation.
 - 220 Reverse osmosis contaminate removal testing.
- Total 2304

FY 2003 Planned Program

- 764 (P3I) Evaluate commercially available water purification components.
 - 700 Conduct LWP Operational Test (OT).
 - 700 Continue development of advanced petroleum test kit and initiate performance testing.
 - 700 Develop, test, and evaluate VTPU engineering development models.
 - 100 Program management support.
 - 3657 Rapidly Installed Fuel Transfer System (RIFTS) demonstration and validation effort.
 - 400 Investigate advance materials for RIFTS.
 - 350 Develop technical requirements for an enhanced water quality analysis set.
 - 500 Develop technical requirements for the 4500 Gallons Per Hour (GPH) Water Purification Unit (WPU).
- Total 7871

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
K41

<u>B. Other Program Funding Summary</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, 0604804.L41, Fuels and Equipment Engineering Development	6058	3730	9763	4654	4079	5510	5497	Continuing	Continuing
OPA 3, R05600, Water Purification Systems	30383	39016	18204	21912	20151	0	0	Continuing	Continuing
OPA 3, MB6400, Quality Surveillance Equipment	2876	7641	7522	5326	4785	5208	4989	Continuing	Continuing
OPA 3, R38000, Versatile Tank and Pump Unit	0	0	0	1206	1729	4001	7497	Continuing	Continuing

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

<u>D. Schedule Profile</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>
Evaluate P3I's to petroleum storage and distribution systems.	2-4Q						
LWP Production Quality Testing (PQT).	2-4Q						
Conduct LWP Milestone C Low Rate Initial Production (LRIP) Decision.		2Q					
RO Element & Life Extension Report.	4Q						
Cyanide removal testing.	3-4Q	2-4Q					
Develop Advanced Petroleum Test Kit		1-4Q	1-4Q				
Complete LWP Initial Operation Test and Evaluation (IOT&E).			3Q				
Evaluate Water Purification Components.			1-4Q				
Market Survey for VTPU.		1Q					
Award contract for VTPU.			2Q				
Continue evaluation of P3I for petroleum storage and distribution systems and RIFTS.		1-2Q	1-2Q				
Investigate advance materials for RIFTS.			1-4Q				
Complete test and evaluation of VTPU.			2Q				

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603804A - Logistics and Engineer Equipment - Adv Dev
 PROJECT
K41

D. Schedule Profile (continued)	<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>
Continue RIFTS development effort.			1-4Q				
Perform market survey on commercial water quality analysis equipment.			2-4Q				
Perform market survey on commercial water purifiers in support of the 4500 GPH WPU.			1-3Q				
Perform analysis of alternatives on individual water purifiers		2-4Q					

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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, Warren, MI	69	0		0		0		0	69	0
b . Tactical Fuel Automation System (TFAS)	CPFF	MECO, New Orleans, LA	800	0		0		0		0	800	0
c . LWP	CPFF	MECO, New Orleans, LA	2190	475	3Q	175	2Q	0		0	2840	0
d . LWP	In-House	TARDEC, Warren, MI	0	100	1Q	100	1Q	0		0	200	0
e . Water Treatment Components	Purchase Orders	TBD	0	0		150	2Q	150	2Q	Continue	Continue	Continue
f . Advanced Petroleum Test Kit	In-House	TARDEC, Warren, MI	0	0		195	1Q	150	1Q	Continue	Continue	Continue
g . Advanced Petroleum Test Kit	CPFF	TBD	0	0		100	2Q	270	2Q	Continue	Continue	Continue
h . VTPU	In-House	TARDEC, Warren, MI	0	0		100	1Q	100	1Q	Continue	Continue	Continue
i . VTPU	CPFF	TBD	0	0		0		300	2Q	Continue	Continue	Continue
j . Petroleum Storage & Distribution & RIFTS (P3I)	In House	TARDEC, Warren, MI	0	328	2Q	350	2Q	0		0	678	0
k . RIFTS (P3I)	MIPR	ARL, APG, MD	0	0		0		350	2Q	Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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
l . RIFTS	CPFF	TBD	0	0		0		3157	2Q	Continue	Continue	Continue
m . Enhanced Water Quality Analysis Set	In-House	TARDEC, Warren, MI	0	0		0		175	2-4Q	Continue	Continue	Continue
n . 4500 GPH WPU	In-House	TARDEC, Warren, MI	0	0		0		250	2-4Q	Continue	Continue	Continue
Subtotal:			3059	903		1170		4902		Continue	Continue	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 . Water Purification Components (P3I)	In-House	TARDEC, Warren, MI	0	100	2Q	0		100	1Q	Continue	Continue	Continue
b . Advanced petroleum test kit	In-House	TACOM, Warren, MI	0	0		25	1Q	40	1Q	Continue	Continue	Continue
c . Petroleum storage and distribution (P3I)	In-House	TARDEC, Warren, MI	0	172	1Q	150	1Q	0		0	322	0
d . RIFTS	In-House	TARDEC, Warren, MI	0	0		0		300	1Q	Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
K41

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	272		175		440		Continue	Continue	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 . Fabric tank materials	MIPR	ARL, Aberdeen PG, MD	77	0		0		0		0	77	0
b . LWP	MIPR	ATEC, Aberdeen PG, MD	0	483	2Q	30	1Q	0		0	513	0
c . LWP	In-House	TARDEC, Warren, MI	0	285	2Q	184	2Q	0		0	469	0
d . LWP	MIPR	NFESC, Port Huaneme, CA	0	32	2Q	125	1Q	0		0	157	0
e . Water Treatment components (P3I)	In-House	TARDEC, warren, MI	0	152	2Q	170	2Q	114	1Q	Continue	Continue	Continue
f . Water Treatment components (P3I)	MIPR	ATEC, Aberdeen PG, MD	0	0		0		200	2Q	Continue	Continue	Continue
g . Water Treatment components (P3I)	MIPR	DPG, Dugway, UT	0	0		230	2Q	0		0	230	0
h . Water Treatment components (P3I)	MIPR	NFESC, Port Huaneme, CA	0	0		95	2Q	200	2Q	Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
K41

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
i . Advanced petroleum test kit	MIPR	ATEC, Aberdeen PG, MD	0	0		0		200	2Q	Continue	Continue	Continue
j . VTPU	MIPR	ATEC, Aberdeen PG, MD	0	0		0		300	2Q	Continue	Continue	Continue
k . LWP	MIPR	TEXCOM, Ft Hood, TX	0	0		30	2Q	700	2Q	Continue	Continue	Continue
l . Enhanced Water Quality Analysis Set	In-House	TARDEC, Warren, MI	0	0		0		175	2-4Q	Continue	Continue	Continue
m . 4500 GPH WPU	In-House	TARDEC, Warren, MI	0	0		0		250	2-4Q	Continue	Continue	Continue
Subtotal:			77	952		864		2139		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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, Warren, MI	23	0		0		0		0	23	0
b . Advanced Petroleum Test Kit	InHouse	TACOM, Warren, MI	0	0		25	1Q	40	1Q	Continue	Continue	Continue
c . Program Management Support	InHouse	TACOM, Warren, MI	101	25	2Q	70	1Q	100	1Q	Continue	Continue	Continue
d . RIFTS	In-House	TARDEC, Warren, MI	0	0		0		200	1Q	Continue	Continue	Continue
e . RIFTS (P3I)	In-House	TARDEC, Warren, MI	0	0		0		50	1Q	Continue	Continue	Continue
Subtotal:			124	25		95		390		Continue	Continue	Continue
Project Total Cost:			3260	2152		2304		7871		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603805A - Combat Service Support Control System Evaluation a						PROJECT 091	
COST (In Thousands)	FY 2001 Actual	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	13627	8621	8971	9138	9122	4289	4292	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Combat Service Support Control System (CSSCS) is the Combat Service Support Command & Control component of the Army Battle Command System (ABCS). CSSCS is a network of workstations providing comprehensive combat service support capabilities and exchanging 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 2001 Accomplishments:

- 3679 Continued Version 5 development.
- 1026 Provided ABCS System Engineering and Integration support.
- 3939 Prepared for and conducted Army Warfighting Experiments, achieved First Digitized Division (FDD), supported IBCT, and worked towards First Digitized Corps.
- 813 Continued incremental software build releases for added functionality, for improved ABCS integration and to better support CINC requirements for operational deployments. Re-engineered report and input forms to a web-based client.
- 4170 Continued Version 4 development. Completed Version 4.6 in time for integration into ABCS 6.2.1 and use in Division Capstone Exercise (DCXII).

Total 13627

FY 2002 Planned Program

- 1014 Complete Version 4 development.
- 4070 Continue Version 5 development.
- 2659 Support initial BCT requirements, prepare for and conduct Army Warfighting Experiments, and extend work to achieve First Digitized Corps.
- 878 Continue incremental software build releases for both added functionality, improved ABCS integration, and to better support CINC requirements for operational deployments.

Total 8621

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
091

FY 2003 Planned Program

- 4692 Continue Version 5 development and begin technical testing.
 - 3056 Support interim BCT requirements, prepare for and conduct Army Warfighting Experiments, and begin the final phase of work to achieve the First Digitized Corps.
 - 1022 Continue incremental SW build releases for added functionality, improved ABCS integration, and to better support CINC requirements for operational deployments.
 - 201 ABCS System Engineering and Integration Efforts.
- Total 8971

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
President's Previous Budget (FY 2002 PB)	13627	8696	8784
Appropriated Value	13753	8696	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-75	0
b. SBIR / STTR	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-126	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	187
Current Budget Submit (FY 2003 PB)	13627	8621	8971

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603805A - Combat Service Support Control System Evaluation a	PROJECT 091
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<u>C. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Procurement, OPA 2 (W34600)	26956	25008	24989	24922	9906	20793	30656	Continue	Continue
Standardized Integrated Command Post Systems (SICPS) (BZ9962)	0	2069	1718	5263	4737	4092	2960	Continue	Continue
Spares (BS9706)	0	0	0	0	0	0	0	Continue	Continue

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 development. Hardware is procured from the Common Hardware Systems -2 (CHS-2) contract with General Dynamics (GD).

<u>E. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete V4		1Q					
Develop V5	1-4Q	1-4Q	1-4Q	1-2Q			
First Digitized Division (FDD) IOC, [ABCS 6.2/CSSCS 4.6]	1Q						
V5 releases 1 through 4			2-4Q	1-3Q			
Incremental SW Build Releases	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Operational Assesment/Test (OA/OT) V5.0				4Q	1Q		
CSSCS Integration and Test with ABCS (All Versions)		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603805A - Combat Service Support Control System Evaluation a	PROJECT 091
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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	S/TM	TRW, Carson, CA	100333	7877	1-2Q	5370	1-2Q	0		0	113580	113580
b . Training Development	C/TM	Lockheed Martin, Tinton Falls, NJ	6469	1324	1Q	1555	1Q	1918	1Q	Continue	Continue	Continue
c . ABCS SE&I Effort	MIPR	PEO C3S, Ft Monmouth, NJ	6459	1026	1-2Q	0		201	1-2Q	0	7686	7686
d . Future SW Development	C/CPAF	TBS	0	0		0		5068	1-2Q	Continue	Continue	Continue
e . GFE	MIPR	Various	3601	0		0		0		0	3601	3601
Subtotal:			116862	10227		6925		7187		Continue	Continue	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 . CECOM, Matrix	MIPR	FT. Monmouth , NJ & Ft. Belvoir, VA	4324	830	1Q	0		0		0	5154	5154
b . Technical Support	MIPR	EER, Fort Lee, VA	7675	646	1-2Q	0		0		0	8321	8321
c . Acquisition Support	MIPR	LMI, McLean, VA	1075	0		0		0		0	1075	1075

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
091

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:			13074	1476		0		0		0	14550	14550

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		Continue	Continue	Continue
b . EPG	MIPR	VARIOUS	1028	0		0		0		0	1028	1028
c . ATEC	MIPR	VARIOUS	1628	0		0		0		Continue	Continue	Continue
Subtotal:			8231	0		0		0		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603805A - Combat Service Support Control System Evaluation a	PROJECT 091
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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 Office Management	In House	FT. BELVOIR, VA	15081	1924	1-4Q	1696	1-4Q	1784	1-4Q	Continue	Continue	Continue
Subtotal:			15081	1924		1696		1784		Continue	Continue	Continue
Project Total Cost:			153248	13627		8621		8971		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

COST (In Thousands)	FY 2001 Actual	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	14970	19872	10398	10245	11309	10687	11076	Continuing	Continuing
808 DOD DRUG & VACC AD	4484	4038	5250	5285	5286	4317	4415	Continuing	Continuing
811 MIL HIV VAC&DRUG DEV	5529	6286	0	0	0	0	0	0	17752
836 COMBAT MEDICAL MATL AD	4134	4164	4260	4210	4258	4198	4394	Continuing	Continuing
837 SOLDIER SYS PROT-AD	823	884	888	750	1765	2172	2267	Continuing	Continuing
MD4 FUTURE MEDICAL SHELTER	0	3500	0	0	0	0	0	0	3500
MD5 IMED TOOLS RURAL MOBILE COMMS	0	1000	0	0	0	0	0	0	1000

A. Mission Description and Budget Item Justification: This program element (PE) funds the advanced development 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 materiels. The PE funds advanced development 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 advanced development 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 advanced development 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 2003 are described below:

Project 837, (\$888) 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.

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	15367	15506	16221
Appropriated Value	15509	20006	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-134	-5823
b. SBIR / STTR	-398	0	0
c. Omnibus or Other Above Threshold Adjustments	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-141	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	0
Current Budget Submit (FY 2003 PB)	14970	19872	10398

Significant Changes:

FY02- Congressional Adds totaling \$4500K (as noted below) added to this PE.

FY03 adjustment of (\$5823K) transferring responsibility for management and oversight of HIV R&D efforts to the National Institutes of Health (NIH).

FY02 Congressional Adds:

Project MD5 (+\$1000) IMED tools Rural Mobile Comms Platform - The objective of this one year add is to develop medical informatics decision support advances for use in battlefield and first responder settings.

Project MD4 (+\$3500) Future Medical Shelter - The objective of this one year add is to develop and conduct an evaluation of Future Medical Shelter System Prototypes.

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603807A - Medical Systems - Adv Dev						PROJECT 808	
COST (In Thousands)	FY 2001 Actual	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	4484	4038	5250	5285	5286	4317	4415	Continuing	Continuing

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), and registration by the Environmental Protection Agency (EPA). Major advanced development contractors include Southern Research Institute, Birmingham AL; South Florida Research Institute, Miami, FL; and Kenya Medical Research Institute, Nairobi, Kenya. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 981 Completed and/or continued studies, and conducted reviews of malarial/antimalarial vaccines, drugs, and diagnostics:
 - Completed phase 1 safety study for RTS,S malaria vaccine.
 - Continued developmental testing of prototype kit for the rapid detection of Plasmodium-infected mosquitoes.
 - Conducted developmental testing of prototype malaria rapid diagnostic device.
- 661 Conducted trials and reviews of diarrheals:
 - Completed a phase 1 safety trial for Shigella flexneri vaccine in Bangladesh; chosen for the high endemic occurrence of this disease and suitable medical infrastructure.
- 1167 Conducted evaluations and trials of grouped infectious disease vaccines and drugs (Hepatitis E, and Leishmania):
 - Conducted a phase 2 multi-year field trial in Nepal, an area of high endemicity, to evaluate the effectiveness of the Hepatitis E vaccine.
 - Conducted animal potency evaluation of Leishmania skin test components for the diagnosis of Leishmania infections.
 - Manufactured paromomycin/gentamicin topical antileishmanial cream for future evaluation in clinical trials.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

0603807A - Medical Systems - Adv Dev

PROJECT

808**FY 2001 Accomplishments: (Continued)**

- 1082 Conducted or completed evaluations of Flavivirus vaccines:
 - Completed development of human challenge model for the clinical evaluation of the efficacy of dengue tetravalent vaccines.
 - Completed sequencing and cloning of dengue types 2, 3, and 4 for use in evaluation of infectious clone vaccines.
 - Conducted preclinical effectiveness evaluation of a prototype infectious clone dengue vaccine.
- 593 Conducted or continued appropriate testing and review of insect vector control products:
 - Continued developmental testing of a prototype lethal ovitrap for dengue vectors.
 - Conducted developmental testing of camouflage face paint with insect repellent and reduced infrared signature.

Total 4484

FY 2002 Planned Program

- 855 Conduct trials, testing, and reviews of malarial/antimalarial vaccines, drugs, and diagnostics:
 - Conduct phase 1 clinical trial of new dose regimen of RTS,S malaria vaccine with a new adjuvant.
 - Continue developmental testing of prototype kit for the rapid detection of Plasmodium-infected mosquitoes.
 - Conduct Milestone (MS) C In Process Review (IPR) for the malaria rapid diagnostic device program.
- 184 Conduct and/or complete clinical trials, evaluations, and reviews of diarrheal vaccines:
 - Conduct expanded phase 2 safety and efficacy field trial for Shigella flexneri vaccine in Bangladesh and conduct MS B IPR.
 - Conduct a program initiation IPR for the Shigella dysenteriae vaccine program.
- 1556 Conduct trials and reviews for grouped infectious disease vaccines and drugs (Hepatitis E, Leishmania, Group B Meningitis, and Japanese Encephalitis):
 - Continue a multi-year phase 2 field trial in Nepal to evaluate the effectiveness of the Hepatitis E vaccine.
 - Produce phase 1 and phase 2 Good Manufacturing Practices (GMP) test kits, and conduct a phase 1 safety trial for the Leishmania skin test program.
 - Conduct phase 2 clinical trial of paromomycin/gentamicin topical antileishmanial cream to treat Old World leishmaniasis.
 - Conduct a program initiation IPR for the Group B Meningitis vaccine program.

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

February 2002

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

0603807A - Medical Systems - Adv Dev

PROJECT

808

FY 2002 Planned Program (Continued)

- 1377 Conduct phase 1 safety evaluation of a prototype infectious clone dengue Flavivirus vaccine.
- 66 Proceed with developmental testing and evaluation of insect vector control products:
 - Complete developmental testing of camouflage face paint with insect repellent and reduced infrared signature and conduct MS B/C IPR.

Total 4038

FY 2003 Planned Program

- 294 Conduct reviews, evaluations and trials of malarial/antimalarial vaccines, drugs, and diagnostics:
 - Conduct a MS B IPR for the RTS,S malaria vaccine.
 - Conduct a MS C IPR for the rapid detection of Plasmodium-infected mosquitoes program.
 - Conduct a program initiation IPR for artemisinin acid for the treatment of severe and complicated malaria.
- 840 Conduct and complete safety evaluations of diarrheal vaccines:
 - Conduct a MS B IPR for the Shigella sonnei vaccine.
 - Complete phase 2 clinical efficacy evaluation of Shigella sonnei vaccine for the prevention of traveler's diarrhea.
 - Conduct a phase 1 clinical safety evaluation of the Shigella dysenteriae vaccine.
- 2469 Conduct evaluation and review of grouped infectious disease vaccines and drugs (Japanese Encephalitis, Hepatitis E, Group B Meningitis, Leishmania and Hantavirus):
 - Complete a multi-year phase 2 field trial in Nepal to evaluate the effectiveness of Hepatitis E vaccine.
 - Conduct a MS B IPR for the Leishmania skin test program.
 - Complete the phase 2 clinical trial of paromomycin/gentamicin topical antileishmanial cream to treat Old World leishmaniasis.
 - Conduct phase 1 clinical safety evaluation of the Group B Meningitis vaccine.
 - Conduct a program initiation IPR and transition the hantavirus vaccine program to the next phase of development.
- 1518 Conduct phase 2 challenge evaluation of an infectious clone dengue tetravalent Flavivirus vaccine.
- 129 Complete test and evaluation, and conduct review for insect vector control products:
 - Complete developmental testing of a prototype lethal ovitrap for dengue vectors.

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
808

FY 2003 Planned Program (Continued)

- Conduct MS B/C IPR for the lethal ovitrap for dengue vectors program.
- Preplanned product improvement to develop new dispensers for camouflage face paint with insect repellent and reduced infrared signature.

Total 5250

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

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

<u>D. Schedule Profile</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>
Leishmania Skin Test (MS B)			1Q				
Shigella flexneri (MS B)		2Q					
Paromomycin/Gentamicin (MS B)					2Q		
Hepatitis E vaccine (MS B)				1Q			
RTS,S malaria vaccine (MS B)			1Q				
Malaria Rapid Diagnostic Device (MS B)		2Q					
Camouflage face paint (MS B/C)		3Q					
Dengue tetravalent vaccine (MS B)						1Q	
Lethal ovitrap for dengue-infected mosquitoes (MS B/C)			2Q				
Detection of Plasmodium-infected mosquitoes (MS B/C)			1Q				
Shigella sonnei vaccine (MS B)			1Q				
Group B meningitis vaccine (MS B)		3Q			3Q		
Shigella dysenteriae vaccine (MS B)		3Q				3Q	

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

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			1234	1092		987		1231		Continue	4544	0
Subtotal:			1234	1092		987		1231		Continue	4544	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	118		106		132		Continue	592	0
Subtotal:			236	118		106		132		Continue	592	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603807A - Medical Systems - Adv Dev	PROJECT 808
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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			4393	2820		2570		3206		Continue	12989	0
Subtotal:			4393	2820		2570		3206		Continue	12989	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	454		410		511		Continue	2370	0
Subtotal:			995	454		410		511		Continue	2370	0

Project Total Cost:			6858	4484		4073		5080		Continue	20495	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603807A - Medical Systems - Adv Dev	PROJECT 811
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COST (In Thousands)	FY 2001 Actual	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	5529	6286	0	0	0	0	0	0	17752

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 2001 Accomplishments:

- 50 Completed phase 1 clinical trials to select optimal dose levels of boost component of HIV vaccines (clade E).
 - 2422 Continued multi-year phase 2 clinical trials to down-select among three boost HIV vaccine component candidates (clade E).
 - 3057 Conducted field site development. Conducted studies to identify potential subject populations for involvement in phase 3 pivotal clinical trial of prime-boost HIV vaccine (clade E).
- Total 5529

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 B IPR on prime-boost HIV vaccine (clade E).
 - 3108 Plan and begin multi-year phase 3 clinical trial to determine effectiveness of prime-boost HIV vaccine (clade E).
- Total 6286

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
811

FY 2003 Planned Program

Program transferred to National Institutes of Health.

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

C. Acquisition Strategy: Test and evaluate commercially developed vaccine candidates in government-managed trials.

D. Schedule Profile

	<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>
HIV Vaccine (MS B)		2Q					

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

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	595		846		0		Continue	5139	0
Subtotal:			3698	595		846		0		Continue	5139	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	868	0
Subtotal:			157	339		372		0		0	868	0

Remarks: Not Applicable

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603807A - Medical Systems - Adv Dev	PROJECT 811
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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 and Evaluation	Government Laboratory	Walter Reed Army Institute of Research (WRAIR), Silver Spring, MD	2037	4497		4961		0		0	11495	0
Subtotal:			2037	4497		4961		0		0	11495	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	250	0
Subtotal:			45	98		107		0		0	250	0

Remarks: Not Applicable

Project Total Cost:			5937	5529		6286		0		Continue	17752	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603807A - Medical Systems - Adv Dev						PROJECT 836	
COST (In Thousands)	FY 2001 Actual	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	4134	4164	4260	4210	4258	4198	4394	Continuing	Continuing

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 includes Mainstream Engineering Corp, Energy Systems Technology, Inc. Mission Medical; IGR Enterprises, Inc; Bell Products and American Red Cross. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 1925 Developed solicitation package, published a request for proposal and secured commercial partner for Hemostatic Dressing (HD) development.

- 110 Developed and tested medical evacuation systems.
 - Developed a lightweight platform, Special Medical Emergency Evacuation Device (SMEED), to carry military-approved commercial off-the-shelf medical devices for patient treatment during evacuation.

- 1997 Conducted transitions and product evaluations of field medical treatment and treatment aid devices.
 - Integrated prototype modules into a portable Ceramic Oxygen Generator System (COGS) to demonstrate acceptable medical oxygen generation capability for individual patients.
 - Began evaluation of the use of oxygen concentrators and oxygen rebreathing devices as a step towards development of the Ventilatory Assist Device (VAD) for operating room use.
 - Designed and fabricated lightweight motors and compressors for the Pressure Swing Adsorption Oxygen Generator (PSAOG) for multiple patients in a ward-like setting.
 - Completed a MS A and a Program Initiation for the Dental Field Treatment and Operating System (DEFTOS), and began reliability/survivability tests.

 - Completed a MS A and a Program Initiation for the One-Handed Tourniquet.

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

February 2002

BUDGET ACTIVITY

4 - Demonstration/validation

PE NUMBER AND TITLE

0603807A - Medical Systems - Adv Dev

PROJECT

836

FY 2001 Accomplishments: (Continued)

- Completed a market investigation for the Dental Filmless Imaging System (DFIS).
- 102 Prepared and conducted tests and investigations for medical monitoring and imaging systems.
- Integrated the Warrior Medic "911" button software into the Land Warrior System.

Total 4134

FY 2002 Planned Program

- 1947 Conduct animal trials required by FDA and prepare Investigational New Drug application for FDA for the Hemostatic Dressing.
- 302 Demonstrate and evaluate medical evacuation systems.
 - Conduct an air-worthiness evaluation of the SMEED.
- 1748 Conduct testing and Milestone In Process Reviews (IPRs) for field medical treatment and treatment aid devices.
 - Perform COGS technical testing, and conduct a MS A and Program Initiation.
 - Complete evaluation of the use of oxygen concentrators and oxygen rebreathing devices for operating room use as a step towards development of the VAD.
 - Integrate compressor design and the molecular sieve bed into a PSAOG. Conduct a Program Initiation IPR.
 - Complete the reliability/survivability tests for the DEFTOS and conduct a MS B/C.
 - Down select to single One-Handed Tourniquet design.
- 167 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 B/C.
 - Conduct MS C to recommend Dental Filmless Imaging System for procurement.

Total 4164

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
836

FY 2003 Planned Program

- 1940 Continue testing of the Hemostatic Dressing and prepare for a MS B.
- 493 Continue development of medical evacuation systems.
- Complete testing of the SMEED system.
- 1729 Perform development, testing and IPRs for field medical treatment/treatment aid devices.
- Conduct a pre-production development for the COGS.
- Conduct the development of the VAD for anesthesia and ventilation at forward surgical team sites.
- Perform a detail testing of the PSAOG.
- 98 Conduct testing/IPRs on medical monitoring and imaging systems.
- Complete the Warrior Medic System initial operational test and evaluation. Prepare for a MS B/C IPR.

Total 4260

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.

<u>D. Schedule Profile</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>
Ceramic Oxygen Generator System (MS A and Program Initiation IPR)		1Q					
Pressure Swing Adsorption Oxygen Generator (Program Initiation IPR)		1Q					
One-Handed Tourniquet (MS A with program initiation)	4Q						
Dental Filmless Imaging System (MS C)		2Q					
Warrior Medic systems - MS B/C			4Q				

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
836

D. Schedule Profile (continued)	<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>
Hemostatic Dressing (MS B)			1Q				
Dental Field Treatment and Operating System (MS A with program initiation); (MS B/C)	3Q	4Q					

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

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 . Hemostatic Dressing		Red Cross, Charlotte, N.C.	0	1675	4Q	1947		1940		Continue	5562	0
b . No other contract exceeds \$1M			11824	0		0		0		0	11824	0
Subtotal:			11824	1675		1947		1940		Continue	17386	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)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603807A - Medical Systems - Adv Dev	PROJECT 836
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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
			0	0		0		0		0	0	0
Subtotal:												

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 \$M individually.			0	2459		2217		2320		0	6996	0
Subtotal:												

Project Total Cost:			11824	4134		4164		4260		Continue	24382	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603850A - Integrated Broadcast Service (JMIP/DISTP)					PROJECT 472			
COST (In Thousands)		FY 2001 Actual	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	1968	1962	1948	1935	0	0	0	7813

A. Mission Description and Budget Item Justification: The Integrated Broadcast Service (IBS) is the worldwide DoD standard network for transmitting tactical and strategic intelligence and targeting data within a common format and migrating to a single family of Joint Tactical Terminals (JTT) for improved operational jointness. The 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, with a "common family" of IBS modules (both hardware and software). This is required to implement the IBS Plan and consolidate/eliminate duplicative efforts. The Joint Tactical Terminal (JTT) program leverages, to the maximum extent possible, early tech-based efforts initiated by organizations such as the National Reconnaissance Office (NRO). For efforts that contribute to increased value in performance or sustainment, management control will transition to the JTT Joint Program Office (JPO) and capabilities will be integrated into the CIBS-M family of hardware and software modules. The CIBS-M family of modules will be the "sole" provider, ensuring continued IBS interoperability to a variety of tactical receivers across DoD and the services. CIBS-M will be provided to Joint Tactical Radio System (JTRS) JPO for inclusion into the the JTRS Library to meet intelligence broadcast requirements. This program funds the design, development, test and evaluation of initial CIBS-M hardware and software modules, as well as implementing performance expanding modifications to the family of Joint Tactical Terminal (JTT) equipment, to training, equipping and supporting the warfighter with improved Joint Readiness and Interoperability. This terminal serves as a node capturing and disseminating encrypted intelligence broadcasts to commanders in a network centric environment.

This system supports the legacy path of the Transformation Campaign Plan (TCP) and lays the foundation for the CIBS-M effort in support of the Objective Force.

FY 2001 Accomplishments:

FY 2001 program is funded under JTT/CIBS-M (PE 0604739A, Project 702).

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603850A - Integrated Broadcast Service (JMIP/DISTP)	PROJECT 472
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FY 2002 Planned Program

- 750 Conduct Initial Operational Test & Evaluation (IOT&Es) on JTT variants to include Briefcase and Seniors for Receive/Transmit functionality.
- 518 Conduct Live interoperability test for SIDS/TRIXS in support of JTT-B IOT&E
- 200 Conduct Training in support of JTT IOT&E
- 500 Continue Integrated Broadcast Service (IBS) Format Development/Common Message Format to support migration to the IBS Worldwide standard DOD Network

Total 1968

FY 2003 Planned Program

- 1762 Continue IBS Format Development/Implementation Common Message Format to support migration to the IBS Worldwide standard DOD Network
- 200 Joint Interoperability Test Command (JITC) Certification of Block 3.0 development for DAMA compliancy

Total 1962

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY 2002 PB)	0	1985	1967
Appropriated Value	0	1985	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-17	0
b. SBIR / STTR	0	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	0	0	0
Adjustments to Budget Years Since FY 2002 PB	0	0	-5
Current Budget Submit (FY 2003 PB)	0	1968	1962

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603850A - Integrated Broadcast Service (JMIP/DISTP)	PROJECT 472
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<u>C. Other Program Funding Summary</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>
V29600 Other Procurement, Army - JTT/CIBS-M (Tiara),	6509	18700	4824	9477	6133	10519	0	0	79970
PE 0604739A, Project 702	6005	0	0	0	0	0	0	0	10524

C. Other Program Funding Summary: The RDTE for this joint Service program is funded from Army Projects 702 and 472, but also supports Air Force and Navy systems. The required procurement quantity for each Service is funded directly by the respective Services.

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 RDTE program will fund the design and development of P3I (priority to those objective requirements in the JTT Operational Requirements Document (ORD) that have not been satisfied). A competitive Fixed Firm Price (FFP) contract was awarded in FY98 consisting of a single award with 9 options. The contract also supports a 10 year warranty. Market Research is currently being conducted to determine if the latest technology is supported within the current contract.

<u>E. Schedule Profile</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>
IBS Waveform Development	3-4Q	1-4Q	1-2Q				
IBS Waveform Demonstration			3-4Q				
Conduct IOT&E (Receive only/Briefcase variants)		2-3Q					
Milestone C Decision for Receive Only		3Q					
Integrated Broadcast System FOTE			4Q	1-2Q			
Conduct IOT&E on Transmit & Receive Functionality		3Q					

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603850A - Integrated Broadcast Service (JMIP/DISTP)	PROJECT 472
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E. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Milestone C Decision for Transmit & Receive Functionality		4Q					

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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	CPEFF	Raytheon, St. Petersburg, FL	0	0		500	2Q	1490	1Q	Continue	Continue	Continue
Subtotal:			0	0		500		1490		Continue	Continue	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	HQ CECOM, NJ	0	0		145	1Q	146	1Q	Continue	Continue	Continue
Subtotal:			0	0		145		146		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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 . IOT&E support	MIPR	Various	0	0		1202	1-4Q	0		Continue	1202	Continue
b . JTIC Certification			0	0		0		200	2-3Q	0	200	0
Subtotal:			0	0		1202		200		Continue	1402	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 JTT, Ft. Monmouth, NJ	0	0		121	1Q	126	1Q	Continue	Continue	Continue
Subtotal:			0	0		121		126		Continue	Continue	Continue

Project Total Cost:			0	0		1968		1962		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603854A - Artillery Systems - Dem/Val						PROJECT 505	
COST (In Thousands)	FY 2001 Actual	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	341765	444091	246465	0	0	0	0	0	2121702

A. Mission Description and Budget Item Justification: This supports the Crusader Advanced Development Program. The Crusader system is the Army's next generation self-propelled howitzer (SPH) and Artillery Resupply Vehicles (RSVs) and is the first installment of the Objective Force in the Army Transformation. Crusader has significantly increased capabilities in the areas of lethality, mobility, survivability, resupply, command and control and sustainability by capitalizing on mature, state-of-the-art technologies. The combination of Crusader's unique capabilities, including vehicle speed, rate of fire, range, and exploitation of computers and communications yield unparalleled fire support capabilities for US forces. The Crusader vehicles have been designed specifically to facilitate air transportability - with a minimum of a combination of any two vehicles air transportable in either a C5 or C17 aircraft. The mix of resupply vehicles (tracked and wheeled) also gives the Commander in theater additional flexibility in responding to the threat, by adapting his Tactics, Techniques and Procedures with the most appropriate utilization and interaction of the tracked and wheeled resupply vehicles. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 308647 Product Development: The lighter weight configuration vehicle design progressed toward detailed design. Completed most subsystem level Preliminary Design Reviews, with a System Level PDR scheduled for 1QFY02. Buildup of the hardware and software that supported the Early User Experimentation continued on schedule - Crusader Integrated Test Stand is being assembled and checked out while Release 3 software was in the process of its checkout and migration to target electronic hardware.
- 20200 Support and Management: Continued project management efforts; including engineering analysis, product development team support and engineering management activities. Continued coordination of activities toward successful completion of MS B.
- 12918 Test and Evaluation: Continued to test the vehicles at Yuma Proving Grounds. Over 2500 rounds have been fired from the fully automated vehicle, while over 2328 rounds were fired from a surrogate vehicle equipped with the XM297 armament system. Performed extended duration, reliability testing of ammunition handling subsystems. Continued survivability risk reduction testing. Purchased ammunition and propellant for program testing.

Total 341765

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration/validation**0603854A - Artillery Systems - Dem/Val****505****FY 2002 Planned Program**

- 410614 Product Development: Initiated Detailed Design efforts for the 40 ton vehicles under the Crusader PDRR contract. Complete Element and System level Preliminary Design Reviews. Continue integration and risk reduction of critical technologies. Complete checkout and test of Software Release 3. Accept delivery of new prototype Powerpack/Drive Train and initiate subsystem testing. Continue to mature weight reduction initiatives. Complete configuring the Crusader Integrated Test Stand (CITS) and initiate demonstration of system performance/performance growth.
- 19636 Support and Management: Continue project management efforts; to include engineering analysis, product development team support and engineering management activities. Continue coordination and development of MS B documentation and activities toward successful 3QFY03 review.
- 13841 Test and Evaluation: Continue testing of SPH 1 and XM297 Cannon testing at YPG. Fired 3925 rounds to date on SPH1. Initiate PDRR Performance test and evaluation of Powerpack. Continue Survivability Risk Reduction Testing. Purchase of ammunition and propellant for program testing. Conduct Early User Experimentation. Complete Reliability Testing at GDAS. Initiate demonstration of Milestone B Exit Criteria.

Total 444091

FY 2003 Planned Program

- 232440 Product Development: Complete Detailed Design efforts under Crusader PDRR contract phase. Complete efforts in support of integration and risk reduction of critical technologies under PDRR contract phase. Checkout and test Software Release 5 on the Integrated Crusader Emulator (ICE). Start integrating new Powerpack/Drive Train into chassis. Start Powerpack SDD deliveries. Complete component Maturation/Weight reduction initiatives under PDRR contract phase. Configure Turret and Resupply Test Stands and demonstrate system performance/performance growth.
- 9218 Support and Management: Complete project management efforts: to include engineering analysis, product development team support and engineering management activities under PDRR phase. Complete coordination and development of Milestone B documentation. Conduct Milestone B.
- 4807 Test and Evaluation: Complete testing of SPH 1 and XM297 Cannon at YPG under PDRR contract phase. Finalize Milestone B Performance of Powerpack. Complete Survivability Risk Reduction Testing under PDRR contract phase. Purchase ammunition and propellant for program testing. Complete Milestone B Exit Criteria Demonstration.

Total 246465

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603854A - Artillery Systems - Dem/Val

PROJECT
505

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	352051	447949	246377
Appropriated Value	355309	447949	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-3858	0
b. SBIR / STTR	-10286	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-3258	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	88
New Army Transformation Adjustment	0	0	0
Current Budget Submit (FY 2003 PB)	341765	444091	246465

<u>C. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, BA5, Army, PE 0604854, D503	1	39120	228747	452838	424772	495468	193890	32300	1867136
Procurement, WTCV, Army, G83500	0	0	0	24702	94221	258300	641564	3347760	4366547
Procurement, WTCV, Army, G83600	0	0	0	13237	52933	116103	250563	1222518	1655354
RDTE, BA5, Army, PE 0604854, D2KT	218	197	397	1188	199	3288	5370	30200	41142
Procurement, Ammo, Army, ER 8021	39565	71910	122411	108802	99327	80070	184940	Continue	Continue
Procurement, WTCV, Army, G83601	0	0	0	5876	23462	53043	115285	585458	783124
Procurement, OPA, Army, D16500*	0	0	0	0	0	3697	10170	80594	94461

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration/validation

0603854A - Artillery Systems - Dem/Val

505

C. Other Program Funding Summary: *Funding summary represents a portion of the overall funding in D16500, Other Procurement, Army. This funding is associated with the ReSupply Vehicle - Wheeled (RSV-W).

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 SDD eliminated inefficiencies in ramping down/up during the milestone decision. During the period of Oct-Dec 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.

<u>E. Schedule Profile</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>
Delivery of SPH 1 & initiate testing *							
Select Powerpack/Drivetrain Developer *							
Delivery of prototype Powerpack/Drivetrain		4Q					
Delivery of Gen 1 Electronics *	3Q						

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603854A - Artillery Systems - Dem/Val	PROJECT 505
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<u>E. Schedule Profile (continued)</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Milestone B			3Q				

*Milestone completed

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603854A - Artillery Systems - Dem/Val

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	226187	1Q	348766	1Q	190260	1Q	0	1621184	0
b . Systems Development Engineering	PO	PM Crusader, Picatinny Arsenal, NJ	25434	8365	1Q	8965	1Q	4672	1Q	0	47436	0
c . Systems Development Engineering	PO	ARDEC, Picatinny Arsenal, NJ	64768	14014	1Q	19015	1Q	10053	1Q	0	107850	0
d . Systems Development Engineering	PO	TACOM, Warren, MI	3004	624	1Q	684	1Q	345	1Q	0	4657	0
e . Systems Development Engineering	PO	ARL, Adelphi, MD	6532	2691	1Q	1323	1Q	476	1Q	0	11022	0
f . Systems Development Engineering	PO	Various OGAs	9573	5685	1Q	7771	1Q	3934	1Q	0	26963	0
g . Systems Development Engineering	Various	Various contracts	16802	51081	1-2Q	24090	1-2Q	22700	1-2Q	0	114673	0
Subtotal:			982084	308647		410614		232440		0	1933785	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603854A - Artillery Systems - Dem/Val

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	ARDEC, Picatinny Arsenal, NJ	37577	11387	1Q	10300	1Q	5160	1Q	0	64424	0
b . Integrated Logistics Support	PO	RIA, Rock Island, IL	911	281	1Q	213	1Q	111	1Q	0	1516	0
c . Development Support	PO	TACOM, Warren, MI	7875	2111	1-2Q	2126	1-2Q	1257	1-2Q	0	13369	0
d . Development Support	PO	ARL, Adelphi, MD	3275	480	1-2Q	880	1-2Q	285	1-2Q	0	4920	0
e . Development Support	PO	Various OGAs	4815	1713	1-3Q	1540	1-3Q	628	1-3Q	0	8696	0
f . Development Support	Various	Various contracts	10692	1132	1-3Q	869	1-3Q	206	1-3Q	0	12899	0
Subtotal:			65145	17104		15928		7647		0	105824	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

4 - Demonstration/validation

0603854A - Artillery Systems - Dem/Val

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	5707	1-3Q	7222	1-3Q	3775	1-3Q	0	26709	0
b . Ammunition and propellant	PO	Various	22981	7211	1-3Q	6619	1-3Q	1032	1-3Q	0	37843	0
Subtotal:			32986	12918		13841		4807		0	64552	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	554	1-2Q	875	1-2Q	175	1-2Q	0	3326	0
b . Project Management Support	SS/FP	GSA, VA	405	141	1-2Q	145	1-2Q	74	1-2Q	0	765	0
c . Project Management Support	SS/FP	System Research & Integration, Inc., VA	130	0		0		0		0	130	0
d . Project Management Support	SS/FP	Camber, Inc., NJ	440	122	1-2Q	63	1-2Q	0	1-2Q	0	625	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603854A - Artillery Systems - Dem/Val

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	784	1-2Q	803	1-2Q	401	1-2Q	0	4101	0
f . Project Management Support	SS/FP	Robbins Gioia, VA	253	0		0		0		0	253	0
g . Project Management Support	SS/FP	Genisys, TX	191	8	1-2Q	0		0		0	199	0
h . Project Management Support	SS/FP	PRC, VA	0	116	1-2Q	135	1-2Q	70	1-2Q	0	321	0
i . Systems Engineering Support	SS/FP	PRC, VA	402	0		0		0		0	402	0
j . Systems Engineering Support	SS/FP	LMI, VA	458	0		0		75	1-2Q	0	533	0
k . Systems Engineering Support	SS/FP	SAIC, VA	81	0		0		0		0	81	0
l . Systems Engineering Support	SS/FP	Camber Inc, NJ	142	232	2Q	300	1-2Q	100	1-2Q	0	774	0
m . Systems Engineering Support	SS/FP	TBD	0	258	1-2Q	67	1-2Q	35	1-2Q	0	360	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603854A - Artillery Systems - Dem/Val

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 . Systems Engineering Support	SS/FP	VRI, MI	0	90	4Q	0		0		0	90	0
o . Software Development Support	SS/FP	Mitre Corporation, VA	1549	162	1Q	262	1Q	131	1Q	0	2104	0
p . Software Development Support	SS/FP	SAIC, VA	753	217	1-2Q	0		0		0	970	0
q . Software Development Support	SS/FP	High Performance Technology Inc (HPT-I), VA	236	412	1-2Q	391	1-2Q	213	1-2Q	0	1252	0
r . Software Development Support	SS/FP	Averstar Inc, OK	0	0		217	1-2Q	104	1-2Q	0	321	0
s . Software Development Support	SS/FP	Camber Inc, NJ	291	0		275	1-2Q	100	1-2Q	0	666	0
t . Software Development Support	SS/FP	PRC, NJ	0	0		175	1-2Q	93	1-2Q	0	268	0
Subtotal:			9166	3096		3708		1571		0	17541	0
Project Total Cost:			1089381	341765		444091		246465		0	2121702	0

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603856A - SCAMP Block II						PROJECT 389		
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
389 SCAMP BLK II	19493	6895	21006	28028	15366	19066	2191	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Single Channel Anti-Jam Manpackable (SCAMP) Block II Program has been restructured to support 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).

This program is designated as a DoD Space Program.

FY 2001 Accomplishments:

- 10672 Initiated development of modification kits for AEHF Manportable SEP Terminal
- 458 Procured 6 Government Furnished Equipment Articles for SCAMP SEP development testing
- 6456 Continued development and test of prototype components for the AEHF Manpackable Terminal: RDTE Test Qty - 2
- 1807 Supported Joint AEHF Satellite Program, Baseband Working Groups, Technical Interchange Meetings and SEP acquisition documentation

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603856A - SCAMP Block II

PROJECT
389

FY 2001 Accomplishments: (Continued)

- 100 Army Battle Command System (ABCS) system engineering and integration efforts

Total 19493

FY 2002 Planned Program

- 5554 Continue AEHF Manportable SEP modification kit development
- 1117 Continue development, test and evaluation of prototype components for the AEHF Manpackable Terminal
- 224 Continue support to AEHF Satellite Program and Baseband Working Groups and Technical Interchange Meetings

Total 6895

FY 2003 Planned Program

- 16441 Continue AEHF Manportable SEP modification kit development
- 3102 Continue development and test of 2 AEHF Manpackable prototypes and conduct MS B decision
- 1463 Continue support to AEHF Satellite Program and Baseband Working Groups and Technical Interchange Meetings

Total 21006

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	20135	9895	21056
Appropriated Value	20277	6895	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	0	0
b. SBIR / STTR	-598	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-186	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-50
Current Budget Submit (FY 2003 PB)	19493	6895	21006

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603856A - SCAMP Block II	PROJECT 389
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FY 2002 - \$3.0M Congressional Reduction

<u>C. Other Program Funding Summary</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>
SCAMP BLK II Other Procurement	0	0	0	0	13063	25908	42799	Continue	Continue

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 technical information. 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.

<u>E. Schedule Profile</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>
MANPORTABLE (SEP) TERMINAL:							
Decision Brief	1Q						
Development Contract	2-4Q	1-4Q	1-4Q	1-4Q			
Complete System Development/Test/Integration					1Q		

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

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603856A - SCAMP Block II

PROJECT
389

E. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Build Prototype Kits - AEHF					1-4Q		
Limited User Test - AEHF - LDR Mode					2Q		
Complete Retrofit Prototype Kits - AEHF						1Q	
Award Production Contract					2Q		
Complete Retrofit Production Kits							4Q
MANPACKABLE TERMINAL:							
Initiate AEHF Component Development	1Q						
Continue AEHF Prototype Development		1-4Q	1-4Q	1-2Q			
Complete AEHF Prototype				3Q			
Milestone B Decision					1Q		
Award Development Contract					2Q		
Complete Development of Terminals							3Q
Complete IOT&E							4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603856A - SCAMP Block II

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	1395	2Q	2950	2Q	Continue	Continue	Continue
b . Other Contracts	Various	Various	2470	342	2Q	236	2Q	150	2Q	Continue	Continue	Continue
c . Govt Eng Support	MIPR	Various	1961	725	2Q	103	2Q	1288	2Q	Continue	Continue	Continue
d . Major Contract	SS/CPAF	Rockwell Collins, Cedar Rapids, IA	0	9892	2Q	4226	2Q	13007	2Q	Continue	Continue	Continue
e . GFE	MIPR	PM MILSATCOM	0	458	2Q	0		0		0	458	458
f . ABCS SE&I	PWD	TRW Carson, CA	0	100	2Q	0		0		0	100	100
Subtotal:			18262	16610		5960		17395		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603856A - SCAMP Block II

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	2Q	0		0		0	413	413
b . Support Contracts	Various	Various	1906	338	2Q	0		460	2Q	Continue	Continue	Continue
Subtotal:			2302	355		0		460		Continue	Continue	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 . Test Demonstration	MIPR	Lincoln Labs Lexington, MA	1525	0		0		0		0	1525	1525
b . DT&E	Various	Various	397	0		0		74	2Q	Continue	Continue	Continue
c . Major Contracts	SS/CPAF	Rockwell Collins Cedar Rapids, IA	0	0		0		655	2Q	Continue	Continue	Continue
d . LL DT&E	MIPR	Lincoln Labs Lexington, MA	964	763	1Q	392	2Q	152	2Q	Continue	Continue	Continue
Subtotal:			2886	763		392		881		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

PE NUMBER AND TITLE
0603856A - SCAMP Block II

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	1616	2Q	543	2Q	1844	2Q	Continue	Continue	Continue
b . Support Contracts	Various	Various	872	149	2Q	0		426	2Q	Continue	Continue	Continue
Subtotal:			2605	1765		543		2270		Continue	Continue	Continue
Project Total Cost:			26055	19493		6895		21006		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation		PE NUMBER AND TITLE 0603869A - Meads Concepts - Dem/Val						PROJECT 01B		
COST (In Thousands)		FY 2001 Actual	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	527	117745	280580	272070	277115	281890	0	1229927

A. Mission Description and Budget Item Justification: 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. The International Memorandum of Understanding (MOU) was signed 27 Jun 2001, and the RRE contract was awarded 10 July 2001.

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. 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. The Army requirement for MEADS supports the Objective transition path of the Army Transformation Campaign Plan (TCP).

All FY02 funds were transferred to BMDO per Congressional direction. \$527K of Army funding reflected in FY02 will be properly aligned to the correct PE for execution.

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603869A - Meads Concepts - Dem/Val	PROJECT 01B
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FY 2003 Planned Program

- 60652 Continue U.S. contribution to the NATO MEADS Management Agency (NAMEADSMA) International Program Office operational and administrative budgets for the MEADS RRE contract and continued development of digital end-to-end simulation, continue development of prototype launcher, fire control radar and BMC4I hardware/ software and test planning. Initiates tri-national ramp-up for seamless transition to Development and Demonstration.
- 40823 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 Army family-of-systems; support development and maintenance of Joint Data Network interface requirements and planning and appropriate planning of MEADS manpower, training, human factors, safety issues, modeling and simulation support.
- 9740 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.
- 6530 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.

Total 117745

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
President's Previous Budget (FY 2002 PB)	0	73645	131553
Appropriated Value	0	-73645	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	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	0	0	0
Adjustments to Budget Years Since (FY 2002 PB)	0	0	-13808
Current Budget Submit (FY 2003 PB)	0	0	117745

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603869A - Meads Concepts - Dem/Val	PROJECT 01B
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FY 2001 program was included in the Ballistic Missile Defense Organization (BMDO) Budget.
 FY 2002 program was transferred from the Army to BMDO (Missile Defense Agency).
 FY 2003 funds (\$13.5M) realigned to FY04 in accordance with Risk Reduction Effort (RRE) requirements.

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

D. Acquisition Strategy: The MEADS acquisition strategy includes competition between two transatlantic industrial teams in the PD-V phase. These two international entities prepared and competed for the Program Definition/Validation (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. A U.S. funded bridging effort commenced on 14 August 2000 to work on the high-risk areas and long-lead items within the scope of the RRE effort. The International MOU was signed 27 Jun 2001 and the RRE contract was awarded 10 Jul 2001. In consideration of future RRE costs, participatory nations at the 18th Steering Committee Meeting agreed to share the value of the effort which is recognized as applicable services. Per the 2 Jan 02 SECDEF missile defense direction memo, the U.S. national unique requirements of the MEADS program will be developed in consultation with the MDA. The international requirements of the MEADS program will be directed per the International MOU and as modified in the future for international participation in the BMDS. The U.S. national unique MEADS development will follow the MDA's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks.

<u>E. Schedule Profile</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>
RRE Contract Award	4Q						

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

February 2002

BUDGET ACTIVITY 4 - Demonstration/validation	PE NUMBER AND TITLE 0603869A - Meads Concepts - Dem/Val	PROJECT 01B
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<u>E. Schedule Profile (continued)</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
System Level Interface Demo			4Q				
Demonstrate MEADS functionality				2Q			
Program review		1-4Q	4Q	2Q			
Milestone B				2Q			
Design and development phase contract award				2Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

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	CPEF	NAMEADSMA, Huntsville, AL	0	0		0		59152	2Q	0	59152	0
b . MultiBand Spectral Radar Frequency Data Link	TBD	LMMS, Orlando, FL.	0	0		0		3210	1Q	0	3210	0
Subtotal:			0	0		0		62362		0	62362	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, Huntsville, AL.	0	0		0		1500	2Q	0	1500	0
b . Program Integration	LOE	PEO AMD, Huntsville, AL.	0	0		0		23713	2Q	0	23713	0
c . U.S. Contracts	LOE	MEADS Prod Ofc, Huntsville, AL.	0	0		0		3096	2Q	0	3096	0
d . U.S. OGAs	MIPR	MEADS Prod Ofc, Huntsville, AL.	0	0		0		6644	2Q	0	6644	0
e . Modeling/Simulation	LOE	MRDEC, Huntsville, AL.	0	0		0		6800	2Q	0	6800	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
4 - Demonstration/validation

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

PROJECT
01B

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		0		41753		0	41753	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 . Range Support	LOE	WSMR, White Sands, NM.	0	0		0		7100	2Q	0	7100	0
Subtotal:			0	0		0		7100		0	7100	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, Huntsville, AL.	0	0		0		6530	2Q	0	6530	0
Subtotal:			0	0		0		6530		0	6530	0

Project Total Cost:			0	0		0		117745		0	117745	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604201A - AIRCRAFT AVIONICS					PROJECT C97			
COST (In Thousands)	FY 2001 Actual	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	40527	50838	40308	59535	31645	30893	6327	Continuing	Continuing	

A. Mission Description and Budget Item Justification: This Program Element (PE) funds the development of avionics systems required to horizontally and vertically integrate the battlefield. Tasks in this PE support research efforts in the engineering and manufacturing development phases of these systems. 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 Command & Control (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). The IDM provides a flexible, software-driven digital messaging system interoperable with existing Battlefield Operating Systems and the Joint Forces. IDM improves Army Aviation's lethality and operational tempo through the exchange of fast and accurate data-burst communications through the Army's Fire Support and Tactical Internet (TI), providing seamless communications across the digital battlefield. These RDT&E funds are required to develop and integrate IDM hardware and software interfaces for the CH-47F and UH/HH-60M.

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 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.

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604201A - AIRCRAFT AVIONICS

PROJECT

C97

Installed A Kits and JTRS will provide the AH-64D, CH-47F, and UH/HH-60M the capability to transmit, receive, bridge and gateway between similar and diverse waveforms over multiple communications media & networks.

The Airborne Separation Video System(ASVS) will provide the AH-64D the capability to transmit and store digital video on the aircraft. ASVS will enhance battlefield awareness and give aircraft commanders the capability to perform a peacetime surveillance role.

FY 2001 Accomplishments:

- 3618 Continued System Development and Evaluation BLK I (A2C2S)
- 6535 Developed, Fabricated, & Deployed Prototype Systems 1&2, Initiate System 3 (A2C2S)
- 3843 Continued Systems Engineering, Logistics, and Software Integration (A2C2S)
- 212 ABCS System Engineering and Integration Efforts (A2C2S)
- 1087 Initiated Test Planning, Developmental Testing, and Prepare for DCX II (A2C2S)
- 434 Deployed System 1 to 4ID (A2C2S)
- 4600 Initiated effort to integrate IDM/EBC software into the UH/HH-60M (IDM)
- 10621 Continued CH-47F Test Plans, Software Development, and B-Kit Integration Support (IDM)
- 701 Initiated Information Assurance Efforts (IDM)
- 1000 Initiated software development for the RAH-66 (IDM)
- 891 Continued Program Management Support (IDM)
- 2045 Initiated design analysis of JTRS A-Kit integration efforts for AH-64D, CH-47F, and UH/HH-60M/ (JTRS)
- 2039 Initiated Systems Engineering and Logistics efforts (JTRS)
- 363 Initiated Program Management support (JTRS)
- 1000 Initiated Integrated Communications, Navigation, and Identification Avionics (ICNIA) compliance for JTRS requirements/architecture (JTRS)
- 175 Initiated IDE Development (JTRS)
- 1363 Initiated contractual effort to support AH-64D, CH-47F, and UH/HH-60M/ (JTRS)

Total 40527

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development**0604201A - AIRCRAFT AVIONICS****C97****FY 2002 Planned Program**

- 4332 Continue System Development and Evaluation BLK I (A2C2S)
- 12983 Initiate Integration of Prototype Systems 3 to 7 (A2C2S)
- 1778 Develop and Integrate Training Demonstrator System (A2C2S)
- 6421 Continue Systems Engineering, Logistics, and Software Integration (A2C2S)
- 1715 Initiate and Complete System Software Development (A2C2S)
- 280 ABCS System Engineering and Integration Efforts (A2C2S)
- 6336 Continue Developmental Testing, participate in DCX II, and prepare for LUT (A2C2S)
- 739 Continue Support for System 1 and Deploy System 2 (A2C2S)
- 2224 Continue effort to integrate IDM/EBC software into the CH-47F (IDM)
- 117 Continue Program Management Support (IDM)
- 6548 Complete design analysis and initiate design/development of JTRS A-Kit for the AH-64D, CH-47F, and UH/HH60-M (JTRS)
- 2803 Continue Systems Engineering and Logistics efforts (JTRS)
- 640 Continue program management support for the A-Kit development (JTRS)
- 2000 Continue ICNIA compliance to JTRS requirements/architecture (JTRS)
- 822 Continue contractual effort to support AH-64D, CH-47F, and UH/HH-60M (JTRS)
- 1100 Initiate software development for embedding PTAC for IDM and MDP into the AH-64D (ASVS)

Total 50838

FY 2003 Planned Program

- 1616 Continue effort to integrate IDM/EBC software into the CH-47F (IDM)
- 4328 Continue effort to integrate IDM/EBC software into the UH/HH-60M (IDM)
- 218 Continue Program Management Support (IDM)
- 23718 Continue development of JTRS A-Kit for AH-64D, CH-47F, and UH/HH-60M to include platform control software (JTRS)

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604201A - AIRCRAFT AVIONICS

C97

FY 2003 Planned Program (Continued)

- 3089 Continue Systems Engineering and Logistics efforts (JTRS)
- 1517 Continue Program Management support for the JTRS A-Kit development (JTRS)
- 5000 Continue ICNIA compliance to JTRS requirements/architecture (JTRS)
- 822 Continue contractual effort to support AH-64D, CH-47F, and UH/HH-60M (JTRS)

Total 40308

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002/03 PB)	41893	57474	52666
Appropriated Value	42280	51274	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-436	0
b. SBIR / STTR	-1245	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	-120	0	0
e. Rescissions	-388	0	0
Adjustments to Budget Years Since FY2002/03 PB	0	0	-12358
Current Budget Submit (FY 2003 PB)	40527	50838	40308

Beginning in FY03, funding in PE 64201 for A2C2S was transferred to PE 64818.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604201A - AIRCRAFT AVIONICS	PROJECT C97
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<u>C. Other Program Funding Summary</u>	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	27738	42281	51816	55664	0	Continue	Continue
Airborne Command and Control PE 64818, Project C3A (A2C2S)	0	0	16002	6998	6127	4541	0	0	33668
Aircraft Avionics SSN AA0700 (IDM)	32750	42605	59368	35760	30029	29894	33242	Continue	Continue
Joint Tactical Radio System SSN AA0702 (JTRS)	0	0	0	1941	2155	21604	131329	Continue	Continue
JTRS Ground Domain Integration PE 64805/D615 (JTRS)	27447	93238	40651	61136	46335	28797	4882	0	302486
Army Data Distribution System (Data Radio) SSN BU1400 (JTRS)	80831	63839	74835	95270	117812	119562	120017	Continue	Continue

D. Acquisition Strategy: This project is comprised of multiple systems:

- 1)A2C2S - Two A2C2S Demonstrators are being integrated by the Government. A prime contract was awarded in 4th Qtr FY01 for Prototype Development and Evaluation.
- 2)IDM - The IDM/EBC nonrecurring engineering and software development will be performed by Rockwell/Boeing for CH-47F and by Sikorsky for UH/HH-60M. The B-kits will be procured and installed during CH-47F and UH/HH-60M production.
- 3)JTRS - Initial JTRS A-Kit hardware development, installation and integration will be procured via host platform vendor. It is planned that full production contracts will be competitively awarded.
- 4)ASVS - The software development will be performed by Photo-T, Boeing and ICI.

<u>E. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Deploy System 1 to 4ID (A2C2S)	3Q						
Deploy System 2 to 101st ABN (A2C2S)		1Q					
Continued Developmental Testing (A2C2S)	2-4Q	1-4Q					

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604201A - AIRCRAFT AVIONICS	PROJECT C97
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E. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
DCX II (A2C2S)		1Q					
Prepare for LUT (A2C2S)							
Initiate/Continue effort to Integrate IDM/EBC software into the UH/HH-60M (IDM)	2-4Q		1-2Q				
Continue CH-47F test plans, software development, and B-Kits Integration in support of IDM (IDM)	1-4Q	1-4Q	1-2Q				
Initiated RAH-66 Software Development (IDM)	3Q						
Initiate/Continue Program Management support for IDM (IDM)	1-4Q	1-4Q	1-4Q				
Initiated Information Assurance Certification effort for IDM (IDM)	4Q						
Received JTRS MDAP decision (JTRS)	4Q						
Initiate/continue design analysis of JTRS A-Kit for AH-64D, CH-47F, and UH/HH-60M (JTRS)	4Q	1-3Q					
Initiate/Continue development of JTRS A-Kit for AH-64D, CH-47F, and UH/HH-60M (JTRS)		3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Initiated/Continue Systems Eng/Log Efforts for JTRS (JTRS)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Initiated/Continue Prog Mgmt Support for JTRS A-Kit (JTRS)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Initiate system level testing for AH-64D, CH-47F, UH/HH-60M (JTRS)				1-2Q	2Q	2Q	
Initiate/Continue ICNIA Efforts for JTRS (JTRS)	4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	
Initiated Integrated Digital Environment (IDE) for JTRS (JTRS)	2Q						
Initiated/Continue contractual effort to support AH-64D, CH-47F & UH/HH-60M (JTRS)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Initiate software development (ASVS)		3-4Q					

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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)) (A2C2S)	Various	Various	43133	3618	1Q	4232	1Q	0		0	50983	0
b . Prototype and TDS Integration (Sys 1-7)) (A2C2S)	MIPR/CPIF	Army Aviation TD Ft. Eustis, VA/Raytheon, AL	7732	6535	1Q	13860	1Q	0		0	28127	0
c . Systems Engineering (A2C2S)	Various	Various	20387	1686	1Q	2997	1Q	0		0	25070	0
d . GFE (A2C2S)	MIPR	Naval Research Lab, Wash, D.C.	578	0		0		0		0	578	0
e . Integrated Development of IDM into CH47-F SIL (IDM)	MIPR	AMCOM, AL	644	0		0		0		0	644	0
f . Initiated development of CH-47F wiring design (IDM)	MIPR	AMCOM, AL	1126	0		0		0		0	1126	0
g . UH/HH-60M Integration of B-Kit (IDM)	MIPR	AMCOM,AL	0	4600	3Q	0		4328	2Q	0	8928	0
h . CH-47F Test Plans, software development and B-Kit Integration in support of the IDM	MIPR	Various	0	10621	1-2Q	2224	1-4Q	1616	1-2Q	0	14461	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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 . RAH-66 Software Development (IDM)	MIPR	Naval Research Lab, Wash, D.C.	0	1000	3Q	0		0		0	1000	0
j . A-Kit AH-64D , CH-47F, and UH/HH-60M/Q R&D Contracts (JTRS) (Design Analysis & SDD)	CPFF	Boeing, Mesa, AZ, Boeing, Philadelphia, PA and Sikorsky, Stratford, CT	0	2045	4Q	6548	3-4Q	23718	1-4Q	Continue	32311	Continue
k . Systems Engineering, Logistics Efforts (JTRS)	MIPR	Various	0	2039	1-4Q	2803	1-4Q	3089	1-4Q	Continue	Continue	Continue
l . Contractual efforts to support platforms (JTRS)	MIPR	Various	0	1363	1-4Q	822	1-4Q	822	1-4Q	Continue	Continue	Continue
m . Initiate software development (ASVS)	CPFF	Boeing, Mesa, AZ Photo-T, San Antonio Tx , ICI, Mclean Va.	0	0		1100	3-4Q	0		0	1100	0
Subtotal:			73600	33507		34586		33573		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	413	1Q	1432	1Q	0		0	1845	1030
b . Systems Logistics Support (ILS,NET,Tech) (A2C2S)	Various	Various	1219	573	1Q	1143	1Q	0		0	2935	0
c . System 1 & 2 Deployment to 4ID & 101st (A2C2S)	Various	Various	0	434	3Q	739		0		0	1173	0
d . ABCS System Eng & Int Efforts (A2C2S)	MIPR	Various	0	212	1Q	280	1Q	0		0	492	0
e . Software Development (A2C2S)	MIPR/CPIF	Naval Research Labs, Wash, D.C., Raytheon, AL	18209	0		1715	1Q	0		0	19924	0
f . Training Development (A2C2S)	CPFF, CPIF	CAS, AL, Raytheon, AL	90	0		70	1Q	0		0	160	0
g . Configuration Management/Technical Data (A2C2S)	MIPR/CPIF	Naval Research Lab Wash, D.C.,Raytheon, AL	1449	0		444	1Q	0		0	1893	0
h . Technical Data (A2C2S)	CPFF/SS, CPIF	Dynamics Research Corp, Andover, MA, NRL, Wash D.C., Raytheon, AL	772	0		47	1Q	0		0	819	0
i . ICNIA compliance to JTRS requirements (JTRS)	MIPR	TRW, CA	0	1000	1-4Q	2000	1-4Q	5000	1-4Q	Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604201A - AIRCRAFT AVIONICS

PROJECT
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 . Integrated Digital Environment for JTRS	CPFF	ARINC, NJ	0	175	2Q	0		0		0	175	0
Subtotal:			21739	2807		7870		5000		Continue	Continue	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/CPIF	ATEC/RTTC/AATD/AED/Raytheon, AL	0	1087	1Q	6336	1Q	0		0	7423	0
b . Operational Test & Evaluation (A2C2S)	MIPR	TEXCOM FT. Hood, TX	250	0		0		0		0	250	0
c . IA Certification (IDM)	MIPR	AMCOM,CECOM	0	701	4Q	0		0		0	701	0
Subtotal:			250	1788		6336		0		0	8374	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604201A - AIRCRAFT AVIONICS

PROJECT
C97

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	1171	1Q	1289	1Q	0		0	7963	0
b . Government Engineering Support (A2C2S)	MIPR	AMCOM, AL	742	0		0		0		0	742	0
c . PM Spt (Digitization)	CPFF/C MIPR	AMCOM PATS, AL	215	0		0		0		0	215	0
d . PM Spt (IDM)	MIPR	AMCOM, AL	96	891	1-4Q	117	1-4Q	218	1-4Q	Continue	Continue	Continue
e . PM Spt (JTRS)	MIPR	AMCOM, AL	0	363	1-4Q	640	1-4Q	1517	1-4Q	Continue	Continue	Continue
Subtotal:			6556	2425		2046		1735		Continue	Continue	Continue
Project Total Cost:			102145	40527		50838		40308		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604220A - Armed, Deployable OH-58D					PROJECT 538			
COST (In Thousands)		FY 2001 Actual	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	511	2326	1873	0	0	0	0	0	4710

A. Mission Description and Budget Item Justification: 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 2001 Accomplishments:

- 467 Developmental/Operational Test & Analysis
 - 11 Battle Damage Assessment
 - 33 Government Furnished Equipment (GFE)
- Total 511

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604220A - Armed, Deployable OH-58D

538

FY 2002 Planned Program

- 174 Development/Operational Test & Analysis 2 Main rotor blades 1 Ground test vehicle assembly
 - 11 Battle Damage Assessment
 - 2141 Mock-up Cost
- Total 2326

FY 2003 Planned Program

- 1363 Developmental/Operational Test & Analysis
 - 10 Battle Damage Assessment
 - 500 Mock-up Cost (1 GTV)
- Total 1873

B. Program Change Summary

	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	528	2345	1878
Appropriated Value	532	2345	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-19	0
b. SBIR / STTR	-16	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-5	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-5
Current Budget Submit (FY 2003 PB)	511	2326	1873

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604220A - Armed, Deployable OH-58D	PROJECT 538
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<u>C. Other Program Funding Summary</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>
APA AZ2200 - Kiowa Warrior	41531	42308	42406	41876	34573	22962	56522	14110	338228

D. Acquisition Strategy: Test planning and actual testing will be conducted by Army Research Laboratories (ARL). Test results will be analyzed by ARL, the Army Test and Evaluation Center (ATEC), and the Evaluation Analysis Center (EAC). The US Army Aviation Logistics School (USAALS) will perform battle damage assessment and the Boeing Company will provide support for the planning, testing and analysis efforts.

<u>E. Schedule Profile</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>
Test - Phase I (Static shots)	1-4Q	1-4Q					
Test - Phase II (Dynamic shots)		4Q	1-4Q	1Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604220A - Armed, Deployable OH-58D

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	297	1-2Q	185	1-2Q	723	1Q	0	1205	1205
b . Hardware Cost Assembly	MIPR	OLR, KILLEEN, TX	0	33	1Q	2141	1-2Q	500	1Q	0	2674	2674
c . Bell Helicopter	SS/CPFF	FORT WORTH, TX	0	0		0		500	1Q	0	500	500
d . Boeing	SS/CPFF	Annaheim, CA	0	181	1Q	0		150	1Q	0	331	331

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	511		2326		1873		0	4710	4710

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	511		2326		1873		0	4710	4710
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604223A - COMANCHE

COST (In Thousands)	FY 2001 Actual	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	590771	781307	910160	1003591	943682	453065	836472	Continuing	Continuing
2LT COMANCHE OPER TEST	18	165	144	1265	1416	8894	5105	Continuing	Continuing
327 COMANCHE	565825	726789	860001	959263	898023	416519	817558	Continuing	Continuing
C72 T-800 ENGINE ED (LH)	24928	54353	50015	43063	44243	27652	13809	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element provides for the development and operational testing and evaluation of the RAH-66 Comanche and the T802 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 T802 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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604223A - COMANCHE

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	608410	787866	751347
Appropriated Value	614041	787866	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-6559	0
b. SBIR / STTR	-17911	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	271	0	0
e. Rescissions	-5630	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	158813
Current Budget Submit (FY 2003 PB)	590771	781307	910160

FY03: Additional funds provided to fully fund current program alternatives under review by the Army.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604223A - COMANCHE				PROJECT 2LT	
COST (In Thousands)	FY 2001 Actual	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	18	165	144	1265	1416	8894	5105	Continuing	Continuing

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 2001 Accomplishments:

- 18 Independent evaluation at contractor test facility in support of LUT and prepare for FDTE I
- Total 18

FY 2002 Planned Program

- 65 Independent evaluation at contractor test facility in support of LUT
 - 50 Validate four crew station simulators (Comanche Portable Cockpits) in preparation for FDTE I. Conduct FDTE I
 - 50 Instrumentation and Targets to support FDTE III
- Total 165

FY 2003 Planned Program

- 97 Independent evaluation at contractor test facility in support of LUT
 - 47 Instrumentation and Targets to support FDTE III
- Total 144

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604223A - COMANCHE

PROJECT
2LT

<u>B. Other Program Funding Summary</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	469934	1033343	1736096	34406976	37646349

C. Acquisition Strategy: This project is for test and evaluation effort to support Comanche acquisition.

<u>D. Schedule Profile</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>
Conduct independent evaluation at contractor test facility supporting LUT	1-4Q	1-4Q	1-4Q	1-4Q	1Q		
Prepare for LUT		4Q	1-4Q	1-4Q	1-3Q		
Prepare for FDTE I	4Q	1-2Q					
Conduct FDTE I		2-3Q					
Prepare for FDTE II				4Q			
Conduct FDTE II					1Q		
Prepare for FDTE III		4Q	1-4Q	1-4Q	1-4Q		
Conduct FDTE III					4Q		
Conduct LUT						1Q	
Prepare for FDTE IV and ARTEP							4Q

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604223A - COMANCHE					PROJECT 327			
COST (In Thousands)	FY 2001 Actual	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	565825	726789	860001	959263	898023	416519	817558	Continuing	Continuing

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 2001 Accomplishments:

- 228249 Continue MEP development
- 206565 Continue EMD engineering development
- 78914 Continue component development testing and prototype flight test program for prototypes #1 and #2
- 52097 Begin material procurement/manufacture of eleven EMD aircraft (test articles), five development test, six Initial Training Capability (ITC) aircraft

Total 565825

FY 2002 Planned Program

- 244164 Continue MEP development
- 273245 Continue EMD engineering development
- 105618 Continue component development testing and prototype flight test program
- 103762 Continue material procurement/manufacture of eleven EMD aircraft (test articles), five development test, six ITC aircraft

Total 726789

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604223A - COMANCHE

PROJECT

327

FY 2003 Planned Program

- 285947 Continue MEP development
- 292513 Continue EMD engineering development
- 124839 Continue component development testing and prototype flight test program
- 156702 Continue material procurement/manufacture of eleven EMD aircraft (test articles), five development test, 6 ITC aircraft

Total 860001

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604223A - COMANCHE

PROJECT
327

<u>B. Other Program Funding Summary</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	469934	1033343	1736096	34406976	37646349

C. Acquisition Strategy: Continue work with current contractor leading to production.

<u>D. Schedule Profile</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>
Continue MEP development	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Continue EMD Program engineering development	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Continue development testing and prototype flight test program	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Begin/Continue material procurement/manufacture of EMD aircraft	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-2Q	
Delivery of EMD aircraft					3-4Q	1-2Q	
Conduct development testing and flight test of acft #3 thru 6				3-4Q	1-4Q	1-4Q	1-4Q
Conduct flight test of acft #7 thru 15 and conduct IOT&E					2-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	155629	525812	1-2Q	678585	1-2Q	805929	1-2Q	Continue	2165955	3152978
b . DAAJ09-91-C-A004	C/CPIF	Boeing Sikorsky, PA	2927066	0		0		0		0	2927066	2930631
c . DAAJ09-87-D-A022	C/FFP	Veridian, VA	61996	6663	2Q	6194	1-2Q	6310	1-2Q	0	81163	Continue
d . Other Contracts	C/T&M	Multiple	2088	3170	1-3Q	7944	1-3Q	6109	1-3Q	Continue	19311	Continue
e . Completed Contracts			370288	0		0		0		0	370288	370288
f . Gov't Agencies	MIPR	Multiple	3641	480	1-4Q	480	1-4Q	489	1-4Q	Continue	5090	Continue
Subtotal:			3520708	536125		693203		818837		Continue	5568873	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604223A - COMANCHE

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	Multiple	36058	8760	1-3Q	5013	1-3Q	5107	1-3Q	Continue	54938	Continue
b . Completed Contracts	C/FFP		15556	0		0		0		0	15556	15556
c . Gov't Agencies	MIPR	Multiple	125257	8428	1-4Q	11161	1-4Q	12054	1-4Q	Continue	156900	Continue
Subtotal:			176871	17188		16174		17161		Continue	227394	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	Multiple	25772	2272	1-4Q	5833	1-4Q	11581	1-4Q	Continue	45458	Continue
Subtotal:			25772	2272		5833		11581		Continue	45458	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604223A - COMANCHE

PROJECT
327

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	Multiple	5690	1415	1-3Q	1353	1-3Q	1378	1-3Q	Continue	9836	Continue
b . PMO/Gov't Agencies	MIPR	Multiple	14276	8825	1-4Q	10226	1-4Q	11044	1-4Q	Continue	44371	Continue
Subtotal:			19966	10240		11579		12422		Continue	54207	Continue
Project Total Cost:			3743317	565825		726789		860001		Continue	5895932	Continue

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604223A - COMANCHE						PROJECT C72		
COST (In Thousands)	FY 2001 Actual	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)	24928	54353	50015	43063	44243	27652	13809	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project includes tasks to develop, design, fabricate, test and qualify a turbo shaft engine of the latest technology. The engine is to be furnished by the US Army to the Comanche weapon system integrator. This engine is the only propulsion source being considered for the Comanche program. The requested budget provides for the continued development and qualification of all T800 variants being used in the Comanche program and include: T802 engine, which adds 70 shaft horsepower to the 801 variant. Also included are Life Cycle Cost reduction analyses as well as initiatives for spiral/block change evolution of the design.

FY 2001 Accomplishments:

- 4876 Continue engine air vehicle support
- 17857 Continue contractor development/qualification testing
- 2195 Begin EMD program engine material procurement/manufacturing. Up to thirty-four engines (test articles) being procured to be delivered in FY 03 and FY 04 for Comanche EMD aircraft

Total 24928

FY 2002 Planned Program

- 4952 Continue engine air vehicle support
- 28401 Continue contractor development/qualification testing
- 21000 Continue EMD program engine manufacturing. Up to thirty-four engines (test articles) to be delivered in FY 03 and FY 04 for Comanche EMD aircraft

Total 54353

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604223A - COMANCHE

PROJECT
C72

FY 2003 Planned Program

- 6814 Continue engine air vehicle support
- 16932 Continue contractor development/qualification testing
- 26269 Continue EMD program engine manufacturing. Up to thirty-four engines (test articles) to be delivered in FY 03 and FY 04 for Comanche EMD aircraft

Total 50015

<u>B. Other Program Funding Summary</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	469934	1033343	1736096	34406976	37646349

C. Acquisition Strategy: Continue work with current contractor leading to FAA certification, military qualification and production.

<u>D. Schedule Profile</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	3Q						
Continue contractor development/qualification of T802 engine design	1-4Q	1-4Q	1-4Q	1-4Q	1-2Q		
Continue engine air vehicle support of Comanche EMD	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Begin/Continue EMD engine material procurement/manufacturing	3-4Q	1-4Q	1-4Q	1-4Q			
Deliveries of EMD engines			4Q	1-4Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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 . DAAJ09-92-C-0453	C/CPFF	LHTEC, Indiana	327262	24853	1Q	54193	1-2Q	49905	1-2Q	Continue	456213	Continue
b . DAAJ09-85-C-B017	C/FFP	LHTEC, Indiana	276821	0		0		0		0	276821	276821
c . DAAJ09-93-C-0518	C/CPFF	LHTEC, Indiana	460	0		0		0		0	460	460
d . DAAJ09-85-C-B019	C/FFP	AVCO/PW, Connecticut	128526	0		0		0		0	128526	128526
e . Gov't Agencies	MIPR	Multiple	14227	75	1-4Q	100	1-4Q	110	1-4Q	Continue	14512	0
Subtotal:			747296	24928		54293		50015		Continue	876532	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 . PATS contracts	C/FFP		96	0		0		0		0	96	96
b . Rail	C/FFP		2806	0		0		0		0	2806	2806
c . Other Contracts	Agreement		400	0		0		0		0	400	400
Subtotal:			3302	0		0		0		0	3302	3302

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604223A - COMANCHE

PROJECT
C72

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	Multiple	23681	0		60	2Q	0		0	23741	Continue
b . Contracts			2	0		0		0		0	2	0
Subtotal:			23683	0		60		0		0	23743	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
Subtotal:			0	0		0		0		0	0	0

Remarks: None

Project Total Cost:			774281	24928		54353		50015		Continue	903577	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

COST (In Thousands)	FY 2001 Actual	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	64241	53616	22819	39759	25891	27894	32104	Continuing	Continuing
665 A/C SURV EQUIP DEV	23109	8081	9932	12837	12827	12891	12868	Continuing	Continuing
L12 SIGNALS WARFARE DEVELOPMENT (TIARA)	2939	1731	9289	23133	10180	12122	15067	Continuing	Continuing
L15 ARAT-TSS	0	1893	2202	2297	1396	1295	2586	Continuing	Continuing
L16 TROJAN DEVELOPMENT	0	1394	1396	1492	1488	1586	1583	Continuing	Continuing
L20 ATIRCM/CMWS	38193	40517	0	0	0	0	0	0	78710

A. Mission Description and Budget Item Justification: This program element encompasses engineering and manufacturing development for tactical electronic warfare (EW), signals warfare (SW), aircraft survivability equipment (ASE), battlefield deception, rapid software reprogramming and protection of personnel and equipment from hostile artillery. EW encompasses the development of tactical EW equipment and systems mounted in both ground and air vehicles. The systems under this program provide the Army with the capability to degrade or deny hostile forces the effective use of their communications, countermortar/counterbattery radars, surveillance radars, infrared/optical battlefield surveillance systems and electronically fused munitions. Existing Army EW systems must be replaced or upgraded to maintain their capability in the face of threats. This program element satisfies requirements for brigade, division, corps and higher commanders to conduct electronic warfare to meet tactical and Special Electronic Mission Aircraft (SEMA), attack/scout, and assault/cargo mission requirements. The Prophet program provides for the development of multifunction ground based and airborne intelligence and electronic warfare systems. Trojan will complete Proof-of-Principle R&D for specific applications in advanced threat signals processing, prototype software upgrades, high frequency (HF) algorithms for compact antenna array technology (CAAT), search and acquisition capabilities for unattended signal collectors, and new digital intelligence collection, processing and dissemination technology. The ARAT Project will develop, test and equip an Army-wide infrastructure capable of rapidly reprogramming electronic combat software embedded in offensive and defensive weapon systems. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Path (TCP).

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	69413	57010	36274
Appropriated Value	70056	54010	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-394	0
b. SBIR / STTR	-1814	0	0
c. Omnibus or Other Above Threshold Reprogrammings	0	0	0
d. Below Threshold Reprogramming	-3359	0	0
e. Rescissions	-642	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-13455
Current Budget Submit (FY 2003 PB)	64241	53616	22819

FY 2003 FUNDS REALIGNED TO SUPPORT HIGHER ARMY PRIORITIES.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT					PROJECT 665			
COST (In Thousands)	FY 2001 Actual	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	23109	8081	9932	12837	12827	12891	12868	Continuing	Continuing	

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 to fulfill all Army aircraft mission requirements. Equipment will increase combat effectiveness for mission accomplishment by reducing or eliminating the ability of threat air defense systems to detect, hit, track, damage or destroy Army aircraft. The program funds test and type classification for the production and fielding of RF systems, and integrates 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 coordinated through the Joint Technical Coordinating Group for Aircraft Survivability (JTCG/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. The Air Force Special Operations Command (AFSOC) selected SIRFC as the CV-22 EW bus controller and sensor fusion processor. The SIRFC has application to Army Special Operations Aircraft, 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 2001 Accomplishments:

- 9007 Conduct Production Engineering Planning/Technology Insertion/Obsolescence
- 6399 Complete EMD
- 4885 Conduct Development Testing/Limited User Testing
- 1990 Conduct Contractor Flight Testing
- 406 Conduct Benefield Anechoic Facility Testing
- 350 Conduct Radio Frequency Simulation System Testing
- 72 Continue in-house and program management administration

Total 23109

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604270A - EW DEVELOPMENT

PROJECT

665**FY 2002 Planned Program**

- 3345 Continue Technology Insertion Program/P3I
- 4236 Conduct Risk Reduction Flight Testing
- 100 Conduct Software Integration Lab Testing
- 400 Continue in-house and program management administration

Total 8081

FY 2003 Planned Program

- 5876 Continue Technology Insertion Program/P3I
- 2643 Conduct Initial Operational Test & Evaluation
- 924 Conduct Technical Insertion Verification Testing
- 489 Continue in-house and program management administration

Total 9932

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
665

<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
APA, BA 4 AZ3508 ASE	0	32576	0	0	0	0	0	0	35603
APA, BA 2 AA0720 ASE Modifications	5046	0	0	0	0	0	0	0	13839
OSD Procurement, PE 1160444BB	0	0	25800	52800	63600	47400	50100	0	239700

C. Acquisition Strategy: The SIRFC LRIP decision is scheduled for the 3rd Quarter of FY02 and will be a sole-source award.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Conduct Technology Insertion/P3I	3Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Complete EMD	4Q						
Complete Limited User Test (LUT)	4Q						
Low Rate Initial Production (LRIP)		3Q					
Complete Initial Operational Test & Evaluation			3Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
665

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	C/CPAF	ITT Corp, Clifton, NJ	95042	5979	2Q	0		0		0	101021	128941
b . EMD Support	MIPR	CECOM, Ft. Monmouth, NJ	0	420	1-4Q	0		0		0	420	420
c . Initiate Technology Insertion/P3I	C/CPFF	ITT Corp, Clifton, NJ	233	0		0		0		0	233	233
d . Conduct PEP/Technology Insertion/Obsolescence	C/CPFF	ITT Corp, Clifton, NJ	0	9000	3Q	0		0		0	9000	9000
e . PEP/Technology Insertion/Obsolescence Support	MIPR	CECOM, Ft. Monmouth, NJ	0	7	2Q	0		0		0	7	7
f . Continue Technology Insertion Program/P3I	C/CPFF	ITT Corp, Clifton, NJ	0	0		3063	2Q	5671	1Q	0	8734	8734
g . Technology Insertion/P3I Support	MIPR	CECOM, Ft. Monmouth, NJ	0	0		282	2Q	205	1Q	0	487	487
Subtotal:			95275	15406		3345		5876		0	119902	147822

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604270A - EW DEVELOPMENT

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
			0	0		0		0		0	0	0
Subtotal:												

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 Development Testing/Limited User Testing	C/CPFF	Research Analysis & Maintenance Inc., El Paso, TX	541	1452	3-4Q	0		0		0	1993	1993
b . Conduct Development Testing/Limited User Testing	C/CPFF	Boeing, Mesa, AZ	75	1570	2Q	0		0		0	1645	1645
c . Conduct Development Testing/Limited User Testing	MIPR	Multiple	448	1863	1-3Q	0		0		0	2311	2311
d . Conduct Contract Flight Testing	C/CPFF	Research Analysis & Maintenance Inc., El Paso, TX	0	1070	1-3Q	0		0		0	1070	1070
e . Conduct Contractor Flight Testing	MIPR	Multiple	0	920	1-3Q	0		0		0	920	920
f . Conduct Benefield Anechoic Facility Testing	MIPR	Air Force Flight Test Center, Edwards AFB, CA	227	406	1-2Q	0		0		0	633	633

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604270A - EW DEVELOPMENT

665

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 . Radio Frequency Simulation System Test	C/CPFF	Simulation Technologies Inc., Huntsville, AL	212	350	3Q	0		0		0	562	562
h . Conduct Risk Reduction Flight Testing	MIPR	Multiple	0	0		4236	2-3Q	0		0	4236	4236
i . Conduct Software Integration Lab Testing	MIPR	CECOM, Ft. Monmouth, NJ	0	0		100	2Q	0		0	100	100
j . Conduct Initial Operational Test & Evaluation	MIPR	Operational Test Command, Ft. Hood, TX	0	0		0		2643	3Q	0	2643	2643
k . Conduct Technical Insertion Verification Testing	MIPR	Multiple	0	0		0		924	2Q	0	924	924
Subtotal:			1503	7631		4336		3567		0	17037	17037

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604270A - EW DEVELOPMENT

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	72	1-4Q	400	1-4Q	489	1-4Q	0	1193	1193
Subtotal:			232	72		400		489		0	1193	1193
Project Total Cost:			97010	23109		8081		9932		0	138132	166052

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT				PROJECT L12	
COST (In Thousands)	FY 2001 Actual	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)	2939	1731	9289	23133	10180	12122	15067	Continuing	Continuing

A. Mission Description and Budget Item Justification: Product Manager Prophet is responsible for two programs PROPHET and the Tactical SIGINT Payload (TSP). Prophet's primary mission is providing 24-hour Situation Development and Information Superiority to the direct supported maneuver brigade to enable the most effective engagement of enemy forces. Prophet is an integral part of the Army Transformation, providing a force multiplier to the Brigade Commander's scheme of maneuver for the Interim and Objective Force. It is the tactical commanders sole organic ground based Multi-Sensor system for the divisions and its brigades. Prophet provides the tactical commander with next generation Signals Intelligence/Electronic Warfare (SIGINT/EW - radio detection finding capability), Measurement and Signature Intelligence (MASINT ? vehicle and personnel identification) and unattended ground sensors surveillance capabilities. Prophet operates in direct support (DS) to the maneuver brigade at Division, Brigade Combat Team (BCT), Armored Cavalry Regiments (ACR) and Separate Infantry Brigade (SIB). Prophet replaces the division level Trailblazer and Teammate legacy SIGINT systems in Block I, and TrafficJam in Block II. Prophet stationary and on-the-move direction finding information develops battlespace visualization, intelligence preparation of the battlefield (IPB) and target development for enemy and gray emitters within line-of-sight across the brigade area of responsibility. Initially Prophet will interface with the maneuver brigade Analysis Control Team's (ACT) Common Ground Station (CGS) and/or ASAS-Remote Work Stations (ASAS-RWS) via Prophet Control. The ACT will forward the gathered information to the division and armored cavalry Analysis Control Element's (ACE) All Source Analysis System (ASAS). Ultimately Prophet will interface with the Distributed Co mmon Ground Station-Army (DCGS-A) at the brigade level. Additionally, Prophet provides near-real-time enemy situation awareness and intercepted voice communications data, when on board linguists are available, which is translated into actionable intelligence, a key component to the fused intelligence common operating picture (COP). Block I will start fielding in 4QFY02 to BCT 1 and 2 and continue in FY03, completing in 1QFY05. Block I will provide modern signal detection capabilities with expanded frequency coverage and fast setup/teardown. Prophet fielding will enable the Brigade Commander to detect signals while the vehicle is moving, a first for a Tactical SIGINT system. Prophet will be developed in a user prioritized five block approach: 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 sensor extension capabilities.

The Tactical Signals Intelligence Payload (TSP) is currently in the Component Advanced Development (CAD) phase. TSP is a UAV mounted SIGINT/EW sensor that detects enemy and gray radio frequency (RF) emitters. TSP will provide the Land Commander with a deep looking SIGINT/EW system capable of detecting, identifying, locating and geo-locating RF emitters throughout the Area of Operation (AO). TSP will use the Distributed Common Ground System-Army (DCGS-A) vehicle, as its processing and control vehicle. The sensor data will be passed via a Tactical Common Data Link (TCDL) to DCGS-A for display; processing and dissemination to the Division Analysis Control Element (ACE). The TSP electronic emitter information will be fused in the ACE with other sensors [i.e., Prophet, Electro-optical/ Infrared (EO/IR), Moving Target Indicator (MTI), Synthetic Aperture Radar (SAR), Corps Aerial Common Sensor (ACS)] to provide precise targeting information in near real time (NRT).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604270A - EW DEVELOPMENT

PROJECT

L12

The TSP Component Advanced Development (CAD) phase in FY02/03 focuses on demonstrating payloads that could satisfy the objective system requirements and identify which requirements will be pursued during the System Development and Demonstration (SDD) Phase. FY03 funds three CAD contractors leveraging DARPA and other service software efforts, to develop varying capability payloads for flight demonstration in FY03. This information provides the input for the SDD competitive procurement contract and Milestone B Decision in FY04. This approach minimizes technical risks associated with the development effort and identifies mature capabilities. The Prophet System supports the Legacy to Objective with TSP supporting the Objective transition path of the Army Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 1241 Completed Prophet Block I ES (COMINT) DT/IOT&E and Block II EA Characterization Test
- 156 Continued Risk Mitigation for Prophet Block III LPI
- 1542 Risk Mitigation & Demonstration of Data Transport Capabilities between Prophet, TSP and DCGS-A

Total 2939

FY 2002 Planned Program

- 275 Complete Risk Mitigation for Prophet Block III LPI
- 272 Prepare for and conduct Milestone B IPR for Prophet Block III LPI Contract
- 584 Conduct SSEB for Prophet Block III/II
- 600 Conduct follow-on Foreign Cooperative Test (FCT)

Total 1731

FY 2003 Planned Program

- 8671 Award Prophet Block III LPI System Development and Demonstration (SDD) Contract
- 618 Prepare for Prophet Block III LPI DT

Total 9289

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT	PROJECT L12
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<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA (SSN BZ9750)	1683	1731	1655	2676	2672	1707	3679	0	26454
OPA (SSN BZ7326)	11168	15613	20226	3243	22615	17501	95687	Continuing	Continuing
RDTE (PE 63774 131) - Tactical SIGINT Payload (TSP) only	6936	8000	7000	0	0	0	0	0	21936
RDTE PROPHET DCP (030885G)	7775	3916	3357	5377	6267	8050	7597	Continuing	Continuing
RDTE (PE 35204 11B) - Tactical SIGINT Payload (TSP) Development	0	0	0	5868	23711	20107	11850	Continuing	Continuing

C. Acquisition Strategy: The Prophet and the Tactical SIGINT Payload (TSP) 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. 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 TSP Component Advanced Development (CAD) phase is under PE 63774 131. The TSP System Development and Demonstration Phase contract is currently planned to be competitively awarded, funding will be under PE 35204 11B.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Conduct Prophet Block I ES (COMINT) IOTE	1Q						
Conduct Prophet Block II EA Characterization Test	2Q						
Received Milestone C Production Decision for Prophet Block I ES (COMINT)	2Q						
Conduct Prophet Block III/II Component Advanced Development Phase		1-3Q					
Conduct SSEB for Prophet Block III LPI SDD Contract		2-4Q					
Milestone B Decision for Prophet Block III LPI SDD Contract		4Q					
Award Prophet Block III LPI SDD Contract			1Q				
Milestone B Decision for Tactical SIGINT Payload (TSP) SDD				2Q			

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L12

D. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Award Tactical SIGINT Payload (TSP) SDD Contract				3Q			
Conduct SSEB for Prophet IV SIGINT/MASINT Fusion SDD Contract			2-4Q				
Milestone B for Prophet Block IV SIGINT/MASINT Fusion				4Q			
Award Prophet Block IV SIGINT/MASINT Fusion SDD Contract					1Q		
Milestone C Decision for Prophet Block III LPI					1Q		
Award Prophet Block III LPI Production Contract					1Q		
Conduct Prophet Block IV SIGINT/MASINT Fusion IOT&E							3Q
Conduct Tactical SIGINT Payload IOT&E							3Q
Milestone C for Prophet Block IV SIGINT/MASINT Fusion							4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	250	250
b . Refurbish HMMWV for Prophet	MIPR	Tobyhanna Army Depot, PA	1384	0		0		0		0	1384	1384
c . EA Study	C-CPFF	Rockwell Collins, Cedar Rapids, IA	315	0		0		0		0	315	315
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	1551	1551
e . Prophet Block I ES (COMINT) Contract	C-CPFF	Delfin Sys Corp, Santa Clara, CA	3140	0		0		0		0	3140	3140
f . Prophet Block II EA Contract	C-FFP	Rockwell Collins, Cedar Rapids, IA	3767	0		0		0		0	3767	3767
g . Risk Mitigation UAV	T&M	BAE, Landsdale, PA	809	0		0		0		0	809	809
h . Risk Mitigation UAV	MIPR	PM UAV, AL	742	0		0		0		0	742	742
i . Risk Mitigation & Demonstration of Data Transport Capabilities	SS-CPFF	L3Comm, Salt Lake City, Utah	0	955	3Q	0		0		0	955	955

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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 . Prophet Block III LPI SDDP Contract	C-CPXF	TBD	0	0		0		7671	1Q	Continue	Continue	Continue
k . Prophet Block III Risk Mitigation	MIPRs	Various	0	156	3Q	275	1Q	0		0	431	431
l . Prophet Studies & Analysis	MIPR	EPG, AZ	1490	0		0		0		0	1490	1490
Subtotal:			13448	1111		275		7671		Continue	Continue	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	HQ, CECOM, NJ	1320	470	1Q	750	1Q	250	1Q	Continue	Continue	Continue
b . Contractor Eng & Spt	FFP	Sytex; Doylestown PA	303	0		100	1Q	0		0	403	403
c . Contractor Eng & Spt	FFP	CACI; Falls Church VA	325	0		0		0		0	325	325
d . ASARC Spt	T&M	Computer Science Corp, Falls Church, VA	86	0		0		0		0	86	86

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604270A - EW DEVELOPMENT

L12

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
e . TSM/NSTO	MIPR	TSM, Ft Huachuaca, AZ	100	50	3Q	100	1Q	0		0	250	250
f . SSEB Support	MIPR	Various	0	0		170	3-4Q	0		0	170	170
g . Contractor Eng & Spt	TBD	TBD	0	0		0		200	1Q	Continue	Continue	Continue
Subtotal:			2134	520		1120		450		Continue	Continue	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 . Demonstrate COMINT & EA subsystems for Prophet	MIPR	Various	1015	0		0		0		0	1015	1015
b . Conduct Prophet Block I DT/IOT&E and Characterzation Test	MIPR	EPG, AZ	3594	0		0		0		0	3594	3594
c . Conduct Prophet Block I/II DT/IOT&E	MIPR	Various	2033	0		0		0		0	2033	2033
d . Prepare for Prophet Block III DT	MIPR	Various	0	0		0		618	3Q	Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L12

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 . Prophet Block I ES (COMINT) DT/IOTE	T&M	Delfin Systems Corp, Santa Clara, CA	323	0		0		0		0	323	323
Subtotal:			6965	0		0		618		Continue	Continue	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, Signals Warfare, NJ	1766	1308	1Q	336	1Q	550	1Q	Continue	Continue	Continue
Subtotal:			1766	1308		336		550		Continue	Continue	Continue

Project Total Cost:			24313	2939		1731		9289		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT					PROJECT L15			
COST (In Thousands)		FY 2001 Actual	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	1893	2202	2297	1396	1295	2586	Continuing	Continuing

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)

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604270A - EW DEVELOPMENT

PROJECT

L15

FY 2002 Planned Program (Continued)

- 693 Engineering Development, Intelligence Support, Database Support, & Dissemination (Common Intel Database): Define requirements for a common intelligence database analysis and MDS tool for use by ARAT-TA (Kelly and Eglin AFBs) and ARAT-SE. The functionality must include common user interface, intelligence inputs, modular threat analysis and MDS generator tools, and output formats to support intelligence reporting, RF scenarios inputs and MDS inputs for EWOSS/MLV to leverage the use of existing tools such as the Major Radar Database (MRDB) as much as practical.

Total 1893

FY 2003 Planned Program

- 475 Engineering Development (TSS Survey): Complete the Survey initiated in FY02 to identify TSS requiring support in Army Battlefield Functional Area (BFAs) with a focus on operational, technical, and intelligence aspects. This would include technical information about the actual TSS and their near and far term support requirements for intelligence collection, flagging, and threat analysis, Mission Data Set (MDS), communications, and filed support.
- 500 Intelligence Support (Platform Intelligence Integration): Building on the work completed in FY02 determine individual platform benefits vs. potential costs to upgrade systems on each Aviation platform. Initiate lab testing of potential system updates to verify the additional benefit and identify intelligence collection methodology to integrate the collected intelligence data onto an intelligence network.
- 275 Database Support (Flagging Model): Work jointly with the USAF at Kelly AFB, TX to complete the conversion of the current flagging database structure shared by the US Army and USAF flagging models to a more modern database structure. In addition, initiate converting the US Army flagging models over to the new database structure.
- 300 Dissemination (EWOSS/MLV): Using the upgraded EWOSS 2000 software, define and internally alpha test a common MLV system with flexible data protocols to support the associated cables and protocols required for each US Army TSS being reprogrammed. After completing alpha testing, initiate beta testing with field users including the use of the training aids developed in FY02.
- 652 Engineering Development, Intelligence Support, Database Support, & Dissemination (Common Intel Database): Using the requirements definition completed in FY02, initiate the development of the common intelligence database analysis and MDS tool. Complete the user interface, database structure, output formats, and placeholders for the internal threat analysis and MDS generator tools.

Total 2202

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604270A - EW DEVELOPMENT

PROJECT

L15

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.

<u>D. Schedule Profile</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		2-4Q	1-4Q	1-2Q	1-2Q	1-2Q	1Q
Intelligence Support		3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Database Support		3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Dissemination		3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Engineering Development, Intelligence Support, Database Support, & Dissemination		2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Develop Relational DB for new threats to include Blue Signals			1-4Q	1-4Q	1-4Q		
Transmission Paths.			2-4Q	1-4Q			
Support Army and Joint Contingencies and Exercises in the area of Rapid reprogramming of TSS		2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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)	TBD	CECOM, Fort Monmouth, NJ	0	0		550	2-4Q	650	1-4Q	Continue	Continue	Continue
b . Travel	TBD	TBD/Various sites	0	0		49	2-4Q	45	1-4Q	Continue	Continue	Continue
Subtotal:			0	0		599		695		Continue	Continue	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 . Development Support (CECOM SEC Omnibus)	TBD	TBD/Various sites	0	0		300	2-3Q	400	1-3Q	Continue	Continue	Continue
b . Development Support (CECOM RDEC T&E)	TBD	TBD/Various sites	0	0		585	2-4Q	695	1-4Q	Continue	Continue	Continue
Subtotal:			0	0		885		1095		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604270A - EW DEVELOPMENT

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
			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
a . Labor (Int and Contact)	TBD	CECOM and ARAT-TA/LIWA	0	0		409	2-4Q	412	1-4Q	Continue	Continue	Continue
Subtotal:			0	0		409		412		Continue	Continue	Continue

Project Total Cost:			0	0		1893		2202		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT				PROJECT L16	
COST (In Thousands)	FY 2001 Actual	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	1394	1396	1492	1488	1586	1583	Continuing	Continuing

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 that 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.
 - 256 Develop prototype QRC Receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP technologies.
 - 638 Investigate compression/processing technologies to reduce communications bandwidth requirements for remoted TROJAN systems, including streaming audio technologies.
- Total 1394

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L16

FY 2003 Planned Program

- 429 Conduct operational testing and evaluation of previously developed special processing devices and software with enhanced signal processing algorithms.
- 500 Acquire and apply multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput.
- 467 Integrate Direction Finding (DF) and geolocation technologies into TROJAN Remote Receiving Groups (RRGs).

Total 1396

<u>B. Other Program Funding Summary</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>
OPA BA0331	4225	4857	4873	5052	5186	5261	5365	0	42545

C. Acquisition Strategy: Not applicable for this item.

D. Schedule Profile: Not applicable for this item.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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		256	2Q	0		Continue	Continue	Continue
b . Develop DF Capabilities for TROJAN RRG	MIPR	CECOM I2WD Ft Monmouth	0	0		0		467	2Q	Continue	Continue	Continue
c . Investigate Compression /processing technologies	MIPR	CECOM I2WD Ft Monmouth	0	0		638	3Q	0		Continue	Continue	Continue
Subtotal:			0	0		894		467		Continue	Continue	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 . Aquire & Apply muliti bandwidth compr Algorithm	MIPR	CECOM I2WD FT Monmouth	0	0		0		500	3Q	Continue	Continue	Continue
Subtotal:			0	0		0		500		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	3Q	0		Continue	Continue	Continue
b . Operational test/eval of enhanced SIG Processing	MIPR	CECOM I2WD Ft Monmouth	0	0		0		429	3Q	Continue	Continue	Continue
Subtotal:			0	0		500		429		Continue	Continue	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
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			0	0		1394		1396		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604280A - Joint Tactical Radio System						PROJECT 162		
COST (In Thousands)	FY 2001 Actual	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	59814	74814	65818	50909	40053	63489	47106	0	460440

A. Mission Description and Budget Item Justification: The mission of the Joint Tactical Radio System (JTRS) program is to provide software programmable, reconfigurable digital radio systems to meet Joint Vision 2020 requirements for interoperability, flexibility, adaptability, and information exchange. The program will acquire a family of affordable, scaleable, high-capacity, interoperable Line of Sight (LOS) and Beyond Line of Sight (BLOS) radios to support simultaneous networked voice, data, and video transmissions with low probability of intercept within the frequency band of 2Mhz to 2GHz. The program will provide operational forces with an upgraded interoperable communications capability for improved battlespace management and increased warfighter effectiveness. Additionally, JTRS will contribute to Homeland Security and Defense, providing communications interoperability among civil and local agencies, particularly First Response units.

The JTRS program is a distributed acquisition effort, with acquisition responsibilities provided by Service acquisition agencies. The JPO is responsible for (1) the overall management and oversight of the JTRS program, (2) development, validation, and evolution of a common JTRS Software Communications Architecture (SCA), (3) development and maintenance of waveform software applications, (4) development of software cryptographic algorithms, and (5) testing and certification of JTRS hardware and software products. Service acquisition agencies are responsible for acquiring and fielding particular systems to meet specific warfighter needs, including hardware development, integration of software, and platform integration efforts. This approach promotes commonality, jointness and interoperability, providing cost savings through maximization of software code porting and reuse, technology insertion, and common solutions, while allowing flexibility to meet unique requirements. The Army is the Executive Service for the joint program.

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

FY 2001 Accomplishments:

- 19722 Maintained and evolved the SCA.
- 18047 Began acquisition of waveforms and crypto algorithm software listed in JTRS ORD (Operational Requirements Document).
- 7460 Provided for technology advancement and problem resolution, to include areas such as multiple independent levels of security (MILS), multilevel security (MLS), and network security.
- 7278 Began implementation of hardware and software waveform certification process (SCA compliance testing).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development**0604280A - Joint Tactical Radio System****162****FY 2001 Accomplishments: (Continued)**

- 4427 Continued Joint Program Office (JPO) technical support, including the definition and specification of a new wideband networking waveform, systems engineering, spectrum allocation and approval for use, systems security engineering and problem resolution and support of Software Communications Architecture (SCA) activities. Provided technical guidance to Service program management offices (PMOs). Provided oversight for all DoD radio acquisitions to ensure JTRS interoperability.
- 2880 Continued JPO program support, including administration, program management, international cooperative efforts, legal, contracting, budget execution and cost estimating activities.

Total 59814

FY 2002 Planned Program

- 3000 Maintain and evolve the SCA.
- 49164 Continue acquisition of waveforms listed in JTRS Operational Requirements Document (ORD), including significant activities associated with development of complex waveforms. Continue development of crypto algorithm software.
- 7500 Continue technology advancement and problem resolution, to include areas such as multiple independent levels of security (MILS), multilevel security (MLS), network security, and network modeling.
- 5001 Continue hardware and software waveform certification process (SCA compliance testing) to meet program requirements.
- 6350 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 to ensure JTRS interoperability.
- 3799 Continue JPO program support, including administration, program management, international cooperative efforts, legal, contracting, budget execution, and cost estimating activities.

Total 74814

FY 2003 Planned Program

- 1500 Maintain and evolve the SCA.
- 47421 Continue acquisition of waveforms listed in JTRS ORD, including significant efforts associated with development of complex waveforms initiated in FY02. Continue development of crypto algorithm software.
- 2500 Continue technology advancement and problem resolution, to include areas such as multiple independent levels of security (MILS), multilevel security (MLS), and network security.

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604280A - Joint Tactical Radio System

162

FY 2003 Planned Program (Continued)

- 5352 Continue hardware and software waveform certification process (SCA compliance testing).
- 5725 Continue Joint Program Office (JPO) technical support, including waveform development, system engineering, spectrum allocation and approval for use, systems security engineering and problem resolution and support of Software Communication Architecture (SCA) activities. Provide technical guidance to Service Program Management Offices (PMOs). Provide oversight for all DoD radio acquisitions to ensure JTRS interoperability.
- 3320 Continue JPO program support, including administration, program management, international cooperative efforts, legal, contracting, budget execution and cost estimating activities.

Total 65818

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	61648	80449	65973
Appropriated Value	62218	75449	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-635	0
b. SBIR / STTR	-1833	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-571	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-155
Current Budget Submit (FY 2003 PB)	59814	74814	65818

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604280A - Joint Tactical Radio System	PROJECT 162
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<u>C. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, 0604805A C3 Systems - Eng Dev; project 615, JTRS Ground Domain Integration	27447	93238	63551	61136	46335	28797	4882	Continue	Continue
RDTE, 0603713A Army Data DIA System; project 370, JTRS Army Data Distribution System	17	0	0	0	0	0	0	0	3741
OPA, Army Data Distribution System, BU1400 (EPLRS/JTRS; shared funding in FY05/06)	0	0	0	0	117812	199562	120017	Continue	Continue
RDTE, 0604201A Aircraft Avionics	40527	50838	40308	59535	31645	30893	6327	Continue	Continue
APA, JTRS A-Kit Procurement AA0702	0	0	0	1941	2155	21604	131329	Continue	Continue

D. Acquisition Strategy: The JTRS acquisition strategy consists of a three-step process:

Step 1 ? Baseline definition of the software architecture. This step was completed in FY99.

Step 2 ? Development and validation of the SCA. Step 2 is further divided into three parts. 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). The SCA is currently at Version 2.2, which was published in December 2001. 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 managed and partially funded by PM Tactical Radio Communications (TRCS), is another prototyping activity. It will demonstrate that the SCA supports the security enhancements now in the SCA and JTRS networking requirements.

Step 3 ? In Step 3, the JPO will develop waveform software applications and certify JTRS products. This step will be on-going. The JPO will develop waveforms as identified in the JTRS Operational Requirements Document (ORD). To reduce cost and ensure ?best value? for waveform development, the JPO will group similar waveforms in consolidated acquisition efforts. The JPO will also develop certification tools and procedures for the testing of JTRS products. Also in Step 3, the Services will acquire and field JTRS radios. The Defense Acquisition Executive (DAE) Review on October 30, 2000, approved the basic acquisition approach and the first Joint Cluster procurement. Cluster 1 is a joint acquisition led by the Army (PM TRCS).

A Defense Acquisition Board (DAB) Program Review was held on July 19, 2001. On August 2, 2001, the Defense Acquisition Executive (DAE) signed a memorandum that approved the JTRS acquisition strategy. This memorandum also designated the JTRS SCA and waveform program an ACAT 1D program, to be managed by the JTRS JPO. The Cluster 1 acquisition was also designated an ACAT 1D program, to be managed by the Army?s Program Executive Officer,

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604280A - Joint Tactical Radio System

PROJECT
162

Command, Control, and Communication Systems (PEO C3S).

The SCA has been established as the standard for future DoD radio procurements. The JPO is also advocating the SCA as a commercial and international industry standard. This approach will enable DoD to leverage off the substantially larger research and development budgets and volume productions of the commercial marketplace. The JPO is working with standards bodies (such as the Object Management Group) and forums (such as the Software Defined Radio Forum) to transition the SCA to commercial industry, and will represent DoD interests in those groups when the transition is made. As an international standard, the SCA will also meet the Joint Vision 2020 goal of United States communications interoperability with allied and coalition partners.

<u>E. Schedule Profile</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 Step 2A Consortium SCA Validation with Waveforms and Prototypes	1Q						
Deliver Version 2.0 of SCA	1Q						
DAE Review	1Q						
Maintain and Evolve SCA	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Address Technology Advancement Issues and Problem Resolution	3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
DAB Program Review	4Q						
Deliver Version 2.2 of SCA		1Q					
Acquire ORD Waveforms		3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Provide Certification of JTRS SCA Compliance for Acquired Systems and Waveforms		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

NOTE: All milestones scheduled through 1QFY2002 have been accomplished.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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*	Various	Various	42367	19722	1-4Q	3000	2-3Q	1500	2Q	Continue	Continue	Continue
b . Waveform Development; Crypto S/W; Waveform Sustainment Engineering	Various	Various	815	18047	2-4Q	49164	2-3Q	47421	1-3Q	Continue	Continue	Continue
c . Certification (SCA Compliance Testing)	Various	Various	30	7278	2-4Q	5001	1-3Q	5352	1-3Q	Continue	Continue	Continue
d . Technology Advancement/Problem Resolution	Various	Various	0	7460	3-4Q	7500	2-3Q	2500	1-2Q	Continue	Continue	Continue
Subtotal:			43212	52507		64665		56773		Continue	Continue	Continue

Remarks: * Step 2C activities partially funded in Army Program Element 0604805A; Managed by PM TRCS.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604280A - Joint Tactical Radio System	PROJECT 162
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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	11208	4427	1-4Q	6350	1-3Q	5725	1-3Q	Continue	Continue	Continue
Subtotal:			11208	4427		6350		5725		Continue	Continue	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
Subtotal:			0	0		0		0		0	0	0

Remarks: *System and operational testing performed by the Services; funded in Service appropriations.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604280A - Joint Tactical Radio System

162

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	5522	2880	1-4Q	3799	1-4Q	3320	1-4Q	Continue	Continue	Continue
Subtotal:			5522	2880		3799		3320		Continue	Continue	Continue
Project Total Cost:			59942	59814		74814		65818		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604321A - ALL SOURCE ANALYSIS SYSTEM

COST (In Thousands)	FY 2001 Actual	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	45586	44198	42322	43763	32735	18761	81154	0	394626
B19 ASAS EVOLUTIONARY ACQ (TIARA)	43771	41862	39961	40538	30304	15772	75962	0	365075
B41 CI/HUMINT SOFTWARE PRODUCTS (TIARA)	1815	2336	2361	3225	2431	2989	5192	0	29551

A. Mission Description and Budget Item Justification: This program funds the development of the All Source Analysis System (ASAS). 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. 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. The system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

This program was provided a supplemental fund called Defense Emergency Response Fund (DERF), as a non-add, for the following fiscal years: FY03 \$9.3M; FY04 \$23M; FY05 \$20M; FY06 \$12M; FY07 \$13M.

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604321A - ALL SOURCE ANALYSIS SYSTEM

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	43680	42166	40618
Appropriated Value	44084	44566	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-368	0
b. SBIR / STTR	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	1907	0	0
e. Rescissions	-405	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	1704
Current Budget Submit (FY 2003 PB)	45586	44198	42322

Change Summary Explanation: Funding - FY 2001: Increase due to supplemental for the Joint Common Database (JCDB). FY03: increase due to internal transfer from OPA to RDTE to align with Life Cycle Cost Estimate (LCCE)interfaces.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604321A - ALL SOURCE ANALYSIS SYSTEM				PROJECT B19	
COST (In Thousands)	FY 2001 Actual	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)	43771	41862	39961	40538	30304	15772	75962	0	365075

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, and multi-source processing, intelligence reporting, electronic warfare/countermeasures, and operational security as well as "digitized Army" automation support. ASAS is providing incremental prototype software for military intelligence operations in the 4th Infantry Division and is part of the Army Transformation.

FY 2001 Accomplishments:

- 40861 Continued Block II ASAS EMD
 - Extended ASAS Block II contract to align with ABCS milestones
 - Participated in ABCS Digital Capstone Exercise
 - Initiated development of RWS V 7
 - Initiated development of ASAS-Light V 7
 - Completed development of ASAS-Light V 6
 - Completed development of RWS V 6
 - Continued Block II ACE development
- 25 Conducted Developmental Testing of RWS V 6
- 25 Conducted ASAS-Light V 6 Development Test
- 1182 Developed IMI for RWS V 6
- 1678 System Engineering and Integration Efforts

Total 43771

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604321A - ALL SOURCE ANALYSIS SYSTEM

PROJECT

B19**FY 2002 Planned Program**

- 37987 Continue Block II ASAS EMD
 - Participate in ABCS Digital Capstone Exercise
 - Continue development of RWS V 7
 - Continue development of ASAS-Light V 7
 - Continue development of Block II Analysis Control Element (ACE)
- 525 Complete RWS V 6 Developmental Test
- 100 Complete ASAS-Light V 6 Developmental Test
- 2650 Conduct ACE Developmental Test
- 600 System Engineering and Integration Efforts

Total 41862

FY 2003 Planned Program

- 38131 Continue Block II ASAS EMD
 - Continue development of RWS V 7
 - Complete development of ASAS-Light V 7
 - Initiate development of RWS V 8
- 400 -Initiate development of ASAS-Light V 8-Conduct operational test for ACE
- 700 Conduct RWS V 7 Development Test
- 50 Conduct ASAS-Light V 7 Development Test
- 680 System Engineering and Integration Efforts

Total 39961

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604321A - ALL SOURCE ANALYSIS SYSTEM

PROJECT
B19

<u>B. Other Program Funding Summary</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>
OPA (K28801) ASAS Modules	71567	47960	57886	72101	50083	46544	107006	Continuing	Continuing
Spares (BS9704)	629	797	747	1061	0	0	0	Continuing	Continuing

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 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.

<u>D. Schedule Profile</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>
RWS V 6 Development	1-4Q						
RWS V 6 Test (DT)	4Q	1-3Q					
ACT-E Test (DT)							
ASAS-Light V 4 Development							
ASAS-Light V 4 DT							
ASAS-Light V 6 Development	1-4Q						
ASAS_Light V6 Developmental Test	4Q	1-3Q					
ASAS-Light V 7 Development	4Q	1-4Q	1-3Q				
ASAS-Light V 7 Developmental Test			4Q				
ASAS-Light V 8 Development			4Q	1-4Q	1-3Q		
ASAS-Light V 8 Developmental Test					4Q		
RWS V 7 Development	4Q	1-4Q	1-3Q				
RWS V7 Developmental Test			4Q				
RWS V 8 Development			4Q	1-4Q	1-3Q		
RWS V 8 Developmental Test					4Q		
Block II ACE Development	1-4Q	1-2Q					
Block II ACE Developmental Test		3-4Q	1Q				

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604321A - ALL SOURCE ANALYSIS SYSTEM

PROJECT
B19

<u>D. Schedule Profile (continued)</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 OT			2Q				
Block II EMD			1-4Q				
Block II ASAS Milestone III (includes ACE)				2Q			
Block III EMD				1-4Q	1-4Q	1-4Q	
Block IV EMD							1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	165935	29171	1Q	26282	1Q	27046		Continue	Continue	0
b . Subsystem Development	CPFF	EWA	9795	0		0		0		0	9795	0
c . Subsystem Development	GSA D.O.	AIS	4000	4200	1Q	4425	1Q	4200	1Q	Continue	Continue	0
d . IMI Development	MIPR	Army Training Support Center, Ft. Eustis VA	0	1347	2Q	0		0		0	1347	0
e . Test Hardware	MIPR	CHS (GFE)	5686	0		0		0		0	5686	0
f . System Engineering and Integration Efforts	MIPR	Ft. Monmouth, VA	0	1678	1Q	600	1Q	680	1Q	0	2958	0
Subtotal:			185416	36396		31307		31926		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604321A - ALL SOURCE ANALYSIS SYSTEM

B19

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	1Q	250	1Q	250	1Q	Continue	Continue	0
Subtotal:			200	250		250		250		Continue	Continue	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 . ASAS DT	MIPR	EPG, Ft Huachuca, AZ	2962	100	4Q	3275	1Q	750	1Q	Continue	Continue	0
Subtotal:			2962	100		3275		750		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604321A - ALL SOURCE ANALYSIS SYSTEM

PROJECT
B19

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	1035	1Q	Continue	Continue	0
b . Contractor Spt	BPA	SYTEX, Inc. Vienna, VA	14442	4500	1-4Q	4500	1-4Q	4500	1Q	Continue	Continue	0
c . Govt In House			13447	1500	1-4Q	1500	1-4Q	1500	1-4Q	Continue	Continue	0
Subtotal:			34721	7025		7030		7035		Continue	Continue	0
Project Total Cost:			223299	43771		41862		39961		Continue	Continue	0

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604321A - ALL SOURCE ANALYSIS SYSTEM						PROJECT B41		
COST (In Thousands)		FY 2001 Actual	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)	1815	2336	2361	3225	2431	2989	5192	0	29551

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 and 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 and 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 and I OPS workstation. CHIMS is in compliance with Army Distributed Common Ground Station (DCGS-Army) planning. CHIMS will play a vital role in interim DCGS-A, to be demonstrated at the 18th ABC in FY 03.

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

FY 2001 Accomplishments:

- 56 Continued CI/HUMINT Utilities Software Development
- 200 Continued development of CI/HUMINT Automated Management Software (CHAMS).
- 250 Continued development of CHATS V3.
- 100 Continued development of ITRT.
- 216 Continued CI and I OPS workstation hardware development.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604321A - ALL SOURCE ANALYSIS SYSTEM

PROJECT

B41**FY 2001 Accomplishments: (Continued)**

- 50 Conducted developmental testing.
- 50 Provided 1 CI and I OPS WS and 1 CHATS and 2 ITRT Test Articles.
- 893 Provided management services and program support for development of products.

Total 1815

FY 2002 Planned Program

- 56 Complete CI/HUMINT Utilities Software Development
- 656 Continue development of CHAMS software.
- 169 Complete development of CHATS V3.
- 200 Complete CI and I OPS WS development and conduct MS III.
- 100 Complete ITRT development and conduct MS III.
- 50 Provide 1 CI and I OPS WS and 1 CHATS and 2 ITRT Test Articles.
- 75 Obtain Generic Security Accreditation
- 351 Conduct developmental testing.
- 679 Provide management services and program support for development of products.

Total 2336

FY 2003 Planned Program

- 1471 Continue development of CHAMS software.
- 50 Mature ASAS CI/HUMINT Single Source (SS) workstation software.
- 40 Continue Security Accreditation efforts.
- 800 Provide management services and program support for development of products.

Total 2361

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604321A - ALL SOURCE ANALYSIS SYSTEM

PROJECT
B41

B. Other Program Funding Summary	<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 (PE 35208, Proj 956) DCGS-A (JMIP)	7839	72095	15683	15911	15625	45089	12933	Continuing	Continuing
OPA (BK5275) CHIMS (TIARA)	3000	2472	9735	9980	4953	5094	9826	0	49139

Note: \$3M DERF funds in FY02 support development of expanded mission functionality in CHAMS.

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 and I OPS workstation). CHAMS will continually be enhanced to keep pace with unfolding requirements. The hardware for all product lines is either an integration of commercial off-the-shelf (COTS) hardware or procured from PM CHS.

D. Schedule Profile	<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>
CI/HUMINT Utilities SW Development	2-4Q	1-2Q					
CHAMS Development and Testing	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
CHATS V3 Development and Testing	1-4Q	1-4Q					1-4Q
CI & I OPS Development and Testing	1-4Q	1-3Q		1-4Q	1-4Q		1-4Q
CI & I OPS Workstation Milestone III		4Q					
ITRT Development and Testing	1-4Q	1-3Q		1-4Q	1-4Q		1-4Q
ITRT Milestone III		4Q					
CHATs V4/V5 Development and Testing				1-4Q	1-4Q		1-4Q
Maturation of SS Workstation Software			1-4Q				
Interim DCGS-A Demonstration 18th ABC			4Q				
Interim DCGS-A Fielding III Corp				4Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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 . CI/HUMINT Utilities SW Development	IDIQ Competitive	Northrop Grumman, Sierra Vista, AZ	112	56	2Q	56	1Q	0		0	224	0
b . CHAMS Software	IDIQ Competitive	Northrop Grumman, Sierra Vista, AZ	1078	200	3Q	656	2Q	1471	2Q	Continue	Continue	0
c . CHATS V3 Development	IDIQ Competitive	ESS, Fredrick, MD	1389	250	2Q	169	1Q	0		0	1808	0
d . CI/HUMINT SS SW Development	IDIQ Competitive	Northrop Grumman, Sierra Vista, AZ	0	0		0		50	1Q	0	50	0
e . CI & I OPS WS Development	IDIQ Competitive	ESS, Fredrick, MD	1150	216	2Q	200	2Q	0		Continue	Continue	0
f . ITRT Development	IDIQ Competitive	ESS, Fredrick, MD	244	100	2Q	100	2Q	0		Continue	Continue	0
g . Refugee Management System	CPFF	EWA, Fairmount, WV	3000	0		0		0		0	3000	0
Subtotal:			6973	822		1181		1521		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604321A - ALL SOURCE ANALYSIS SYSTEM

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	100	1Q	100	1Q	100	1Q	Continue	Continue	0
Subtotal:			305	100		100		100		Continue	Continue	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	351	2Q	0		Continue	401	0
b . Developmental Test	MIPR	EPG, Ft. Huachuca, AZ	304	0		0		0		Continue	Continue	0
c . Operational Test	MIPR	IEWTD, Ft. Huachuca, AZ	79	0		0		0		Continue	79	0
d . Test Articles	MIPR	ESS, Fredrick, MD	20	50	2Q	50	2Q	0		Continue	Continue	0
e . Security Accreditation	MIPR	CECOM, Ft. Monmouth, NJ	30	0		75	2Q	40	2Q	Continue	145	0
Subtotal:			433	100		476		40		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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/The Sytex Group, Ft. Belvoir, VA	1012	693	1Q	331	1Q	452	1Q	Continue	2488	0
b . Government Matrix	MIPR	PEO I2WD CECOM, Ft. Monmouth, NJ	0	0		148	1Q	148	1Q	Continue	296	0
c . Government In House	MIPR	PMO Intel Fusion, Ft. Belvoir, VA	342	100	1Q	100	1Q	100	1Q	Continue	642	0
Subtotal:			1354	793		579		700		Continue	3426	0
Project Total Cost:			9065	1815		2336		2361		Continue	Continue	0

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604329A - Common Missile						PROJECT 013		
COST (In Thousands)	FY 2001 Actual	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	4683	16592	29919	48485	64564	66009	71030	298300	599582

A. Mission Description and Budget Item Justification: The Common Missile is an Objective Force missile system that provides Line of Sight (LOS), Non-Line of Sight (NLOS) and Beyond Line of Sight (BLOS) capabilities, including precision strike and fire and forget technologies, increased range, and increased lethality for both ground and air combat systems, such as Comanche Reconnaissance Helicopter (RAH-66), the Future Combat Systems (FCS), the Interim Armored Vehicle (IAV), the Apache Attack helicopter (AH-64) and the Bradley A3. The Common Missile maximizes the warfighters' operational flexibility by allowing them to effectively engage a variety of stationary and mobile targets on the digital battlefield, including advanced armor, bunkers, buildings, command and control vehicles, transporter/erector (SCUD) launchers and light armored vehicles. Another goal of the Common Missile is to minimize the logistics footprint of the combat force. Common Missile reduces the number of different types of missiles that will need to be shipped to and serviced in a combat zone, and allows flexibility in the location of resupply on the battlefield. Common Missile's modular design and continuous parallel technology insertion program will reduce life-cycle costs, including demilitarization, while ensuring the missile system continues to provide the required improvements to keep pace with needed capabilities and advancing threats. The Common Missile will replace the aging stocks of TOW and HELLFIRE families of missiles. Developmental cost is much less than that required to develop four separate missile systems. Funding ramp -up from from FY02 to FY03 is necessary for technology maturation and preliminary systems integration. This will be accomplished using SMART (simulation and modeling for acquisition, requirements and training) to begin systems integration efforts of the enabling subsystems, including multi-mode seekers, variable thrust propulsion and advanced warheads. In FY04, Common Missile will enter into the Systems Development and Demonstration (SDD) phase. Additionally, an MOU with the United Kingdom was signed 7 December 2001 for a cooperative development of the Common Missile. Common Missile supports the Army's transformation by providing a system with enhanced supportability and a significant increase in operational capability. The system supports the Legacy to Objective transition path of the Transformation Campaign (TCP).

FY 2001 Accomplishments:

- 3707 Initiated Risk Reduction engineering effort on seeker, warhead, propulsion and platform integration
 - 976 Initiated Systems Engineering - Risk Reduction effort for testbed, warhead/rocket motor design and test, and GPS/IMU evaluation
- Total 4683

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604329A - Common Missile

013

FY 2002 Planned Program

- 11809 Continue Risk Reduction engineering effort on seeker, warhead, propulsion and platform integration
- 4783 Continue Systems Engineering - Risk Reduction development of multi-sensor testbed, tri-mode seeker, GPS/IMU, controllable propulsion and enhanced multi-functional warheads

Total 16592

FY 2003 Planned Program

- 24894 Complete Risk Reduction engineering effort on seeker, warhead, propulsion and platform integration
- 5025 Complete Systems Engineering - Risk Reduction evaluation of sensor models, geometric/performance models, perform warhead lethality, and continue development of seeker, sensor, propulsion and warhead technologies

Total 29919

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	4923	16731	35589
Appropriated Value	4969	16731	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-139	0
b. SBIR/STTR	-146	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	-94	0	0
e. Recissions	-46	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-5670
Current Budget Submit (FY 2003 PB)	4683	16592	29919

FY03 funding decrease a result of higher Army priorities.

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604329A - Common Missile

PROJECT
013

C. Other Program Funding Summary

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
C70302: Common Missile	0	0	0	0	0	0	40687	Continue	Continue

D. Acquisition Strategy: The Common Missile risk reduction effort used full and open competition. The SDD effort will be competed between the System Definition/Risk Reduction contractors.

E. Schedule Profile

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
CONCEPT/TECH DEVELOP & RISK REDUCTION							
Contract Award Initial Designs	4Q						
Requirements Flowdown/Trade Studies	4Q						
Design/Procure Tandem Warhead Hardware		1-2Q					
System Requirements Review		2Q					
ESAF/Warhead Review		4Q					
Propulsion Design Review		4Q					
Baseline Design Review			1Q				
Complete Performance Modeling & Virtual Prototype			3Q				
Complete Initial Design CAD/CAE			3Q				
Complete Simulation of System in Battlefield			4Q				
Milestone B Decision			4Q				
SYSTEM DEVELOPMENT AND DEMONSTRATION							
Contract Award				1Q			
Preliminary Design Review					1Q		
Critical Design Review					3-4Q		
System Qualification						2-4Q	
Limited User Test							2Q

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604329A - Common Missile

PROJECT
013

E. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
PRODUCTION AND DEPLOYMENT							
LLI IPR						4Q	
LLI Award							1Q
Milestone C Decision							4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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)	CPIFF, Full & Open	Raytheon, AZ; Lockheed Martin, FL; Boeing, AL	0	900	4Q	6137	1Q	12690	1Q	0	19727	0
b . Support Contracts (Risk Reduction)	Various	Various	0	1696	1-4Q	2956	1-4Q	4924	1-3Q	10995	20571	0
c . Development Engineering (Risk Reduction/SDD)	Various	Various	0	1111	1-3Q	2716	1-4Q	7280	1-4Q	5925	17032	0
d . Prime Contracts (SDD)	TBD	TBD	0	0		0		0		418173	418173	0
Subtotal:			0	3707		11809		24894		435093	475503	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 Support	TBD	TBD	0	0		300	1Q	315	1Q	8500	9115	0
Subtotal:			0	0		300		315		8500	9115	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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
a . Prime Contract/Government Inhouse	TBD	TBD	0	0		0		0		28961	28961	0
Subtotal:			0	0		0		0		28961	28961	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	976	1-4Q	4483	1-4Q	4710	1-4Q	75834	86003	0
Subtotal:			0	976		4483		4710		75834	86003	0

Project Total Cost:			0	4683		16592		29919		548388	599582	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604604A - MEDIUM TACTICAL VEHICLES				PROJECT H07	
COST (In Thousands)	FY 2001 Actual	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	2014	1945	1953	2939	2928	1981	1976	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element supports continued modernization of the Army's medium truck fleet. The Family of Medium Tactical Vehicles (FMTV) replaces aging M44 Series 2 1/2-ton trucks, M39 and M809 Series 5-ton trucks that are beyond their average useful life of 20-22 years. FMTV also provides follow-on to the M939/A2 Series 5-ton truck. FMTV is required to fill 2-½ Light Medium Tactical Vehicle (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; 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 2001 Accomplishments:

- 299 Power Management/Technology Insertion (Next Generation Electrical Architecture Development)
- 848 Load Handling System (LHS) (Platform/Trailer Proc, Engineering Support)
- 250 Cab Survivability Improvement (CSI) (Cab Mock-up)
- 294 Vehicle Component Improvements (Misc Engr Studies)
- 73 Trailer CAMEL Testing (Water Pod Compatibility)
- 250 Dump Bed Improvements (Study)

Total 2014

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604604A - MEDIUM TACTICAL VEHICLES

PROJECT

H07

FY 2002 Planned Program

- 25 Power Management/Technology Insertion (Next Generation Electrical Architecture Development)
- 1645 Load Handling System (LHS) (Perf Test (APG), Contr Test Support, Drawings)
- 150 Cab Survivability Improvement (CSI) (Study)
- 125 Vehicle Component Improvements (Misc Engr Studies)

Total 1945

FY 2003 Planned Program

- 25 Power Management/Technology Insertion (Next Generation Electrical Architecture Development)
- 495 Load Handling System (LHS) (Drawings, Report Writing)
- 450 Cab Survivability Improvement (CSI)(Ballistic Testing)
- 275 Vehicle Component Improvement (Misc Engr Studies)
- 500 Alternative Propulsion System (Engr Studies)
- 208 Active Suspension System (Engr Studies)

Total 1953

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604604A - MEDIUM TACTICAL VEHICLES

PROJECT
H07

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	1942	1962	1958
Appropriated Value	1959	1962	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-17	0
b. SBIR / STTR	-57	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0
d. Below Threshold Reprogramming	130	0	0
e. Rescissions	-18	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-5
Current Budget Submit (FY 2003 PB)	2014	1945	1953

<u>C. Other Program Funding Summary</u>	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)	464961	464137	681373	432528	696935	775517	1281020	Continue	Continue

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604604A - MEDIUM TACTICAL VEHICLES

PROJECT
H07

D. Acquisition Strategy: The contractual efforts will option on to the current contracts that are based on Time and Material (T&M).

<u>E. Schedule Profile</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>
Ballistic Protection (Ballistic Testing)			3Q				
FMTV - Load Handling System (LHS) - Developmental Testing and Evaluation		3-4Q					
Limited User Test (LUT) (FMTV A1 Competitive Rebuy)				3-4Q	1Q		

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604604A - MEDIUM TACTICAL VEHICLES

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	50	2-3Q	25	2Q	25	2Q	400	1505	0
b . Load Handling System (LHS)	C-T&M	S&S, Sealy, TX	393	848	2-3Q	560	2-3Q	495	1-2Q	0	2296	0
c . Dump Bed Design Initiatives/Load Sensor	PO	TACOM, Warren, MI	255	250	2-3Q	0		0		0	505	0
d . Cab Survivability Impr. (FMTV)	PO	TACOM, Warren, MI	0	250	3Q	150	2Q	200	3Q	1000	1600	0
e . Vehicle Component Improvements	C-T&M	Veridian, Ann Arbor, MI	0	294	2-3Q	125	2Q	275	2Q	200	894	0
f . Trailer CAMEL Modeling	C-T&M	S&S, Sealy, TX	0	73	2Q	0		0		0	73	0
g . Active Suspension System	PO	TACOM, Warren, MI	0	0		0		208	2Q	200	408	0
h . Alternative Propulsion System	PO	TACOM, Warren, MI	0	0		0		500	2Q	1500	2000	0
Subtotal:			1653	1765		860		1703		3300	9281	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604604A - MEDIUM TACTICAL VEHICLES

H07

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	73	0
b . Power Management/Technology Insertion		TACOM, Warren, MI	179	0		0		0		0	179	0
Subtotal:			252	0		0		0		0	252	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 . Load Handling System	PO	Aberdeen Proving Grounds, MD	0	0		1085	3-4Q	0		0	1085	0
b . Power Management/Technology Insertion	C-T&M	Camber, Warren, MI	0	249	2-3Q	0		0		229	478	0
c . Cab Survivability Impr. (FMTV)	PO	Aberdeen Proving Grounds, MD	0	0		0		250	3Q	227	477	0
Subtotal:			0	249		1085		250		456	2040	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604604A - MEDIUM TACTICAL VEHICLES

PROJECT
H07

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:												

Remarks: Not Applicable

Project Total Cost:			1905	2014		1945		1953		3756	11573	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604609A - Smoke, Obscurant and Target Defeating Sys-Eng Dev

COST (In Thousands)	FY 2001 Actual	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	3336	7854	8153	12604	4295	5380	7358	0	50665
198 TARGET DEFEATING SYSTEM	0	330	350	349	399	5380	7358	0	14319
200 SMOKE/OBSCURANT SYSTEM	3336	7524	7803	12255	3896	0	0	0	36346

A. Mission Description and Budget Item Justification: U.S. Forces must be able to effectively neutralize and degrade energy weapon systems and electro-optical systems/smart weapons that operate in the full range of the electro-magnetic spectrum. This program element supports the conduct of System Development and Demonstration (SDD) of logistically supportable, high performance smoke and obscurant agents, munitions, and devices to improve the survivability of the combined armed force and complement combined weapons systems. 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 SDD 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)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604609A - Smoke, Obscurant and Target Defeating Sys-Eng Dev

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
President's Previous Budget (FY 2002 PB)	3428	7920	8002
Appropriated Value	3461	7920	0
Adjustments to Appropriated Value (Inflation)	0	0	0
a. Congressional General Reductions	0	-66	0
b. SBIR / STTR	-93	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-32	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	151
Current Budget Submit (FY 2003 PB)	3336	7854	8153

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604609A - Smoke, Obscurant and Target Defeating Sys-Eng Dev	PROJECT 200
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COST (In Thousands)	FY 2001 Actual	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	3336	7524	7803	12255	3896	0	0	0	36346

A. Mission Description and Budget Item Justification: This project supports the conduct of System Demonstration (SD) 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 obscurant for installation on the M56 and any other required vehicle platforms. The MMW obscurant can obscure a target from emerging threat systems which use x-band, Ku-band, Ka-band, and W-band radar sensors. 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 2001 Accomplishments:

- 1600 MMW - Continued engineering design program, including logistical requirement studies and cost alternative studies.
 - 1061 MMW - Initiated assembly of engineering development and test prototype obscurant systems onto the M56 smoke system.
 - 300 MMW - Conducted analyses of alternative methods for the production and storage of MMW materials.
 - 375 MMW - Initiated toxicological and environmental studies required for materiel release of MMW materials.
- Total 3336

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.
- 688 MMW - Continues toxicological and environmental studies.

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604609A - Smoke, Obscurant and Target Defeating
Sys-Eng Dev**

PROJECT

200

FY 2002 Planned Program (Continued)

- 536 MMW - Initiates Government engineering design tests and conducts User Jury.

Total 7524

FY 2003 Planned Program

- 500 MMW - Conducts Government engineering design tests.
- 2000 MMW - Continues engineering design program and any necessary redesign after tests.
- 1900 MMW - Fabricates and installs MMW systems on six M56 for production qualification and initial operational tests. (Estimated value \$150K each MMW prototype system)
- 1000 MMW - Procures MMW material for tests.
- 558 MMW - Continues toxicological and environmental studies.
- 1000 MMW - Conducts design effort for integration of MMW into candidate armored platforms and robotic systems.
- 845 MMW - Constructs and initiates testing on prototype systems for candidate armored vehicle or robotic platforms(Quantity and Cost to be determined).

Total 7803

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604609A - Smoke, Obscurant and Target Defeating Sys-Eng Dev	PROJECT 200
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<u>B. Other Program Funding Summary</u>	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 552 Smoke/Novel Munitions	3840	3529	3675	3940	3904	4461	4605	Continuing	Continuing
RDTE,A Budget Activity 4, PE 0603627A, Smoke. Obscurant and Target Defeat	0	0	2438	10421	13590	6832	8821	Continuing	Continuing
Other Procurement Army, OPA3, M99103, M56 Smoke Generator	15287	23384	22966	23126	4898	9280	28530	0	139774
Other Procurement Army, OPA3, M99107, M58 Smoke System	4534	0	0	0	0	0	0	0	7939
Other Procurement Army, OPA3, G71300, M6 Discharger	0	0	2987	13464	3890	2966	987	0	26519

C. Acquisition Strategy: This project support the Millimeter Wave smoke generation system began engineering development in FY 2000 with a full and open competitive contract for engineering design, construction, and test of prototype systems mounted on the M56 smoke system. In FY 2003, a new effort will 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.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
MMW - Milestone I/II, Program initiation							
MMW - Initiate RDTE competitive contract							
MMW - Conduct engineering design testing (Contractor)		3-4Q					
MMW - Conduct engineering design testing (Government/User Jury)		4Q	1-2Q				
MMW - Initiate construction of prototype systems on armored or robotic platforms			1Q				
MMW - Initiate engineering modeling and design efforts on candidate armored vehicle platforms			1-3Q				

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
**0604609A - Smoke, Obscurant and Target Defeating
 Sys-Eng Dev**

PROJECT
200

D. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
MMW - Construct prototype systems on armored platforms			4Q				
MMW - Conduct Pre-Production Qualification Test (PPQT)				1-3Q			
MMW - Conduct Initial Operational Test and Evaluation (IOTE)				2-3Q			
MMW - Conduct Milestone III and system acceptance				4Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604609A - Smoke, Obscurant and Target Defeating Sys-
Eng Dev**

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	4668	1Q	4393	1Q	0	11773	0
b . MMW - Armored or robotic system integration planning	In house	SBCCOM, APG, MD	0	0		0	1Q	300	1Q	0	300	0
c . MMW - Armored or robotic system integration	C/CPFF	Titan Industries, Deland, Florida	0	0		0		300	1Q	0	300	0
Subtotal:			301	2411		4668		4993		0	12373	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	558	1Q	0	1457	0
b . MMW - Human factors design efforts on other platforms	In house effort	SBCCOM, APG, MD	0	0		60	1Q	100	1Q	0	160	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604609A - Smoke, Obscurant and Target Defeating Sys-
Eng Dev**

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		658		0	1617	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	233	0
b . MMW - Engineering design testing - Contractor	C/CPFF	Titan Industries, Deland, Florida	100	0		1200	1Q	1200	1Q	0	2500	0
Subtotal:			283	50		1200		1200		0	2733	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604609A - Smoke, Obscurant and Target Defeating Sys-
Eng Dev**

200

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	501	1Q	1071	1Q	714	1Q	0	2598	0
b . MMW - Project Management Personnel for robotic or armored platforms	In-house	SBCCOM, Edgewood, MD	0	0		0		238	1Q	0	238	0
Subtotal:			312	501		1071		952		0	2836	0

Remarks: 7651

Project Total Cost:			896	3336		7524		7803		0	19559	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604611A - JAVELIN							PROJECT 499	
COST (In Thousands)	FY 2001 Actual	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)	471	2825	489	972	968	0	0	0	11640

A. Mission Description and Budget Item Justification: Javelin is a critical system to the operational design of the Army's Objective Force because of its precision strike, man-portability, high reliability, and capability to engage multiple targets (tanks, APCs, bunkers, helicopter, walls, etc). These key system aspects support 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 its effectiveness in support of all three axes of Army Transformation. The Javelin, a replacement for the DRAGON, 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 program provides R&D funding for 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, multi-mission capability improvements, and software development. 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 2001 Accomplishments:

- 306 Continued development of Counter Active Protection System/Countermeasures Software
 - 165 Performed Warhead Damage Assessment Testing
- Total 471

FY 2002 Planned Program

- 292 Continue development of Counter Active Protection System/Countermeasures Software
 - 200 Initiate CAPS Antenna Development
 - 1063 Initiate CAPS technology transfer
 - 286 Perform seeker Trade Study
 - 984 Initiate design efforts to restructure the Guidance Electronics Unit
- Total 2825

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604611A - JAVELIN

PROJECT
499

FY 2003 Planned Program

- 489 Continue development of Counter Active Protection System/Countermeasures Software
- Total 489

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY 2002 PB)	485	492	490
Appropriated Value	490	2992	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-167	0
b. SBIR / STTR	-15	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Recissions	-4	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-1
Current Budget Submit (FY 2003 PB)	471	2825	489

FY02 Congressional increase of \$2.5 million for pre-planned product improvement.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604611A - JAVELIN	PROJECT 499
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<u>C. Other Program Funding Summary</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>
Missile Procurement, Army, CC0007, Javelin	318300	411750	250506	186327	148950	18359	120049	12000	3117226
Missile Procurement, Army, CA0269, Javelin Initial Spares	6554	2339	2895	3179	3094	803	0	0	27826

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.

<u>E. Schedule Profile</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>
CAPS Studies	1-2Q	1-2Q					
CAPS Generation 3 Development	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		
Transition of Jammer Technology		3-4Q	1Q				
Restructure of Guidance Electronics Unit		2-4Q	1Q				
Uncooled Seeker Trade Study		2-3Q					
Warhead Damage Assessment Testing	2Q						

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604619A - LANDMINE WARFARE						PROJECT 088		
COST (In Thousands)	FY 2001 Actual	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	19287	18780	11913	0	0	0	0	0	317283

A. Mission Description and Budget Item Justification: 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 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 2001 Accomplishments:

- 8108 Conducted Munition Receiver/Transmitter and Control Station Development
- 3027 Conducted Sublet Modifications
- 8152 Conducted Munition Integration

Total 19287

FY 2002 Planned Program

- 5376 Complete Sublet Modifications
- 5000 Complete Munition Integration
- 2046 Complete System Software Development
- 631 Conduct Logistics Demonstration
- 3598 Conduct System Demonstration and Limited User Test
- 1577 Conduct Trainer Development
- 135 Complete Munition Receiver/Transmitter Development
- 417 Conduct Control Station Development

Total 18780

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604619A - LANDMINE WARFARE

PROJECT
088

FY 2003 Planned Program

- 3366 Complete System Integration and Performance Verification
- 4847 Conduct Operational Tests
- 2225 Complete Trainer Development
- 1348 Prepare Documentation for Full Rate Production Decision Review
- 127 Complete Control Station Development

Total 11913

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	15756	18938	11941
Appropriated Value	15902	18938	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-158	0
b. SBIR / STTR	-469	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0
d. Below Threshold Reprogramming	3999	0	0
e. Recissions	-145	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-28
Current Budget Submit (FY 2003 PB)	19287	18780	11913

In FY01 \$3999K reprogrammed to meet scheduled milestones and complete development.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604619A - LANDMINE WARFARE	PROJECT 088
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<u>C. Other Program Funding Summary</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>
WAM, E78100 (PAA)	19149	2011	12466	35992	55515	57835	45041	Continue	Continue
WAM Remote Control Unit, G01000 (OPA)	0	3294	3223	3230	3937	3970	4045	Continue	Continue
WAM Individual Trainer, E78103 (PAA)	1395	3795	5640	6885	0	0	0	0	19490
WAM Collective Trainer, E78104 (PAA)	0	1941	3021	4032	0	0	0	0	8994

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 were 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.

<u>E. Schedule Profile</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>
WAM Basic - Material Release	2Q						
WAM PIP - MS C (TC LRP)		4Q					
WAM PIP - Full Rate Production Decision Review (TC-Standard)				3Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604619A - LANDMINE WARFARE

PROJECT
088

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, Wilmington, MA	51031	14511	1Q	10342	1Q	2558	1Q	0	78442	78442
b . Basic EMD	CPIF	Textron, Wilmington, MA	168381	0		0		0		0	168381	168381
Subtotal:			219412	14511		10342		2558		0	246823	246823

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	MIPR	ARDEC, Picatinny, NJ	24764	2860	1Q	2900	1Q	2800	1Q	0	33324	0
b . Engineering Support	MIPR	Other Government Agencies (misc)	5414	1254	1Q	1800	1Q	1958	1Q	0	10426	0
Subtotal:			30178	4114		4700		4758		0	43750	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604619A - LANDMINE WARFARE

088

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	MIPR	ATEC, Alexandria, VA	11734	145	1Q	3250	1-2Q	4097	1-3Q	0	19226	0
Subtotal:			11734	145		3250		4097		0	19226	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	In House	PM-MCD, Picatinny Arsenal NJ	5979	517	1Q	488	1Q	500	1Q	0	7484	0
Subtotal:			5979	517		488		500		0	7484	0

Project Total Cost:			267303	19287		18780		11913		0	317283	246823
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

COST (In Thousands)	FY 2001 Actual	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	3990	8354	9939	10962	11930	0	47474
659 FAMILY OF HVY TAC VEH	0	0	997	1492	0	0	0	0	4788
E49 HEMTT	0	0	2993	6862	9939	10962	11930	0	42686

A. Mission Description and Budget Item Justification: This program element aligns engineering and manufacturing development of Heavy Tactical Vehicles with Objective Force requirements to support combat and combat support missions. These missions include the following: line haul, local haul, and unit resupply. These trucks transport water, ammunition, and general cargo over all terrain and throughout the battle-space. FY 2003/FY 2004 Project 659 provides funds for the development of a Crew Protection Kit on the M915 Family of Vehicles. FY 2003 Project E49 provides funds for Block Modification to the Movement Tracking System (MTS) for improved performance. The MTS provides a multitude of Tactical Wheeled Vehicles with Global Positioning System (GPS) capability and two-way digital messaging. This project supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	0	0	0
Appropriated Value	0	0	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	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	0	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	3990
Current Budget Submit (FY 2003 PB)	0	0	3990

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604622A - Family of Heavy Tactical Vehicles

Funding - FY 2003: Increases of \$997K to support the M915 Line Haul Crew Protection Kit and \$2993K to support the Movement Tracking System Block Modifications.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604622A - Family of Heavy Tactical Vehicles	PROJECT 659
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COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
659 FAMILY OF HVY TAC VEH	0	0	997	1492	0	0	0	0	4788

A. Mission Description and Budget Item Justification: FY 2003 Project 659 provides funds for the development and test of the Crew Protection Kit for the M915 Family of Vehicles. This funding will be used to acquire engineering, vehicle prototypes, testing and test reports. Testing will include destructive testing. This project supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

Project not funded in FY 2001

FY 2002 Planned Program

Project not funded in FY 2002

FY 2003 Planned Program

- 747 Development of the engineering and prototype models of the M915 Crew Protection Kit
- 250 Conduct prototype testing on the M915 Crew Protection Kit

Total 997

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
659

<u>B. Other Program Funding Summary</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>
OPA 1 D15900, Truck, Tractor, Line Haul M915A2	51535	42963	43028	41312	16430	16786	17145	Continuing	Continuing

C. Acquisition Strategy: Limited RDTE effort with contract solicitation.

<u>D. Schedule Profile</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 System Development and Demonstration (SDD) contract for Crew Protection Kit			1Q				
Conduct testing on Crew Protection Kit			3Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604622A - Family of Heavy Tactical Vehicles

659

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 . Crew Protection Kit SDD Award	C-CPFF	TBD	0	0		0		600	1Q	0	600	0
b . Program Management	IN-HOUSE	TACOM, Warren, MI	1336	0		0		147	2-4Q	0	1483	0
Subtotal:			1336	0		0		747		0	2083	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)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604622A - Family of Heavy Tactical Vehicles

659

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 . Crew Protection Kit Testing	MIPR	APG, Aberdeen, MD	0	0		0		250	3Q	0	250	0
Subtotal:			0	0		0		250		0	250	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:			1336	0		0		997		0	2333	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604622A - Family of Heavy Tactical Vehicles				PROJECT E49	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
E49 HEMTT	0	0	2993	6862	9939	10962	11930	0	42686

A. Mission Description and Budget Item Justification: FY 2003 funds the development of a Block Modification on the Movement Tracking System (MTS). This Block Modification will increase the performance of the MTS. FY 2004 - FY 2007 funds the RDTE to support a competitive procurement of the Future Tactical Truck System (FTTS). This project supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

Project not funded in FY2001

FY 2002 Planned Program

Project not funded in FY2002

FY 2003 Planned Program

- 493 Selective Availability Anti-Spoofing Module interface development.
- 500 United States Army, Europe-Defense Transportation Recording And Control System interface development.
- 1000 Automated Identification Technology/Radio Frequency Identification Device interface development.
- 1000 Global Combat Support System-Army (Combat Service Support Control System/Force XXI Battle Command Battalion/Brigade and Below) interface development.

Total 2993

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604622A - Family of Heavy Tactical Vehicles	PROJECT E49
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<u>B. Other Program Funding Summary</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>
OPA1, DA0500, Family of Heavy Tactical Vehicle	206163	161503	242768	118510	98259	104774	217816	Continuing	Continuing

C. Acquisition Strategy: Deputy Chief of Staff for Programs (DCSPRO) is the process owner, and the Project Officer (PO) manages the MTS program. PO MTS is assigned to Program Executive Office, Standard Army Management Information Systems (PEO, STAMIS), who reports directly to the Army Acquisition Executive. Integrated Process Teams (IPT) are used to formally manage the acquisition process and for requirements definition. The Acquisition Program Baseline documents all cost, schedules, and technical performance criteria. Controls are in place to monitor the technical performance of matrix support organizations, including periodic reviews at all management levels. Reports are used to monitor program costs and schedules. Developmental, system qualification, and operational and evaluation testing is conducted. The Test & Evaluation Master Plan (TEMP) established management oversight over the testing program. MTS has developed a Risk Management Plan that identifies risk descriptions, their initiating events and appropriate mitigation/contingency strategies.

<u>D. Schedule Profile</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>
MTS interface development			3Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
E49

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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, Engineering, Testing, Program Management	C/CPIF	TBD	0	0		0		2993	3Q	0	2993	0
Subtotal:			0	0		0		2993		0	2993	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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604622A - Family of Heavy Tactical Vehicles

PROJECT
E49

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:			0	0		0		2993		0	2993	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604633A - AIR TRAFFIC CONTROL						PROJECT 586		
COST (In Thousands)	FY 2001 Actual	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	1159	2179	2339	2613	2705	2846	2844	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element (PE) funds continuous efforts in the development of modernized tactical and fixed base Air Traffic Control (ATC) systems that will significantly enhance aviation safety in both the tactical and strategic ATC domains. Funded in this program element is the development of the Mobile Tower System (MOTS). The MOTS is a tactical mobile tower designed to meet the deployability and communication requirements of the objective force. A Non-Developmental Item (NDI), MOTS will be equipped with modernized and secure avionics to ensure highly reliable and consistent tactical aircraft communications across all frequency bands and ranges to ensure compatibility with all Army, Joint, and Allied aircraft. MOTS will provide modern digital, secure, anti-jam communications, a digital recorder, basic weather information, a precision location capability, and full compatibility with all military and civilian airfields as well as tactical landing zones. The currently fielded systems, AN/TSW-7A and AN/TSQ-70A, are obsolete and require two one and a half ton vehicles, a 15Kw generator, and a support trailer to fully operate the system. The system is not deployable on any aircraft smaller than a C-5, does not meet communications requirements across the operational spectrum, and it is not maintainable because parts are no longer manufactured for the system. An integral part of the MOTS program is the Portable Airfield Lighting System (PALS). This program element includes funds for the trailer mounted PALS and the man-portable PALS. The trailer mounted PALS provides mobile aircraft lighting and all the necessary elements to establish a remote heliport/landing zone and a 10,000 foot runway. Currently, ATC units do not have an airfield lighting capability and only limited tactical lighting capabilities. PALS provides positive visual cues for runway alignment and rate of descent, allows for lower descent altitudes during precision approaches, and provides positive visual directions for Forward Area Rearming/Refueling Point (FARP) operations. The man-portable variant of PALS deploys with the Tactical Terminal Control System (TTCS), and provides lighting for tactical landing zones and position lights for four FARP points. PALS provides a significant force protection enhancement to the safety of Army, joint, and allied aircraft operations at all landing sites. The system will significantly enhance aviation safety for all aircraft operations, especially during night and inclement weather operations. Both MOTS and PALS are effective risk management tools. In addition to PALS integration, the TTCS retrofit includes the ARC-220 radio upgrade and conversion to electronic documentation. Additionally, this PE funds evaluation of the feasibility of alternatives for Tactical Airspace Integration System (TAIS) connectivity and interoperability with the National Airspace System (NAS) system for Homeland Security, and TAIS interoperability with Air Traffic Navigation, Integration and Coordination System (ATNAVICS) airspace command and control.

New efforts will include the initial design and development of a Combat Mission Simulator (CMS) to support the TAIS and ATNAVICS Systems. The CMS will significantly improve controller training and support operational currency requirements. Other efforts support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604633A - AIR TRAFFIC CONTROL

586

FY 2001 Accomplishments:

- 946 Completed all Concept and Technology Development Phase requirements and obtained approval from Milestone Decision Authority to proceed toward Milestone B and the System Development and Demonstration Phase (MOTS)
- 213 Designed, coordinated and executed two combined developmental/operational limited user tests to compare Air Force & Marine Corps versions of the Mobile Tower System (MOTS)

Total 1159

FY 2002 Planned Program

- 200 TTCS Retrofit/Testing
- 882 Develop MOTS Prototype
- 200 NAS Interface with TAIS
- 347 Concept Exploration for ATC Simulators/Trainers (ATNAVICS/TAIS)
- 550 TTCS/PALS Testing and Integration

Total 2179

FY 2003 Planned Program

- 525 Complete Developmental Testing with MOTS
- 600 Complete MOTS/PALS Testing and Integration
- 296 Complete NAS Interface with TAIS
- 918 Develop TAIS interface with ATNAVICS

Total 2339

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604633A - AIR TRAFFIC CONTROL

PROJECT
586

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	2008	2197	2292
Appropriated Value	2026	2197	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-18	0
b. SBIR / STTR	-51	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0
d. Below Threshold Reprogramming	-798	0	0
e. Rescissions	-18	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	47
Current Budget Submit (FY 2003 PB)	1159	2179	2339

<u>C. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
APA AA0050 - Air Traffic Control	73464	57892	64410	57964	57924	17820	52238	Continue	Continue

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604633A - AIR TRAFFIC CONTROL

PROJECT
586

D. Acquisition Strategy: Develop interfaces of ATC tactical equipment with National Air Space Systems (NAS) and explore new technology initiatives.

<u>E. Schedule Profile</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>
MOTS Concept and Development Stage	3Q						
Designed, coordinated and executed two combined development/operational limited user tests	3-4Q						
TTCS Retrofit/Testing		2Q					
Develop MOTS Prototype		3-4Q					
NAS Interface with TAIS System		2Q					
Concept Exploration for ATC Simulators/Trainers (ATNAVICS/TAIS)		1-3Q					
TTCS/PALS Testing & Integration		2-4Q					
Complete Developmental Testing with MOTS			1Q				
Complete MOTS/PALS Testing & Integration			1Q				
Complete NAS Interface with TAIS			2Q				
Develop TAIS Interface with ATNAVICS			2Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	CPFF	Raytheon, Boston, MA	26100	0		0		0		0	26100	26100
b . MOTS	TBD	TBD	2043	496	3Q	882	3-4Q	0		0	3421	0
c . ATNAVICS GFE	Reqn	Various	8	0		0		0		0	8	0
d . PALS	FFP	GALAXY LITEBEAMS, INC. EGG HARBOR TOWNSHIP, NJ; LASER GUIDANCE, INC. REDMOND, WA	2416	0		0		0		0	2416	0
e . NAS/TAIS INTERFACE	TBD	TBD	0	0		200	2Q	296	2Q	0	496	0
f . ATC SIMULATORS/TRAINERS	TBD	TBD	0	0		217	1-3Q	0		0	217	0
g . TAIS ATNAVICS INTERFACE	TBD	TBD	0	0		0		918	2Q	Continue	Continue	Continue
h . TTCS/PALS TESTING & iNTEGRATION	TBD	TBD	0	0		300	2-4Q	0		0	300	0
i . MOTS/PALS TESTING & iNTEGRATION	TBD	TBD	0	0		0		100	1Q	0	100	0
Subtotal:			30567	496		1599		1314		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	2688	0
b . MOTS	TBD	TBD	311	210	3Q	0		0		0	521	0
c . PALS	Various	Various	1613	0		0		0		0	1613	0
d . TTCS RETROFIT	TBD	TBD	0	0		125	2Q	0		0	125	0
e . ATC SIMULATORS	TBD	TBD	0	0		0		0		0	0	0
Subtotal:			4612	210		125		0		0	4947	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 . ATNAVICS	MIPR	TEXCOM, Ft Hood, TX / TECOM, APG, MD	1538	75	3Q	0		0		0	1613	0
b . MOTS	MIPR	AATD, FT EUSTIS, VA	0	213	3Q	0		525	1Q	0	738	0
c . TTCS TESTING	TBD	TBD	0	0		75	2Q	0		0	75	0
d . VIDS	MIPR	HUNTER AAF, GA	75	0		0		0		0	75	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604633A - AIR TRAFFIC CONTROL

PROJECT
586

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 . ATC SIMULATORS	TBD	TBD	0	0		0		0		0	0	0
f . TTCS/PALS TESTING & INTEGRATION	TBD	TBD	0	0		250	2-4Q	0		0	250	0
g . MOTS/PALS TESTING & INTEGRATION	TBD	TBD	0	0		0		500	1Q	0	500	0
Subtotal:			1613	288		325		1025		0	3251	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	1125	0
b . MOTS	CPFF	CAS, INC, HUNTSVILLE, AL	0	165	3Q	0		0		0	165	0
c . PALS	Various	Various	271	0		0		0		0	271	0
d . NAS/-TAIS INTERFACE	TBD	TBD	0	0		0		0		0	0	0
e . ATC SIMULATORS	TBD	TBD	0	0		130	1-3Q	0		0	130	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604633A - AIR TRAFFIC CONTROL

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
f. TAIS/ATNAVICS INTERFACE	TBD	TBD	0	0		0		0		0	0	0
Subtotal:			1396	165		130		0		0	1691	0
Project Total Cost:			38188	1159		2179		2339		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604641A - TACTICAL UNMANNED GROUND VEHICLE (TUGV)					PROJECT E47			
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
E47 TAC UNMANNED GND VEH	288	1490	0	0	0	0	0	0	9079	

A. Mission Description and Budget Item Justification: The Army has the lead for this joint service program. The development of a Tactical Unmanned Ground Vehicle (TUGV) is within the Family of Tactical Unmanned Vehicles (FTUV) within the OSD Joint Robotics Program. TUGV provides commanders the ability to see the battle space while at the same time reducing soldiers' exposure during dangerous reconnaissance, surveillance, target acquisition (RSTA) and Nuclear Biological and Chemical (NBC) detection missions. It also performs as a force multiplier, eliminates trickle-down combat information, reduces the "fog-of-war" and fills the brigade intelligence gap. Most importantly, the TUGV will provide brigade and battalion commanders necessary access to the correct level of combat intelligence. Unmanned systems, operating out front, provide a force multiplication capability where TUGVs report the nature of the terrain, find the enemy, locate obstacles, acquire targets, detect chemical vapors, and provide this information directly to those who need it the most -the battalion commander's battle staff. There will be at least two versions of the TUGV. A medium version, Tactical Unmanned Vehicle-Medium (TUV-M), will be developed for emerging requirements from the United States Marine Corps and U.S. Army Infantry Center for Scout/surveillance and engineer reconnaissance. Tactical Unmanned Vehicle-Light (TUV-L) will be a man-packable unit for intelligence collection and dissemination, and conducting remote/area/building reconnaissance. The platforms will include a minimum day/night audio/video, and accept a family of modular multi-sensor capabilities such as through-wall and countersniper sensors. Data will be produced in a format compatible with higher-level communications architecture. This PE supports the critical transition of Defense Advanced Research Project Agency (DARPA) and Army Research Laboratory (ARL) developed technologies to the Project Manager (PM) Unmanned Ground Vehicles/Systems so they can be assessed (maturity, supportability, operationally) during user appraisals, advanced concept technology demonstrations (ACTD) and, packaged and readied for incorporation into the TUV Engineering and Manufacturing Development (EMD) performance specifications. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Path (TCP).

FY 2001 Accomplishments:

- 288 Study integration of Haaglunds flail technology on U. S. inventory platform. Procure spares and training for existing platform. Complete Phase II for design, integration, and fabrication of Viking system.
- Total 288

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
**0604641A - TACTICAL UNMANNED GROUND
 VEHICLE (TUGV)**

PROJECT
E47

FY 2002 Planned Program

- 1490 The Viking system will be in testing at APG getting safety release prior to ACTD. Additional testing at Tyndall Air Force Base is scheduled next, then the system ships to Ft. A.P. Hill for user training for the ACTD. From there the system ships back to Redstone for system hardening for live fire testing and the ACTD. In Sep 02, the system ships back to A.P. Hill for the ACTD.

Total 1490

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	297	0	0
Appropriated Value	300	1500	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-10	0
b. SBIR/STTR	-9	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-3	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	0
Current Budget Submit (FY 2003 PB)	594	1490	0

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
**0604641A - TACTICAL UNMANNED GROUND
 VEHICLE (TUGV)**

PROJECT
E47

C. Other Program Funding Summary: Not Applicable

D. Acquisition Strategy: The Tactical Unmanned Ground Vehicle (TUGV) program includes a family of products including the Man-Portable Robotic System (MPRS), the Tactical Unmanned Vehicle-Medium (TUV-M), Gladiator, and Viking. The Evolutionary Acquisition Strategy employed for this program by the Unmanned Ground Vehicles/Systems Joint Project Office requires Horizontal Technology Integration of emerging sensors, lasers, and command and control data link technologies to most effectively use limited resources. The first generation TUGVs will minimize risk and neutralize threats by enabling soldiers and Marines to perform dangerous scout/Reconnaissance, Surveillance, and Target Acquisition, targeting and combat support missions from a safer location. Gladiator Concept Validation Models are under construction to validate requirements and develop tactics, techniques, and procedures for UGVs. TUV-M prototype systems will incorporate state-of-the-art sensors, actuation, communications, mission planning, and autonomous/semi-autonomous navigation technologies. The program utilizes a TUGV Integrated Product Team approach. The Gladiator and TUV-M products are expected to enter production in FY04 and FY05, respectively. The Engineering and Manufacturing Development phases will be funded using OSD PE 0604709D8Z funding. Viking acquisition will be accomplished through a two phased study, design, and fabricate program.

<u>E. Schedule Profile</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>
Viking System PDR	2Q						
Viking System Testing		2-3Q					
Viking System ACTD		4Q					

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604642A - LIGHT TACTICAL WHEELED VEHICLES

COST (In Thousands)	FY 2001 Actual	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	9171	2501	7877	5049	4109	2491	1690	0	39524
E40 LTV PROTOTYPE	6931	2501	7877	5049	4109	0	0	0	32823
E46 HMMWV RECAP	2240	0	0	0	0	0	0	0	2520
E57 LIGHT TACTICAL TRAILER	0	0	0	0	0	2491	1690	0	4181

A. Mission Description and Budget Item Justification: This Program Element supports all Light Tactical Wheeled Vehicles such as the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV), Hybrid Electric HMMWV, and the Light Tactical Vehicle Trailers. In FY 2003, this Program Element funds the RDT&E efforts for a Block Improvement Program through technology integration into the HMMWV and the Hybrid Electric HMMWV. This project supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	9802	2523	5896
Appropriated Value	9893	2523	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-22	0
b. SBIR / STTR	-291	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	-341	0	0
e. Rescissions	-90	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	1981
Current Budget Submit (FY 2003 PB)	9171	2501	7877

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604642A - LIGHT TACTICAL WHEELED VEHICLES

FY 2003 - Funding added to support HMMWV modernization development.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604642A - LIGHT TACTICAL WHEELED VEHICLES					PROJECT E40			
COST (In Thousands)	FY 2001 Actual	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	6931	2501	7877	5049	4109	0	0	0	32823	

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 2003 funds HMMWV modernization efforts 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 changes to environmental requirements for the engine. New commercial technology, combined with greater achievement of user requirements, will result in an improved HMMWV. Testing for the HMMWV Modernization Program will include improvements to the vehicle's 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. Joint Surveillance Target Attack Radar System (JSTARS), STRIKER, Theater High Altitude Area Defense (THAAD), SENTINEL, and Line-Of-Sight Anti-tank (LOSAT) Program Managers (PM) are potential users of the HE HMMWV. The HE HMMWV has been identified as an enabler to support Tactical Operation Center (TOC) transformation. HMMWV supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 6320 HMMWV Modernization Development Contract
- 111 Support Costs (Engineering/Quality/Matrix Support)
- 500 Test Planning - HMMWV Modernization

Total 6931

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604642A - LIGHT TACTICAL WHEELED
VEHICLES**

PROJECT

E40**FY 2002 Planned Program**

- 708 HMMWV Modernization Development Contract
- 450 Develop and begin assembly of up to five prototype vehicles - HMMWV Modernization
- 540 Support Costs (Engineering/Quality/Matrix Support)
- 803 HE HMMWV Development Test

Total 2501

FY 2003 Planned Program

- 800 HMMWV Modernization Development Contract
- 1200 Assemble and test up to ten prototype vehicles - HMMWV Modernization
- 4800 Competitive Contract Award for HE HMMWV
- 500 Test up to eight HE HMMWV's (part of Source Selection)
- 577 Support Costs (Engineering/Quality/Matrix Support)

Total 7877

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604642A - LIGHT TACTICAL WHEELED VEHICLES	PROJECT E40
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B. Other Program Funding Summary	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)	134582	148780	196783	204330	201387	291266	506830	Continuing	Continuing

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.

D. Schedule Profile	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Test & Evaluation - HMMWV Modernization			2Q				
Award Production Contract - HMMWV Modernization				1Q			
Award HE HMMWV Competitive Development Contract			3Q				
Competitive Run-off Testing - HE HMMWV for Source Selection			3Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604642A - LIGHT TACTICAL WHEELED VEHICLES

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	6320	2Q	708	3Q	800	2Q	0	13750	13750
b . Engineering Support - HMMWV Modernization	N/A	AMSAA, APG, MD	67	0		0		0		0	67	67
c . Engineering Support - HMMWV Modernization	N/A	WES, Vicksburg, MS	117	0		0		0		0	117	117
d . In-House Engineering (TACOM)	N/A	TACOM, Warren, MI	0	111	2-4Q	540	2-4Q	577	1-4Q	676	1904	1904
e . Competitive Development Contract - HE HMMWV	C/CPFF	TACOM, Warren, MI	0	0		0		4800	3Q	5500	10300	10300
Subtotal:			6106	6431		1248		6177		6176	26138	26138

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604642A - LIGHT TACTICAL WHEELED VEHICLES

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
			0	0		0		0		0	0	0
Subtotal:												

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	500	4Q	450	4Q	1200	1Q	0	2400	2400
b . Developmental Testing - HE HMMWV	N/A	ATC, Aberdeen, MD	0	0		803	3Q	0		0	803	803
c . Competitive Runoff Testing - HE HMMWV	N/A	ATC, Aberdeen, MD	0	0		0		500	2Q	2982	3482	3482
Subtotal:			250	500		1253		1700		2982	6685	6685

Remarks: Testing will include Reliability and Maintainability (RAM), environmental, transportability, and automotive testing.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604642A - LIGHT TACTICAL WHEELED VEHICLES

E40

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:												

Remarks: Not applicable

Project Total Cost:			6356	6931		2501		7877		9158	32823	32823
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

COST (In Thousands)	FY 2001 Actual	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	2115	0	59860	399887	771353	1786210	2033291	0	5059901
175 MOFA FSD	2115	0	0	0	0	0	0	0	9300
470 FUTURE COMBAT SYSTEM - EMD	0	0	59860	399887	771353	1786210	2033291	0	5050601

A. Mission Description and Budget Item Justification: This program element supports the Future Combat Systems (FCS) which is the centerpiece of the Army's strategy to achieve the Objective Force. FCS will demonstrate rapid unit deployment, capable of maximum lethality and survivability. FCS will feature easy recapitalization, embedded training, increased mobility, and drastically reduced supportability requirements. FCS is the networked system of systems that will serve as the core building block within all maneuver Unit of Action (UA) echelons to develop overmatching combat power, sustainability, agility, and versatility necessary for full spectrum military operations. This system supports the Objective transition path of the Transformation Campaign Plan(TCP).

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	2180	0	0
Appropriated Value	2200	0	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	0	0
b. SBIR/STTR	-65	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-20	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	59860
Current Budget Submit (FY 2003 PB)	2115	0	59860

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

FY03 funding increased due to FCS System Development and Demonstration (SDD) program acceleration.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604645A - Armored Systems Modernization (ASM)- Eng. Dev.						PROJECT 470		
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
470 FUTURE COMBAT SYSTEM - EMD	0	0	59860	399887	771353	1786210	2033291	0	5050601

A. Mission Description and Budget Item Justification: This project funds the System Development and Demonstration (SDD) of Future Combat Systems (FCS), a DARPA/Army collaborative program established by an MOA signed in February 2000. FCS is the centerpiece of the Army's strategy to achieve the Objective Force.

This project supports the detailed design, integration, and demonstration necessary to begin implementation of advanced architectures and to build prototypes, to include detailed architectures for Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR); software and hardware; and plans for logistics support, environmental issues, training, and prototype production (e.g. long lead items, processes). FCS is the networked system of systems that will serve as the core building block within all maneuver Unit of Action echelons to develop overmatching combat power, sustainability, agility, and versatility necessary for full spectrum military operations. It is comprised of a family of advanced, networked space-, air- and ground-based maneuver, maneuver support, and sustainment systems that may include manned and unmanned platforms. FCS further includes suite of information technologies, RSTA networks, and battle command systems that will enable the tactical unit to operate at a level of synchronization heretofore unachievable. The largest FCS systems will be lighter than current mechanized systems with each element possessing common or multi-functional characteristics. FCS units must achieve all organizational characteristics in the Army Vision. Many FCS platforms will be multifunctional and modular, combining two or more tactical functions such as assault and indirect fires, air defense, forms of RSTA, network communications, battle command and mobility support. Other platforms such as small, unmanned aerial and ground vehicle may be single function.

FCS will enable improved situational understanding to allow Objective Force units to see first, understand first, act first, and finish decisively. FCS is not a battalion. It is a networked system of systems manned by soldiers and fighting teams of teams. It enables the small tactical units in the Unit of Action (UA) to fight: (1) dismounted enabled by mounted; (2) mounted enabled by dismounted; (3) on occasion, dismounted; and, (4) on occasion, mounted. It significantly enhances the overall force effectiveness of UA beyond that achievable today. To satisfy the Army's urgent capability requirement and to keep up with the pace of technology, the FCS uses a block upgrade concept. Component and Technology Development and System Development and Demonstration for subsequent blocks of capability will be ongoing throughout system development and fielding.

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604645A - Armored Systems Modernization (ASM)-
Eng. Dev.**

PROJECT

470

FY 2001 Accomplishments:

SDD project not funded.

FY 2002 Planned Program

SDD project not funded.

FY 2003 Planned Program

- 26560 System Development and Demonstration (SDD) Lead System Integration (LSI) detailed architectures and detailed system design effort.
- 26400 Systems engineering modeling and simulation and software integration and application.
- 3100 Extension of the Integrated Data Environment (classified and unclassified), support for core, matrix and program support contractors, and other government agencies.
- 2300 Studies designed to support CAIV (Cost As An Independent Variable) decisions on material development approaches impacts on system of systems force effectiveness.
- 1500 Systems Engineering and Technical Assistance

Total 59860

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
**0604645A - Armored Systems Modernization (ASM)-
 Eng. Dev.**

PROJECT
470

<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PE 0602601A/HH7	7681	19475	0	0	0	0	0	0	27156
PE 0603005A/53G	0	110587	125147	116112	113194	0	0	0	465040

C. Acquisition Strategy: In September 2001, the Army Leadership synchronized the DARPA/Army efforts to focus on Initial Operational Capability in FY10. This refined direction targets MS B in FY03, transition of program leadership from DARPA to the Army, and initiation of the SDD phase at that time. The Army Leadership approved the Draft Mission Need Statement on 25 Oct 01 clearing the way for continued work in the Concept and Technology Development phase and clarifying requirements to be fulfilled by FCS during the SDD and production phase. In February 2002, DARPA will select one team as a lead systems integrator (LSI). The Acquisition Strategy will be presented to the MDA for approval prior to MS B.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Mission Needs Statement		1Q					
Milestone B			3Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604645A - Armored Systems Modernization (ASM)-Eng.

470

Dev.

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 . Detailed System Design	CPAF	TBD - Pending FY02 LSI Award	0	0		0		26560	3Q	0	26560	0
b . System Engineering Modeling and Simulaiton	CPAF	TBD - Pending FY02 LSI Award	0	0		0		26400	3Q	0	26400	0
Subtotal:			0	0		0		52960		0	52960	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)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604645A - Armored Systems Modernization (ASM)-Eng.

470

Dev.

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 . Experiments	FFP	TBD	0	0		0		800	3Q	0	800	0
Subtotal:			0	0		0		800		0	800	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 . Integrated Data Environment, Core Program Support and OGA's	Various	TBD	0	0		0		2300	3Q	0	2300	0
b . Studies	FFP	John Hopkins, Carnegie Mellon, IDA, MITRE, Sandia	0	0		0		2300	3Q	0	2300	0
c . SETA Contracts	FFP	Booze-Allen Hamilton, Camber, Warren SETA Support	0	0		0		1500	3Q	0	1500	0
Subtotal:			0	0		0		6100		0	6100	0

Project Total Cost:			0	0		0		59860		0	59860	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604649A - ENGINEER MOBILITY EQUIPMENT DEVELOPMENT

COST (In Thousands)	FY 2001 Actual	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	9202	8146	7109	0	0	0	0	24457
G29 ENGINEER VEHICLE UPGRADES	0	9202	8146	7109	0	0	0	0	24457

A. Mission Description and Budget Item Justification: The Engineer Vehicle Upgrades program supports the recapitalization of the M48/M60 based Armored Vehicle Launched Bridge (AVLB). This system supports the Legacy transition path of the Transformation Campaign Plan (TCP).

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	14862	9279	8166
Appropriated Value	15000	9279	
Adjustments to Appropriated Value			
a. Congressional General Reductions		-77	
b. SBIR / STTR	-442		
c. Omnibus or Other Above Threshold Reductions	-14420		
d. Reprogramming			
e. Rescissions	-138		
Adjustments to Budget Years Since FY2002 PB			-20
Current Budget Submit (FY 2003 PB)	0	9202	8146

Change Summary Explanation:

- FY 2001 Grizzly program funding was reprogrammed in the OMNIBUS to higher priority requirements.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604649A - ENGINEER MOBILITY EQUIPMENT DEVELOPMENT	PROJECT G29
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COST (In Thousands)	FY 2001 Actual	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	9202	8146	7109	0	0	0	0	24457

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. The Bridge is upgraded from Military Load Class (MLC) 60 to MLC 70 with complete repair of common parts. The 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. The AVLB recapitalization updates obsolete 1950's technology and eliminates associated supply and obsolescence issues.

The 36 year old AVLB, which has never had a major upgrade, must complement the Wolverine to meet the assault bridging requirement. 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.

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

FY 2001 Accomplishments:
 Project not funded

- FY 2002 Planned Program**
- 5100 Procure 3 prototype vehicles for testing.
 - 579 Program Management. PM staff and matrix support of development program.
 - 750 Tooling required to build prototype vehicles.
 - 1050 Technical Manual Development. Initiate TM development.
 - 1723 Technical Data Package Development and Documentation.
- Total 9202

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604649A - ENGINEER MOBILITY EQUIPMENT
DEVELOPMENT**

PROJECT

G29

FY 2003 Planned Program

- 1500 Application of Prototype Hardware to three vehicles.
- 2000 Testing. To procure test SSP (Supply Support Package) and support initial test requirements.
- 615 Program Management. PM Staff and Matrix support of Development Contract.
- 2351 Technical Manual Development. Continues TM development initiated in FY02.
- 1680 Technical Data Package Development. Continues TDP Development initiated in FY02.

Total 8146

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604649A - ENGINEER MOBILITY EQUIPMENT DEVELOPMENT	PROJECT G29
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<u>B. Other Program Funding Summary</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, GZ3050, AVLB SLEP	0	0	0	21641	57827	51040	79719	47400	257627

C. Acquisition Strategy: The recapitalized vehicle incorporates proven current technology components and is a low risk effort. The results of a market survey will determine either a competitive contract or sole source award. A single development contract will be awarded to complete and document design, integration, testing and logistics package with an option for production. A potential combined Developmental Test/Operational Test (DT/OT) will verify performance, durability and safety.

<u>D. Schedule Profile</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 Development Contract		2Q					
Start Combined DT/OT			4Q				
Complete Combined DT/OT				2Q			
Milestone III				3Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604649A - ENGINEER MOBILITY EQUIPMENT DEVELOPMENT

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 . Procure Prototype Hardware	TBD	TBD	0	0		5100	2Q	0		0	5100	0
b . Tooling	TBD	TBD	0	0		750	2Q	0		0	750	0
c . Technical Data Package Development	TBD	TBD	0	0		1723	2Q	1680	1Q	444	3847	0
d . Technical Manual Development	TBD	TBD	0	0		1050	2Q	2351	1Q	2649	6050	0
e . Application of Prototype Hardware	TBD	TBD	0	0		0		1500	1Q	0	1500	0
Subtotal:			0	0		8623		5531		3093	17247	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604649A - ENGINEER MOBILITY EQUIPMENT DEVELOPMENT

G29

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	2Q	191	1Q	195	566	0
Subtotal:			0	0		180		191		195	566	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 . DT/OT	TBD	TBD	0	0		0		2000	2Q	3383	5383	0
Subtotal:			0	0		0		2000		3383	5383	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604649A - ENGINEER MOBILITY EQUIPMENT
DEVELOPMENT**

G29

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	In House	TACOM, Warren, MI	0	0		399	2Q	424	1Q	477	1300	0
Subtotal:			0	0		399		424		477	1300	0
Project Total Cost:			0	0		9202		8146		7148	24496	0

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604710A - Night Vision Systems - Eng Dev

COST (In Thousands)	FY 2001 Actual	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	28722	27376	32328	21625	18904	18013	18336	Continuing	Continuing
L69 HTI 2D GEN FLIR ED	11839	3377	0	0	0	0	0	0	25800
L70 NIGHT VISION DEV ED	10674	16242	19637	18226	17671	18013	18336	Continuing	Continuing
L74 LRAS3	1434	790	0	0	0	0	0	0	38106
L75 PROFILER	4775	6107	6759	2213	0	0	0	0	22904
L76 LIGHTWEIGHT LASER DESIGNATOR RANGEFINDER UPGRADES	0	860	5932	1186	1233	0	0	0	9211

A. Mission Description and Budget Item Justification: 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. Not only will these devices have immediate impact on the Interim Brigade Combat Team (IBCT) and the Containment and Counter Attack forces, they are also candidates for use in the Objective Force. These projects are focused on improving the lethality, survivability, agility and sustainability of these forces over current equipment. 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 L69 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 L70 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 Rapid Acquisition for Transformation 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 L74 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. The current P3I effort supports 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 L75 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 Multiple Launched Rocket System (MLRS) and towed and self-propelled cannons.

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604710A - Night Vision Systems - Eng Dev

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 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. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY02PB)	33764	33984	24179
Appropriated Value	34074	27601	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-225	0
b. SBIR / STTR	-631	0	0
a. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	-4409	0	0
e. Rescissions	-312	0	0
Adjustments to Budget Years Since FY2002 PB	0		8149
Current Budget Submit (FY 2003 PB)	28722	27376	32328

Change Summary Explanation:

FY 2001: Congressional mark of \$1.5M in L70 for Eyesafe Laser, reprogrammed to 0602709A H95. \$2.909M reprogrammed from 0604710A L70; \$0.5M to PE 06033238 177; \$1.55M to PE 06054817 482; \$0.859M to PE 03057204 114

FY 2002: L69 \$13.674M was moved to 0203774A 508 to align with Apache FLIR program; L75 \$3.785M was moved from OPA2 K27900 to provide for continuation of the RDT&E program leading to FY 2003 production decision. Congress added \$3.4M to L69 for Avenger upgrade of first generation FLIR (belongs in L70). FY 2003: L69 \$6.633M was moved to 0203774A 508 to align with Apache FLIR program; L75 \$2.6M was moved from OPA2 K27900 to provide for continuation of the RDT&E program leading to FY 2003 production decision. \$5.0M was added to the L76 LLDR upgrades line from the FS BOS. \$4.001M was added to L75 from the FS BOS. \$2.942M was reprogrammed to L70 for Digital RSTA efforts.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604710A - Night Vision Systems - Eng Dev						PROJECT L70		
COST (In Thousands)	FY 2001 Actual	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	10674	16242	19637	18226	17671	18013	18336	Continuing	Continuing

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. This project is focusing on immediately improving the capability of the Counter Attack, Containment Forces, and Interim Brigade Combat Teams (IBCT), to systems supporting transitioning from the Objective Force. All of the devices are candidates, as sub systems, for the Objective Force. The NVG programs will develop enhancements and improvements to be incorporated into ground. The enhanced night vision goggle will be a head/helmet mounted night vision system for the individual soldier. The system will use both image intensifier and uncooled thermal technology to provide a multi-spectral image to the user. The Lightweight Laser Designator Rangefinder (LLDR) is a day/night man portable 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. The Thermal Weapons Sight (TWS) development establishes competition for an uncooled medium TWS for the Thermal Omnibus II procurement. Driver's Vision Enhancer (DVE) improvements focus on achieving a dual wavelength capability, leading to image fusion. The development of image fusion will significantly improve the soldier's ability to either navigate or acquire potential targets by merging the signal from two sensors into one image. The initial incorporation of this capability will be focused on DVE but will also be incorporated into unmanned and unattended ground sensors. To reduce life cycle cost, a common uncooled thermal engine will be developed for applications in weapon sights, drivers viewers, unmanned ground sensors, unmanned ground and air vehicles. The common thermal engine will be horizontally integrated into a multitude of platforms. This initiative will significantly improve performance and reliability while reducing cost. This project also provides for the systems demonstration and development of See Thru The Wall (STTW) sensors that will allow soldiers to detect personnel and large objects thru walls. This capability will significantly improve the force effectiveness and survivability of soldiers during Military Operations in Urban Terrain (MOUT). The Sensor Link Protocol is the architecture developed for interoperability of sensors on the digital battlefield. This will facilitate the transmission of existing sensor data for digital distribution within the Joint Technical Architecture-Army. Sensor link protocol 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. This project supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604710A - Night Vision Systems - Eng Dev

PROJECT

L70**FY 2001 Accomplishments:**

- 4276 Continued 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 Continued integration and technical tests of the sensor link protocol architecture, including implementing Digital RSTA results from the JCF AWE
- 2567 Completed LLDR EMD program and transition to production
- 397 Continued LLDR detail design of range enhancements for vehicle mounted requirements
- 2185 Initiated 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)

Total 10674

FY 2002 Planned Program

- 9370 Initiate development of next generation Image Intensifier systems (Enhanced Night Vision Goggles (ENVG) and Multi Function Laser)
- 3902 Complete Thermal Upgrade activities (prototype test and evaluation) to enhance combat effectiveness of TWS Medium
- 1693 Develop advanced capabilities for 2nd GEN FLIR B-kit, to include electronic stabilization for the B-kit, self healing focal plane arrays
- 1147 Continue multisensor upgrade activities, to include LRAS3, LLDR and Light Forward Observer Optics
- 130 Continue integration and technical tests of the sensor interface architecture into the Army C4I operating system

Total 16242

FY 2003 Planned Program

- 5138 Initiate development of "See Thru The Wall" sensor program.
- 4121 Initiate development of uncooled thermal B kit for unmanned platform sensors, navigation systems and target acquisition devices.
- 2714 Initiate development of image fusion sensors for navigation, surveillance and target acquisition.
- 3542 Conduct System Development and Demonstration (SDD) for Digital RSTA
- 3824 Complete multisensor upgrade activities, to include LRAS3, LLDR and Light Forward Observer Optics

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L70

FY 2003 Planned Program (Continued)

- 298 Establishment of Sensor Link Protocol (SLP) as an Army Standard under Variable Message Format (VMF) standards while maintaining configuration management and modifying application software tools.

Total 19637

<u>B. Other Program Funding Summary</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>
Night Vision AN/PVS-7 Aid K36400 OPA2	57839	35092	42866	48399	105075	125091	161612	Continuing	Continuing
Night Vision TWS K22900 OPA2	36015	36055	52071	51582	68985	80075	86568	Continuing	Continuing
Night Vision DVE K31300 OPA2	11458	1999	1935	8910	16100	40696	23564	Continuing	Continuing
Night Vision LLDR K31100 OPA2	7028	7005	8962	13558	9564	9751	37891	Continuing	Continuing
Night Vision LVRS K30800 OPA2	1188	1329	14318	14365	29629	29910	30406	Continuing	Continuing

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.

<u>D. Schedule Profile</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 Prototype Multifunction Eyesafe Tactical HTI Laser for Dismounted Application	1-4Q	2-4Q					
HTI Laser Demo on Dismounted Platform	2-3Q						
LLDR Technical Test	1Q						
LLDR IOT&E	3Q						
LLDR MS III Decision	4Q						
LLDR Vehicle Variant	1-4Q						
Enhanced NVG	1-4Q	1-4Q					
Sensor Architecture; digital RSTA development and test based on AWE results	1-4Q	1-4Q	1-4Q				

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L70

D. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Thermal Upgrade target location and display capability demonstration and evaluation for TWS	1-4Q	1-4Q					
Thermal Upgrade dual wavelength capability demonstration and evaluation and competition for DVE	1-4Q	1-4Q	1-4Q				
Field Artillery Sensor Upgrade Activities		1-4Q	1-4Q				
Conduct Digital RSTA SDD			1-4Q				
Uncooled Thermal Engine development		2-4Q	1-4Q	1-4Q			
Cost Effective Targeting System					1-4Q	1-4Q	1-4Q
Head Tracked Commanders' Sight					1-4Q	1-4Q	1-4Q
Warrior Extended Battle Space Sensors						1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

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	21831	21831
b . Various Prototypes and Studies	C/CPIF	Various	2947	0		0		0		0	2947	2947
c . LLDR Advanced Demonstration System	C/CP	Litton Laser, Apopka, FL	2556	0		0		0		0	2556	2556
d . LLDR RAPT	C/CP	Various	4253	0		0		0		0	4253	4253
e . LLDR EMD	C/CP	Litton Lasers, Apopka FL	18958	915		0		0		0	19873	19873
f . Sensor Architecture/Digital RSTA	C/CPIF & C/CP	Various	8012	1047	1Q	0		109	1-4Q	0	9168	9168
g . HTI Laser Trade Studies	C/CP	Various	1020	0		0		0		0	1020	1020
h . HTI Laser MFS3 design and prototype activities	C/CPIF	Raytheon, Dallas,TX	565	0		0		0		0	565	565
i . Modular HTI Multifunction Laser Activities	C/CP	Various	178	0		4463	2-4Q	0		0	4641	4641
j . AN/TMQ-41 Trade Studies and related activities	C/CP	Various	1232	0		0		0		0	1232	1232

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

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	1500	1500
l . Thermal Upgrades for TWS (target location)	C/CP, MIPR	Raytheon, El Segundo, CA, Various	705	3036	1Q	3309	1-2Q	0		0	7050	7050
m . Thermal Upgrades for DVE (Dual wavelength) and competition	C/CP	Kaiser Electric San Diego, CA, Various	1644	1964	1Q	0		2203	1-4Q	0	5811	5811
n . Image Fusion for DVE	C/CP	To Be Selected	0	1274	2Q	0		0		0	1274	1274
o . LLDR Vehicle applications	C/CP	Litton Laser, Apopka, FL Various	3000	362	1Q	0		0		0	3362	3362
p . Digital MELIOS Design & Fabrication	C/FP	Litton Lasers, Inc.	1000	0		0		0		0	1000	1000
q . Enhanced NVG Analysis & Design	C/CP	To Be Selected	1700	0		4321	2Q	0		Continue	Continue	Continue
r . Uncooled Thermal Engine	C/CP	To Be Selected	0	0		0		4040	1Q	Continue	Continue	Continue
s . FLIR develop / integrate	Various	To Be Selected	0	0		1769	2-4Q	0		0	1769	1769
t . Digital RSTA SDD	C/CP	To Be Selected	0	0		0		3182	1Q	0	3182	3182

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604710A - Night Vision Systems - Eng Dev

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
u . Sensor Thru The Wall development	C/CP	To Be Selected	0	0		0		4566	1-4Q	Continue	Continue	Continue
v . Multi Sensor Upgrades	Various	To Be Selected	0	0		560	2Q	3719	1Q	0	4279	4279
Subtotal:			71101	8598		14422		17819		Continue	Continue	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	477	1Q	886	1Q	876	1Q	Continue	Continue	Continue
Subtotal:			11888	477		886		876		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L70

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	1045	2Q	0		0		0	8769	8769
b . Other Test Support*	MIPR	Various	2882	256	2Q	500	2Q	500	2Q	Continue	Continue	Continue
Subtotal:			10606	1301		500		500		Continue	Continue	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	298	1Q	434	1Q	442	1Q	Continue	Continue	Continue
Subtotal:			3655	298		434		442		Continue	Continue	Continue

Project Total Cost:			97250	10674		16242		19637		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604710A - Night Vision Systems - Eng Dev					PROJECT L75			
COST (In Thousands)		FY 2001 Actual	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		4775	6107	6759	2213	0	0	0	0	22904

A. Mission Description and Budget Item Justification: Profiler is an enhancement 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 System Development and Demonstration (SDD) 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 SDD systems will be delivered and tested. Profiler will replace the legacy force MMS systems in order to transition to the objective force. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 4704 Continued MMS-P SDD development effort, provided Government Furnished Equipment (GFE) - 4 KG-144s, and conducted Preliminary Design Review.

- 6 Conducted meteorology data gathering to support accuracy requirements.
- 65 Prepared for developmental testing and operational testing.

Total 4775

FY 2002 Planned Program

- 3340 Continue MMS-P SDD development effort, including Critical Design Review, fabrication and 4 units for contractor testing and Development Test (DT).

- 1947 Program Management/Engineering Support.
- 640 Conduct independent Government DT for system meteorological accuracy.
- 180 Conduct ballistics and meteorology simulations to support accuracy requirements.

Total 6107

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604710A - Night Vision Systems - Eng Dev

PROJECT

L75**FY 2003 Planned Program**

- 1058 Complete MMS-P SDD effort, including refurbishment/acceptance of 4 SDD Systems.
- 3225 Evaluate alternative technologies to reduce reliance on balloon-borne radiosondes, improve accuracy, provide better/more data input to the Mesoscale Model, and provide broadband datalink capabilities.
- 1000 Conduct Operational Testing (OT) activities.
- 1476 Program Management/Engineering Support.

Total 6759

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L75

<u>B. Other Program Funding Summary</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 *	10674	16242	19637	18226	17671	18013	18336	Continuing	Continuing
Profiler K27900 OPA2	0	0	4875	14695	17610	17963	18410	Continuing	Continuing

* 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 was awarded competitively. The SDD 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).

<u>D. Schedule Profile</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>
System Design & Fabrication	1-4Q	1-2Q					
Conduct Development Test / Customer Test		4Q	1Q				
MS C LRIP Decision			2Q				
Exercise Production Option			2Q				
Conduct Operational Test			3Q				
Full Rate Production (FRP) Decision			4Q				
Exercise Remaining Production Options				1Q			
First Unit Equipped (FUE)				3Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604710A - Night Vision Systems - Eng Dev

L75

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	3706	1Q	3340	1-3Q	1058	1Q	0	10194	10194
b . Studies and Simulations	MIPR	ARL	162	6	3Q	180	2-3Q	3225	1Q	1340	4913	4913
c . GFE	MIPR	HQCPSQ/ZJ, San Antonio, TX	0	120	3Q	0		0		0	120	120
Subtotal:			2252	3832		3520		4283		1340	15227	15227

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	395	1-4Q	614	1-3Q	566	1Q	288	2623	2623
b . Support Contractors	PWD	Various	0	360	2-4Q	547	1-3Q	363	1-3Q	0	1270	1270
c . OGA	MIPR	Various	0	84	1-4Q	571	1-3Q	332	1-3Q	0	987	987
Subtotal:			760	839		1732		1261		288	4880	4880

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L75

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, Various	0	65	2Q	50	2Q	0		0	115	115
b . Developmental Testing	MIPR	ATEC, Various	0	0		590	2-4Q	0		0	590	590
c . Operational Testing	MIPR	ATEC, Various	0	0		0		1000	3Q	500	1500	1500
Subtotal:			0	65		640		1000		500	2205	2205

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	37	1-4Q	215	1-4Q	215	1-4Q	85	590	590
b . GBL	MEMO	TACOM, Rock Island, IL	0	2	3Q	0		0		0	2	2
Subtotal:			38	39		215		215		85	592	592

Project Total Cost:			3050	4775		6107		6759		2213	22904	22904
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604710A - Night Vision Systems - Eng Dev						PROJECT L76	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L76 LIGHTWEIGHT LASER DESIGNATOR RANGEFINDER UPGRADES	0	860	5932	1186	1233	0	0	0	9211

A. Mission Description and Budget Item Justification: The original Lightweight Laser Designator Rangefinder (LLDR) system was specifically designed to meet requirements which emphasized a lightweight system for man portable operations. The LLDR system is also being used in a mounted role on the Army's Striker vehicle, as well as being mounted on the Fire Support Vehicle deployed with the Brigade Combat Team. The vehicle-mounted applications have range requirements which exceed the capabilities of the current LLDR system.

The system will also be used as an Objective Force sensor. The LLDR Upgrade effort is a Block Upgrade that will increase recognition ranges to meet the 5 kilometer requirement with a minimal impact on overall system size, weight and production cost. Upgrade activities will focus on a redesign of the thermal and day optics assembly to extend range recognition, a redesign of the system controller to improve image quality, improve performance in degraded visibility environments (e.g., battlefield smokes), redesign the housing to accommodate larger optics, replace the current Global Positioning System chip with a more robust chip, and replace obsolete components. Many of these upgrades are required for both dismounted and mounted LLDR systems. This system supports the Objective transition path of the Transformation Campaign Plan (TCP).

FY 2002 Planned Program

- 787 Initiate upgrade effort design to extend target recognition range
 - 28 Conduct modeling to support system upgrades
 - 45 Prepare and conduct design reviews
- Total 860

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L76

FY 2003 Planned Program

- 525 Complete design to extend target recognition range
- 5252 Fabricate prototypes to include upgrades to optics, electronics, and housing (four test set units)
- 155 Planning and preparation for qualification and government tests

Total 5932

<u>B. Other Program Funding Summary</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>
LLDR K31100 OPA2	7028	7005	8962	13558	9564	9751	37891	Continuing	Continuing

C. Acquisition Strategy: The LLDR upgrade development contract will be awarded to Northrop Grumman Litton Laser Systems on a sole source basis. This contractor was competitively selected for the system's development effort. The Upgrade development effort contract type is Cost Plus Incentive Fee (CPIF). This effort is not considered a new start, as it expands the required performance of an existing, previously developed system.

<u>D. Schedule Profile</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>
Prepare Contract Documentation/Issue RFP		3Q					
Award Upgrade Contract		3-4Q					
Upgrade Design Activities		3-4Q	1-2Q				
Upgrade Prototype Fabrication Activities			2-4Q				
Upgrade Qualification Testing				1-2Q			
Limited User Test				3Q			
Production cut-in					1Q		

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L76

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 . SDD Contract	CPIF	Northrup Grumman Litton Lasers, Apopka, FL	0	0		812	3Q	5532	1Q	1238	7582	7603
b . Modeling	MIPR	NVESD, CECOM	0	0		13	1Q	0		0	13	13
Subtotal:			0	0		825		5532		1238	7595	7616

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	NVESD, CECOM, Other	0	0		0		250	1Q	375	625	625
Subtotal:			0	0		0		250		375	625	625

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L76

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	0		0		75	3Q	75	150	150
b . Government User Test	MIPR	ATEC	0	0		0		0		675	675	675
Subtotal:			0	0		0		75		750	825	825

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		0	0		35	1Q	75	1Q	73	183	183
Subtotal:			0	0		35		75		73	183	183

Project Total Cost:			0	0		860		5932		2436	9228	9249
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

COST (In Thousands)	FY 2001 Actual	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	88705	90244	94474	65466	56310	50554	45970	0	615471
548 MIL SUBSISTENCE SYS	1694	1846	1941	2051	2051	2078	2077	0	16510
667 LAND WARRIOR	59496	61241	60334	27692	18274	15256	10600	0	335719
668 SOLDIER ENHANCE PGM	13762	13992	14181	16455	16374	16597	16563	0	132500
C40 SOLDIER SUPPORT EQUIPMENT - ED	8636	8643	13367	14059	14418	11145	11159	0	87457
L40 CLOTHING & EQUIPMENT	5117	4522	4651	5209	5193	5478	5571	0	43285

A. Mission Description and Budget Item Justification: This program element supports Engineering and Manufacturing Development (EMD) and Non-Developmental Item (NDI) evaluation of unit/organizational equipment, clothing and individual equipment, field shelters, field service equipment, subsistence, and food service equipment that will enhance soldier efficiency, effectiveness, lethality, sustainability and survivability in accordance with Army Transformation Campaign Plan (TCP) objectives. This program element supports the system integration of demonstrated subsystems, components, or NDI in order to reduce integration risks associated with engineering and manufacturing development of various commodities, components, and technologies. This program element also supports demonstration of engineered development models and the associated developmental and operational testing of systems, components, and commodities prior to their transition to the Production and Deployment phase. The Soldier Support Equipment program supports the engineering and manufacturing development of a new generation of field service support items. The Land Warrior program will produce the first fully integrated fighting system for dismounted combat soldiers. The Soldier Enhancement program supports soldier items that will transition to production in three years or less.

Supports the Legacy-to-Objective transition path of the Army's Transformation Campaign Plan.

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	88502	91002	73763
Appropriated Value	89321	91002	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-758	0
b. SBIR / STTR	-713	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	915	0	0
e. Rescissions	-818	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	20711
Current Budget Submit (FY 2003 PB)	88705	90244	94474

FY03 program includes an increase of \$19.2M (Proj 667) due to a program restructure and Army support to the Land Warrior program.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604713A - Combat Feeding, Clothing, and Equipment				PROJECT 548	
COST (In Thousands)	FY 2001 Actual	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	1694	1846	1941	2051	2051	2078	2077	0	16510

A. Mission Description and Budget Item Justification: This project supports the engineering and manufacturing development and Non-developmental Item (NDI) evaluation of combat feeding equipment to enhance soldier efficiency and survivability, and to reduce food service logistics requirements for all four services. The project supports multi-fuel, rapidly deployable field food service equipment initiatives and engineering and manufacturing development to improve equipment through enhanced safety in food service, and decreased fuel and water requirements.

This project develops critical enablers that support the Legacy-to-Objective transition path of the Army's Transformation Campaign.

FY 2001 Accomplishments:

- 336 Integrated field kitchen equipment efficiency upgrades and conducted Technical and Operational Evaluations.
- 147 Completed Developmental and Operational testing of Advanced Food Sanitation Center, conducted Milestone C and transitioned into Production and Deployment.
- 268 Completed fabrication and technical testing of Temporary Lightweight Kitchen and successfully demonstrated to the Air Force.
- 252 Completed development and initiated testing of noise level and reduced firing rate changes for the field kitchen burner. Designed a cold weather kit to allow operation in cold environments.
- 192 Completed modifications and conducted in-house evaluations of the improved Tray Ration Heater System, demonstrating enhanced operational capability, and 40% cost reduction.
- 132 Performed in-house and user evaluations of improved sanitation methods for mess kits and provided findings to the AF.
- 367 Conducted Milestone B and awarded development contract for design and fabrication of Advanced Design Refrigerator with enhanced transportability and improved thermal efficiency.

Total 1694

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604713A - Combat Feeding, Clothing, and Equipment

548

FY 2002 Planned Program

- 450 Design/Evaluate new food service equipment for Navy 21 (Surface, Subs), transition to Navy, initiate development of model for equipment selection for retrofit and integration into new ship designs.
- 250 Conduct user testing and complete Technical Data Package (TDP) for Temporary Lightweight Kitchen, Transition to Air Force.
- 357 Complete fabrication of Advanced Design Refrigerator and conduct Developmental Testing.
- 61 Complete TDP for Field Kitchen Efficiency Upgrades 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.
- 231 Complete development and testing of Modern Burner Unit (MBU) Cold Weather Kit. Transition changes for noise reduction and heat output into kitchen burner production. Initiate development of Thermostatic Control Kit and conduct a reliability study for the MBU.
- 322 Fabricate prototype Kitchen ISO Container that is compatible with the Army Load Handling System without the need for additional material handling equipment.

Total 1846

FY 2003 Planned Program

- 274 Conduct Technical and Operational Testing of thermostatically controlled MBU, and incorporate Cold Weather Kit and thermostatic control into the burner production contract.
- 255 Conduct Technical and Operational Testing of prototype kitchen ISO container that is compatible with the Army Load Handling System without the need for additional material handling equipment.
- 223 Conduct equipment evaluation for optimizing the future Mobile Kitchen Trailer configuration and develop technical data for use in a rebuild program.
- 350 Conduct Operational Test of Advanced Design Refrigerator and conduct Milestone C.
- 237 Complete Modifications and Prepare Technical Data Package for upgraded Tray Ration Heater System and deliver prototype system to the Marine Corps.
- 602 Design/Evaluate new food service equipment for Navy 21 (Surface,Subs), transition to Navy, complete model for equipment selection for retrofit and integration into new ship designs.

Total 1941

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604713A - Combat Feeding, Clothing, and Equipment	PROJECT 548
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<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, 0603747.610, Food Adv Dev	3292	3706	3907	4079	4089	4219	4228	Continuing	Continuing
OPA3, M65803, Kitchen, Containerized, Field	6077	4250	11158	7449	7203	0	0	0	43169
OPA 3, M65802, Sanitation Center, Field Feeding	4323	2771	8954	8928	8986	8079	8980	Continuing	Continuing
OPA3, M65801, Refrigerated Containers	1466	1066	0	0	0	0	0	0	3459

C. Acquisition Strategy: Complete engineering and manufacturing development of food items and equipment for transition to procurement.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Design and test concepts for improved Mess Kit Sanitation	4Q						
Design and Evaluate US Air Force Temporary Lightweight Kitchen	4Q						
Conduct Milestone B and award Developmental Contract for the Advanced Design Refrigerator	3Q						
Conduct Technical and Operational Evaluations on Field Kitchen Equipment Efficiency Upgrades	3Q						
Complete design and fabrication of Advanced Design Refrigerator - 1200		3Q					
Conduct Technical and Operational Testing on prototype kitchen ISO container			3Q				
Conduct Developmental Testing for the Advanced Design Refrigerator - 1200		4Q					
Transition noise reduction and heat output changes to MBU production		4Q					
Complete TDP on the Advanced Design Refrigerator - 1200 (Milestone C)			4Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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 . SBCCOM	In-House	SBCCOM	8347	185		907		925		Continue	Continue	Continue
b . Various	Various	Various	1004	930		144		254		Continue	Continue	Continue
Subtotal:			9351	1115		1051		1179		Continue	Continue	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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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		575		Continue	Continue	Continue
Subtotal:			2471	491		530		575		Continue	Continue	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	SBCCOM	600	88		265		187		Continue	Continue	Continue
Subtotal:			600	88		265		187		Continue	Continue	Continue

Project Total Cost:			12422	1694		1846		1941		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604713A - Combat Feeding, Clothing, and Equipment	PROJECT 667
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COST (In Thousands)	FY 2001 Actual	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	59496	61241	60334	27692	18274	15256	10600	0	335719

A. Mission Description and Budget Item Justification: Land Warrior (LW) establishes the Infantry soldier as the Army's 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 Army Special Operations Forces (ASOF) in the close and personal fight. Land Warrior provides enhanced capabilities to the dismounted soldier and is the genesis of the Objective Force Warrior (OFW). LW development takes maximum advantage of Commercial-Off-The-Shelf (COTS), as well as Government-Off-The-Shelf (GOTS) components and technologies, along with a rapid prototyping process. The LW program minimizes the use of LW -unique hardware and software and has an open systems architecture. This architectural approach provides greater flexibility to incorporate technology upgrades as they become available, reduces intellectual and proprietary rights, and reduces developmental and ownership costs. LW provides the foundation system upon which Mounted Warrior, Air Warrior, 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 and LW is critical to transformation of the Soldier.

This program supports the Legacy-to-Objective transition path of the Army's Transformation Campaign Plan and is the genesis for the Objective Force Warrior (OFW).

FY 2001 Accomplishments:

- 47222 Incorporated lessons learned from operational experiments conducted during the Joint Contingency Forces Advanced Warfighting Exercises (JCFAWE) into system design to add and improve system functionality and performance in the areas of weight reduction, more flexible design and improved integration into MOLLE to meet threshold requirements of the ORD. Conducted critical design review and initiated contractor testing for V1.0 prototypes to validate system functionality prior to development test. Conducted risk mitigation efforts to improve hardware and software integration and functionality. Fabricated six LW V1.0 prototypes for evaluation during fightability assessments, and for software development. Provided contractor logistics support of hardware and software during fightability assessments.
- 1238 Prepared test documentation and technical test plan, conducted user fightability assessments, and improved hardware and software design to improve functionality and increase soldier acceptance. Conducted technical test readiness reviews. Began development of training package and manuals for DT and began transitioning into electronic format. Began development of interactive training scenarios and evaluated integrated training environment.

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604713A - Combat Feeding, Clothing, and Equipment

667

FY 2001 Accomplishments: (Continued)

- 4927 Conducted LW demonstrations to higher headquarters and other countries to demonstrate system capability and functionality. Supported NATO Land Group 3 and other partnered countries to ensure compatibility with potential multinational military operations.
- 6109 Continued program management and systems engineering support from other government agencies for overall program efforts. Conducted 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.

Total 59496

FY 2002 Planned Program

- 42599 Fabricate remaining LW V1.0 systems that will be used for development testing (26) and operational testing (170). Conduct contractor acceptance testing to validate system functionality and integration prior to testing. Provide contractor logistics support of hardware and software on test units during early operational exercise (EOE)/DT.
- 5381 Complete contractor testing prior to EOE/DT. Conduct airborne certification, user fightability assessment #4, and obtain necessary safety releases. Complete development of training program of instruction, lesson plans, and computer based training (CBT)/interactive multimedia instruction (IMI). Develop range, targetry, and marksmanship tasks and training, tactics and procedures (TTP). Update and transition training package and manuals to electronic format. Complete development of interactive training scenarios and evaluate integrated training environment. Conduct EOE to measure reliability and performance during DT and complete test reports. Conduct tactics training, operators/leaders training, and direct support maintenance training prior to OT.
- 5560 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.
- 7701 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.

Total 61241

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604713A - Combat Feeding, Clothing, and Equipment

PROJECT

667**FY 2003 Planned Program**

- 34565 Incorporate IOTE software and hardware fixes into V1.0. Begin Block IIA development which addresses LW to Battle CT integration to meet KPP for Army Battle Command System (ABCS) interoperability with Light Digital Tactical Operations Center (TOC) and to provide on-board power recharging capability in interim force vehicle for LW equipped soldiers. Will also begin development and application of Training Aids Devices Simulation System (TADSS) to meet VCSA guidance.
- 10740 Conduct operational test readiness reviews (OTRR). Finalize training materials and training package. Conduct IOTE and provide Contractor Logistics Support (CLS) during DT/IOTE. Conduct government system assessment of operational test results.
- 6219 Initiate procurement planning efforts for follow on full rate production full/open LW competition contract. Begin Source Selection Evaluation Board (SSEB) process for production contract award. Conduct technical and program reviews for In Process Review (IPR) or Army System Acquisition Review Council (ASARC) reporting/briefings in preparation for Milestone III decision. Continue operation of PM Soldier System - Fort Monmouth and PM Soldier LW Forward at Fort Bragg. Continue LW demonstrations to 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.
- 8810 Program management and systems engineering support from other government agencies for overall program efforts.

Total 60334

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
667

<u>B. Other Program Funding Summary</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.J50, Future Warrior Technology Integration	6099	36635	35913	62865	51329	64979	61313	Continuing	Continuing
OPA3, M80500, Land Warrior	0	0	0	97621	112208	138273	143498	Continuing	Continuing
RDTE, 0603747.669 Clothing and Equipment	3360	4788	4881	5533	5258	5529	5918	Continuing	Continuing
RDTE, 0604713.L40 Clothing and Equipment	5117	4522	4651	5209	5193	5478	5571	Continuing	Continuing

C. Acquisition Strategy: The 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 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 Agreement as the procurement vehicle to increase the level of commercial company involvement and will maximize the rapid prototyping process. 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 48,801 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. This program supports the Legacy-to-Objective transition path of the Army's Transformation Campaign Plan and is the genesis for the Objective Force Warrior (OFW).

<u>D. Schedule Profile</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 Developmental Contract/Follow On Options	3Q	1-2Q	1Q				
Conduct LW IPRs	1-4Q	1-4Q					
Conduct LW Preliminary Design Review (PDR) and Critical Design Review (CDR)	2Q						
Deliver prototypes software integration (FY01) and safety testing (FY02)	4Q	2Q					
Conduct Safety Testing and obtain safety release		2Q					
Deliver DT prototypes	4Q	2Q					
Conduct EOE/DT and Report		3-4Q					

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
667

D. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Deliver IOTE prototypes			1Q				
Conduct IOTE Safety release and training			1-2Q				
Conduct Initial Operational Test and Evaluation (IOTE)			2-3Q				
Milestone C/III				1Q			
Production Contract Award/Subsequent Options				2Q	1Q	1Q	1Q
First Unit Equipped (FUE)				4Q			
LW Block IIA/B Development/Integration/Test			2-3Q	1-4Q	1-4Q	1-4Q	
Production Contract Award and Options (Block II)					2Q	1Q	1Q
LW Block III Development							1-4Q
Initial Operational Capability (IOC)*					4Q		

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604713A - Combat Feeding, Clothing, and Equipment

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 . Risk Mitigation Efforts - CBT/IMI	Task Order	Computer Sciences Corp (CSC) Eatontown, NJ	35533	2662	3Q	650	1Q	550	1Q	0	39395	0
b . Other Transactions Agreement (OTA)	FFP	OTA Consortium, Vienna, VA	0	41254	1Q	39600	1Q	13829	1Q	Continue	Continue	Continue
c . Global Positioning Systems Cards/Antennas		ARINC, Annapolis, MD	0	717	3Q	132	1Q	0		0	849	0
d . Develop Block IIA Reqmts (M&S, BCT interconn, TADSS etc.)	TBD	TBD	0	0		0		10137	2Q	0	10137	0
e . Ruggedized Batteries/Rechargers (CMR/Others TBD)	Time & Materials	CMR Technologies, Island Heights, NJ	0	1581		1085	1-2Q	3121		0	5787	0
f . Raytheon Systems	CPAF	Raytheon, El Segundo, CA	122348	0		0		0		0	122348	0
g . GFE - Multifunction Laser/Thermal Weapon Sights, etc.	MIPR	PM Night Vision, Fort Belvoir, VA	0	544		520		6350		0	7414	0
h . ORACLE	FFP	DLT Solutions, Herndon, VA	0	286	2Q	289	2Q	293	2Q	0	868	0
i . Multiband Inter/Intra Team Radio (MBITR)/Radios	Task Order	Racal Communications, Inc., Rockville, MD	0	178	2Q	38		0		0	216	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604713A - Combat Feeding, Clothing, and Equipment

667

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 . Security DAA SME/Accreditation	GSA/Other		0	0		285		285		0	570	0
Subtotal:			157881	47222		42599		34565		Continue	Continue	Continue

Remarks: Award dates covering multiple quarters reflect multiple awards.

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 Matrix Support	MIPR	CECOM, Ft. Monmouth, NJ	8274	1898		1920		2020		0	14112	0
b . TSM -Soldier support to the program	MIPR	TSM Soldier, Fort Benning, GA	1225	200		200		200		0	1825	0
c . Modern Tech Inc. - support contractors	Task Order	Modern Tech Inc., Springfield, VA	8675	749	1Q	688	1Q	1030	1Q	0	11142	0
d . System Engineering support (IV&V/Security/SEPM)	GSA Contracts	US Military Academy, West Point, NY	360	573	1Q	742	1Q	817	1Q	0	2492	0
e . PM Soldier Electronics in house support	In house	PM Soldier Systems, Ft Belvoir, VA	10255	491		1128		1292		0	13166	0
f . Physical Integration Team - LW integration support	MIPR	SBCCOM - Natick, MA	0	282		301		300		0	883	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604713A - Combat Feeding, Clothing, and Equipment

667

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
g . CECOM NVESD, Belvoir, VA Matrix Support	MIPR	CECOM NVESD, Fort Belvoir, VA	0	559		371		500		0	1430	0
h . Various Government Agencies			0	175		210		60		0	445	0
Subtotal:			28789	4927		5560		6219		0	45495	0

Remarks: Buys government and contract engineering and logistical support for overall program support.

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 Organizations - Developmental testing	MIPR	ATC, WSMR, EPG, etc.	3948	233		2400		600		Continue	Continue	Continue
b . Testing Organizations - Operational testing	MIPR	OEC, ATEC	5995	238		2635		10080		Continue	Continue	Continue
c . Test Equip/Support	Various	Various	3749	411		128		60		Continue	Continue	Continue
d . MOLLE Integration (Natick, MA)	MIPR	ARI, Ft Benning, GA	445	201		0		0		0	646	0
e . Airworthiness/Airborne Certification/Safety testing	Various		0	155		138		0		0	293	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
667

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 . MAIS Integration/Halo	SBCCOM		0	0		80		0		0	80	0
Subtotal:			14137	1238		5381		10740		Continue	Continue	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 Soldier/PEO oversight of LW program	In-House	PM Soldier Systems, Fort Belvoir, VA	7888	2332		4736		5140		0	20096	0
b . Wexford Group - Management Support	Task Order	Wexford Group, Vienna, VA	1080	738	1Q	790	1Q	1000	1Q	0	3608	0
c . CYIOS, Inc., LAN Spt	Task Order	CYIOS, Washington, DC	825	400	1Q	0		0		0	1225	0
d . ACS, Financial Database support	Task Order	ACS, Arlington, VA	60	196	1-2Q	100	1-2Q	500	1Q	0	856	0
e . BRTRC - Support Contractors	Task Order	BRTRC, Fairfax, VA	165	304	1-2Q	370	1-2Q	370	2-3Q	0	1209	0
f . SBCCOM Spt	MIPR	SBCCOM-Natick, MA/APG, MD	1160	839		505		500		0	3004	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604713A - Combat Feeding, Clothing, and Equipment

667

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
g . SY-Tech	Task Order	Sherman Oaks, CA	694	1200	1Q	1100	1Q	1200	1Q	0	4194	0
h . Dynetics	Task Order	Huntsville, AL	140	100	1Q	100	1Q	100	1Q	0	440	0
Subtotal:			12012	6109		7701		8810		0	34632	0

Remarks: Award dates covering multiple quarters reflect multiple awards.

Project Total Cost:			212819	59496		61241		60334		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604713A - Combat Feeding, Clothing, and Equipment	PROJECT 668
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COST (In Thousands)	FY 2001 Actual	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	13762	13992	14181	16455	16374	16597	16563	0	132500

A. Mission Description and Budget Item Justification: This project supports accelerated integration, modernization, and enhancement efforts of lighter, more lethal weapons and improved Soldier items including lighter, more comfortable load-bearing equipment, field gear, survivability items, communications equipment, and navigational aids. Soldiers are managed in three categories: dismounted Soldiers, combat crews (air and ground), and other Soldiers. Projects generally are completed in three years or less.

This program supports the Legacy-to-Objective and Legacy-to-Interim transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 2261 Completed evaluation/type classify/transition to production: 12 Gauge Breaching Round, Sniper Accessory Kit, Backup Iron Sight for Modular Weapon System, IR Laser Pattern Generation Pointer, Micro Rappel System, and Improved Cold Weather Mask.
- 4618 Continued evaluation/procurement of prototypes and testing of: Joint Service Shotgun, M240B Combat Ammunition Pack, 5.56 Non-Lethal Muzzle Launched Ordnance, Parachutist Drop Bag, Collapsible Grappling Hook, 12 Gauge Penetrating/Irritating Cartridge, Tactical Assault Ladder System, Multiple Utility Digging System, Tactical Search Mirrors, Concealable Stab Protective Body Armor, POL Handlers Glove System, Boot Gaiters, Camouflage Uniform System for Soldiers, Family of Batons/Night Sticks, Protective Glove System, Survival Egress Air (SEA) MK2.0 Device, Face Paint (Compact), and Improved Combat Shelter.
- 3273 Initiated market surveys and/or evaluations: Close Combat Mission Capability Kit, M84 Reloadable Fuze, Integrated Laser White Light Pointer, Individual Riot Control Agent Disperser, 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 Continue In-house engineering support services, computer services, conducted technical and program reviews.
- 265 Program Terminated: Lightweight Fragmentation Hand Grenade - Not capable of meeting operational requirements. Small Unit Multi-Purpose Trailer - re-directed. Double Hearing Protection and Communication Capability - requirement satisfied by using the Modular Integrated Communications Helmet. 12 Gauge Penetrating/Irritating Cartridge - small production requirement does not justify high ammunition testing requirements and associated costs. Riot Control Agent Neutralizer - human health testing issues.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604713A - Combat Feeding, Clothing, and Equipment

PROJECT

668**FY 2001 Accomplishments: (Continued)**

- 845 Program Redirected: 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 Systems

Total 13762

FY 2002 Planned Program

- 4507 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, XM107 Semi-Automatic Anti-Materiel Rifle, Parachutists Drop Bag, Tactical Assault Ladder System, Collapsible Grappling Hook, Multiple Utility Digging System (MUDS), Face Paint(Compact), Neck Protector, Concealable Stab Protective Body Armor, Tactical Search Mirrors, Family of Batons and Night Sticks, Boot Gaiters, POL Handlers Glove System, Survival Egress Air (SEA) MK 2.0, Protective Gloves, and LE/SRT Civil Disturbance Equipment Bag.
- 4329 Continue evaluation/procure prototypes and/or test: Close Combat Mission Capability Kit, M84 Reloadable Fuze, XM107 Sniper Ammunition, Integrated Laser White Light Pointer, Camouflage Uniform System for Soldiers, Permethrin Treatment of Nomex, Improved Combat Shelter, and NBC Compatible Drinking System.
- 2773 Initiate market surveys and/or evaluations: M9 Pistol Rail, Collapsible Buttstock for M249 Machine Gun, Hand Thrown Stingball Grenade, Individual Riot Control Agent Dispenser, Body Restraint, Modular Glove, Aircrew Immersion Coveralls, Aircrew Survival/Egress Knife, and Tactical Thigh Holster.
- 2383 In-house engineering support services, computer services, conduct technical and program reviews.

Total 13992

FY 2003 Planned Program

- 3449 Complete evaluation/type classify/transition to production: XM107 Sniper Ammunition, M84 Reloadable Fuze, Integrated Laser White Light Pointer, Individual Riot Control Agent Dispenser, Modular Glove, Combat Uniform for Soldiers, Permethrin Treatment of Nomex, Tactical Thigh Holster, Body Restraint, Aircrew Immersion Coveralls, Aircrew Survival/Egress Knife, Improved Combat Shelter, and NBC Compatible Drinking System.
- 3987 Continue evaluation/procure prototypes: Close Combat Mission Capability Kit, M9 Pistol Rail, Collapsible Buttstock for M249 Machine Gun, Hand Thrown Stingball Grenade, and Face Paint (Stick).

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604713A - Combat Feeding, Clothing, and Equipment

PROJECT

668

FY 2003 Planned Program (Continued)

- 4228 Initiate market surveys and/or evaluations on new items to commence in FY 03.
- 2517 In-house engineering support services, computer services, conduct technical and program reviews.

Total 14181

<u>B. Other Program Funding Summary</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>
OPA3, MA6800, Soldier Enhancement	3947	3127	2488	4382	4841	4929	4747	Continuing	Continuing
OPA2, BA5300, Soldier Enhancement	19164	5096	6114	8196	8228	8489	8481	Continuing	Continuing
WTCV, GC0076, Small Arms (SEP)	3473	301	1954	2392	1901	1956	1954	Continuing	Continuing
WTCV, GZ1290, Squad Automatic Wpn (Mods)	9865	4419	4119	7690	0	0	0	Continuing	Continuing
WTCV, GZ2800, M16 Rifle Mods	9504	2085	0	2419	2410	2097	0	Continuing	Continuing
WTCV, GB3007, M4 Carbine Mods	2481	0	9267	9889	7430	5932	5920	0	50312
WTCV, G01500, Sniper Rifle	3056	2134	8913	8934	8915	8898	8090	0	49085
WTCV, GC0925, Mods	779	1252	817	1288	1281	1351	1348	Continuing	Continuing
PAA, F47500, 7.62mm AP	0	2395	2414	400	400	400	400	0	7717
PAA, F47600, 5.56mm AP	1325	3526	3559	3559	3560	600	600	0	18555
PAA, F00900, 40mm Canister	0	0	5548	0	0	0	0	0	5548
PAA, E84900, XM84 Stun Grenade	2336	2381	0	0	0	0	0	0	6456
PAA, E86400, 12 Gauge Non Lethal	936	0	0	0	0	0	0	0	936
PAA, E91100, XM95 Cartridge, Non Lethal Crowd	6311	6487	0	0	0	0	0	0	12798
PAA, E89000, 40mm Non Lethal	1870	1960	0	0	0	0	0	0	5356
OMA, 121017, Central Funding & Fielding	61706	79515	72427	89407	110978	113854	114417	Continuing	Continuing

C. Acquisition Strategy: The Soldier Enhancement Program (SEP) focuses on developmental initiatives and integration efforts that lend

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
668

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.

<u>D. Schedule Profile</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>
SEP Requirements Reviews	2Q	2Q	2Q	2Q	2Q	2Q	
SEP Projects Reviews	4Q	4Q	4Q	4Q	4Q	4Q	

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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	2092	1791		2314		2496		0	8693	0
b . Integrated Laser White Light Pointer	MIPR	PM-NVRSTA, VA	0	99		1066		1033		0	2198	0
c . Various	MIPR	PM-SA, NJ	5340	3331		4769		5159		0	18599	0
d . Canteen Water Insert	MIPR	PM-PAWS MI	220	0		0		0		0	220	0
e . Various	MIPR	SBCCOM, MD	974	461		387		391		0	2213	0
f . Lightweight Low Profile Voice Amplifier	MIPR	PM-NBC, MD	200	0		0		0		0	200	0
g . Smart Mine Probe	MIPR	PM-MCD, VA	150	0		0		0		0	150	0
h . Pattern Generation	MIPR	CECOM, NJ	79	30		0		0		0	109	0
Subtotal:			9055	5712		8536		9079		0	32382	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)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604713A - Combat Feeding, Clothing, and Equipment

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	225		100		227		0	752	0
b . Various	Contracts	Various	2020	4365		2688		2058		0	11131	0
c . DCD Support - Military Police	MIPR	GSA/FEDLEARN	94	110		120		130		0	454	0
d . Logistics Support	MIPR	Army Logistics Support Activity	0	78		45		50	4Q	0	173	0
e . DCD Support	MIPR	Armor School, KY	0	108		0		0		0	108	0
f . Various	MIPR	West Point, NY	0	329		0		0		0	329	0
g . Various	MIPR	NVEOD, VA	0	115		0		0		0	115	0
h . Various	MIPR	AMCOM, AL	0	50		0		0		0	50	0
Subtotal:			2314	5380		2953		2465		0	13112	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)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604713A - Combat Feeding, Clothing, and Equipment

668

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	SBCCOM(OFIG), Natick, MA	25	0		0		0		0	25	0
b . Various	MIPR	OPTEC/A TEC,	1281	170		120		120		0	1691	0
Subtotal:			1306	170		120		120		0	1716	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	2500		2383		2517		0	8705	0
Subtotal:			1305	2500		2383		2517		0	8705	0

Remarks: Costs vary annually depending on number and type of items being evaluated.

Project Total Cost:			13980	13762		13992		14181		0	55915	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604713A - Combat Feeding, Clothing, and Equipment						PROJECT C40		
COST (In Thousands)	FY 2001 Actual	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	8636	8643	13367	14059	14418	11145	11159	0	87457	

A. Mission Description and Budget Item Justification: This project supports the engineering and manufacturing development and integration of field shelters, showers, latrines, heaters, mortuary affairs, organizational equipment, and other combat service support equipment to improve unit sustainability and combat effectiveness. Project supports development and type classification of personnel and cargo parachutes, airdrop containers and other aerial delivery equipment to improve safety and efficiency of airborne operations. Project supports development of tactical field shelters including a series of Rigid Wall Shelters (RWS) with added capabilities and enhanced survivability. This project develops critical enablers that support the Legacy-to-Objective transition path of the Army's Transformation Campaign Plan.

FY 2001 Accomplishments:

- 500 Conducted Design Validation of the Advanced Tactical Parachute System/Advanced Reserve Parachute System (ATPS/ARPS).
- 85 Procured ATPS/ARPS Design Validation test items, (20 @ \$4,250ea).
- 1732 Initiated Developmental Testing for the ATPS/ARPS.
- 120 Procured Developmental Test items for ATPS/ARPS (30 Phase I test items @ \$4,000 ea).
- 300 Conducted Technical and Operational Testing and User Field Evaluation for Chaplaincy Logistical Support Package.
- 450 Conducted Milestone B, Fabricated Prototypes (2 @ \$125K ea.)and conducted DT, OT and Log Demo for the Containerized Chapel.
- 500 Completed Milestone B on the Space Heater Small. Initiated fabrication of prototype 60K BTU Space Heater Convective. Completed Milestone C and conducted technical testing on Space Heater Small Production Demonstration Models.
- 1194 Completed testing and field evaluations of Modular General Purpose Tent System P3I prototypes.
- 549 Performed Design Verification Testing on the 500 ft. Low Velocity Airdrop Capability (LVADC).
- 322 Procured test items (5 @ \$65.4K) for 500 ft. LVADC Design Verification Testing.
- 2884 Awarded contract to adapt and modify WASTECH International, Inc. microwave technology to produce bench-scale prototype components of a deployable, modular sanitary waste treatment system.

Total 8636

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development**0604713A - Combat Feeding, Clothing, and Equipment****C40****FY 2002 Planned Program**

- 2980 Complete Developmental Testing and conduct Milestone II for the ATPS/ARPS.
 - 120 Procure test items for the Developmental Testing of Phase II ATPS/ARPS (30 ea @ \$4,000).
 - 1057 Plan for and conduct Down-Select Testing on the 500 ft. LVADC.
 - 890 Procure test items (14 @ \$63K) for the Down-Select Testing of 500 ft. LVADC.
 - 500 Obtain Milestone C Type Classification - Standard and Material Release for the Containerized Chapel.
 - 600 Complete Full-Rate Production Decision for Space Heater Small. Conduct Technical Testing on Space Heater Large. Conduct Milestone B for the Space Heater Large. Conduct Milestone B for 60K BTU Space Heater Convective.
 - 600 Procure Test items (liners; Frame/pole interface; and Plenum)for the Modular General Purpose Tent System (MGPTS) P3I (10 complete systems @ \$25K ea.). Initiate system Testing and Evaluation
 - 396 Investigate and evaluate airbeam technology and composite materials for potential employment in the Lightweight Maintenance Enclosure (LME) P3I and Tent, Extendable, Modular, Personnel,(TEMPER). Develop and evaluate LME P3I enhancements.
 - 1500 Fabricate prototypes (2 @ 250K ea) and initiate Developmental and Operational Testing on the Containerized Batch Laundry (CBL).
- Total 8643

FY 2003 Planned Program

- 2330 Award Option II for the ATPS/ARPS contract. Conduct Operational Testing.
- 945 Procure Operational Test (OT) items for the ATPS/ARPS. (270 units @\$3.5K ea).
- 2620 Conduct Developmental Testing for the 500 ft. LVADC. Initiate Operational Testing.
- 890 Procure Test items (15 systems @ \$58+K ea.) for 500 ft. LVADC Operational Testing.
- 1600 Conduct Milestone C for Space Heater Large. Conduct Technical Testing on 60K BTU Space Heater Convective and transition into production.
- 1500 Conduct technology demonstration and feasibility tests on the LME P3I and assess integration of proven airbeam technology into LME and MGPTS.
- 1430 Conduct Developmental and Operational Testing on the Enhanced Container Delivery System (ECDS).

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604713A - Combat Feeding, Clothing, and Equipment	PROJECT C40
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FY 2003 Planned Program (Continued)

- 1594 Type Classify CBL (MS C) and initiate water recycling product improvements.
- 458 Initiate developmental testing on the Mobile Integrated Remains Collection System (MIRCS).

Total 13367

<u>B. Other Program Funding Summary</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, 0603747.C09, Soldier Support Equipment - AD	6465	8837	12000	13146	13290	10392	10488	Continuing	Continuing
MA7805, Universal Static Line	3934	0	0	0	0	0	0	0	4910
MA8061, Lightweight Maintenance Enclosure	5548	6590	7730	7733	7715	5993	5986	0	50985

C. Acquisition Strategy: Accelerate product development and testing to transition to Production.

<u>D. Schedule Profile</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 Milestone C for the Space Heater Small	2Q						
Award Development contract for Space Heater Convective (60K BTU)	4Q						
Conduct Technical/Operational Test for Chaplaincy Logistical Support Package	2Q						
Complete Milestone III for the Chaplaincy Logistical Support Package		1Q					
Start Developmental Testing of Advanced Reserve Parachute System/Advanced Tactical Parachute System.	4Q						
Conduct Field Evaluation on Lightweight Maintenance Enclosure P3I and TEMPER Improvements		4Q					
Conduct MS B for the Space Heater Large		4Q					

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
C40

D. Schedule Profile (continued)	<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>
Fabricate Containerized Chapel Prototypes	2Q						
Conduct Technical/Operational Tests for Containerized Chapel.	4Q						
Complete Milestone C, and Type Classify-Standard the Containerized Chapel		3Q					
Complete Full Rate Production Decision for the Space Heater Small		3Q					
Complete DT on ATPS/ARPS		2Q					
Initiate DT and OT on CBL.		4Q					
Type Classify the Space Heater Large			4Q				
Conduct OT on ATPS/ARPS			3Q				
Conduct DT and OT on 500 Ft. LVADC			3Q				
Type Classify (MS C) CBL.			3Q				
Conduct DT and initiate OT on ECDS.			4Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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 . SBCCOM	In-House	SBCCOM (NRDEC), Natick, MA	2517	654		1797		2175		2522	9665	9665
b . Contracts	Various	Various	9612	4211		2877		4243		9606	30549	30549
c . Inflation Withhold			0	0		0		0		6	6	6
Subtotal:			12129	4865		4674		6418		12134	40220	40220

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)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604713A - Combat Feeding, Clothing, and Equipment

C40

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		6274		4551	25208	25208
Subtotal:			7368	3496		3519		6274		4551	25208	25208

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	SBCCOM, Natick, MA	1517	275		450		675		1562	4479	4479
Subtotal:			1517	275		450		675		1562	4479	4479

Project Total Cost:			21014	8636		8643		13367		18247	69907	69907
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604713A - Combat Feeding, Clothing, and Equipment	PROJECT L40
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COST (In Thousands)	FY 2001 Actual	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	5117	4522	4651	5209	5193	5478	5571	0	43285

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. 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. This project supports the Legacy-to-Objective transition path of the Army's Transformation Campaign Plan.

FY 2001 Accomplishments:

- 148 Updated fabrics, style changes, and consolidated dress clothing for Joint Services.
 - 96 Provided integration support of the Air Warrior Program.
 - 1030 Completed developmental testing/operational testing, achieved Milestone C, and initiated production for the Modular Lightweight Loadbearing Equipment.
 - 160 IABDU - Improved Aircrew Battle Dress Uniform, achieved Milestone B, awarded developmental contract, procured prototype items, and prepared to begin user evaluation.
 - 552 Awarded developmental contract, and initiated developmental/operational testing for the Concealable Body Armor.
 - 55 Selected various dress uniform styles and fabrics and presented recommendations to the Army Uniform Board for the Army Service Uniform Modernization.
 - 961 Selected a variety of injury reducing socks, procured items for test, and initiated large scale user evaluation for the Study of Foot Injury Reduction.
 - 2115 Continued In-house engineering support services, computer services, and conduct technical and program reviews.
- Total 5117

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604713A - Combat Feeding, Clothing, and Equipment

PROJECT

L40**FY 2002 Planned Program**

- 105 Small Unit Multipurpose Trailer (Soldier equipment item), solicit proposals, award developmental contract, procure test items and initiate user evaluation.
 - 500 Integrated Head Protection , collaborate with NATO nations on functional trade-offs and identify integration opportunities.
 - 625 Advanced Bomb Suit, solicit proposals, award developmental contract, procure test items and initiate operational testing.
 - 320 Improved Toxicological Agent Protective Boots, Glove, and Apron, solicit proposals, award developmental contract, procure test items and initiate testing.
 - 401 Concealable Body Armor, complete testing, achieve Milestone C, and initiate production.
 - 200 Improved Aircrew Battle Dress Uniform, conduct and complete user evaluation, and amend ABDU performance specification as required.
 - 90 Army Service Uniform Modernization, receive CSA approval to develop concepts and initiate study of alternatives
 - 1264 Update fabrics, style changes, and consolidate dress clothing for Joint Services
 - 65 Alternative Fabric for Extended Cold Weather Clothing System, obtain sample items manufactured using alternative materials for use in a field evaluation.
 - 952 In-house engineering support services, computer services, and conduct technical and program reviews.
- Total 4522

FY 2003 Planned Program

- 345 Small Unit Multipurpose Trailer (Soldier equipment item), complete user evaluation and begin operational testing.
- 400 Integrated Head Protection, award developmental contract, procure test items, and initiate integration efforts.
- 100 Advanced Bomb Suit, complete operational testing, achieve Milestone C, and initiate production.
- 1919 Military Eye Protection System, complete user evaluation, conduct operational testing, achieve Milestone C, and initiate production.
- 700 Army Service Uniform Modernization, downselect designs and procure wear test items.
- 150 Update fabrics, style changes, and consolidate dress clothing for Joint Services.
- 170 Alternative Fabric for Extended Cold Weather Clothing System, migrate fabric alternatives to related wet weather gear.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604713A - Combat Feeding, Clothing, and Equipment	PROJECT L40
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FY 2003 Planned Program (Continued)

- 867 In-house engineering support services, computer services, and conduct technical and program reviews.

Total 4651

<u>B. Other Program Funding Summary</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, 0603747.669, Clothing & Equipment	3360	4788	4881	5533	5258	5529	5918	Continuing	Continuing
OMA, 121017, Central Funding and Fielding	79590	90013	73401	80941	113533	114101	114672	Continuing	Continuing

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) similar to 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, 3) fully integrated development that will require substantial RDT&E funding and will be completed in 4 years or more.

<u>D. Schedule Profile</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>
Life Cycle Systems Review	2-4Q	2-4Q	2-4Q	2-4Q	2-4Q	2-4Q	2-4Q

A Life Cycle System Review is held during the 2nd and 4th quarter of each fiscal year

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	811	1050	1-4Q	1511	1-4Q	2298	1-4Q	Continue	Continue	Continue
b . Various	Contracts	Various	1308	1304	1-4Q	1239	1-4Q	886	1-4Q	Continue	Continue	Continue
Subtotal:			2119	2354		2750		3184		Continue	Continue	Continue

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
a . Misc Support	MIPR	Various	50	96	1-4Q	50	1-4Q	50	1-4Q	0	246	0
Subtotal:			50	96		50		50		0	246	0

Remarks: Support Costs vary annually depending on number of and types of programs being evaluated.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	ATEC	469	472	1-4Q	720		500		0	2161	0
b . Various	MIPRS	SBCCOM (OFIG), Natick, MA	75	80	1-4Q	50		50		0	255	0
Subtotal:			544	552		770		550		0	2416	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	710	2115	1-4Q	952		867		Continue	Continue	Continue
Subtotal:			710	2115		952		867		Continue	Continue	Continue

Remarks: Management Services costs vary annually depending on the number and types of programs being evaluated.

Project Total Cost:			3423	5117		4522		4651		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604715A - Non-System Training Devices - Eng Dev

COST (In Thousands)	FY 2001 Actual	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	71482	28682	43650	62476	54407	40828	49465	Continuing	Continuing
241 NSTD COMBINED ARMS	48899	27685	42446	61239	51787	39514	48107	Continuing	Continuing
396 WARSIM INTEL MODULE (WIM)	19717	0	0	0	0	0	0	0	36852
573 STRICOM/NAWCTSD SUPPORT	2866	997	1204	1237	2620	1314	1358	Continuing	Continuing

A. Mission Description and Budget Item Justification: 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 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. Project 573 supports salaries.

The FY03 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 FY03 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)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604715A - Non-System Training Devices - Eng Dev

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	75522	26319	36056
Appropriated Value	73295	28919	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-237	0
b. SBIR / STTR	-1391	0	0
c. Omnibus or Other Above Threshold Reprogramming	0	0	0
d. Below Threshold Reprogramming	250	0	0
e. Rescissions	-672	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	7594
Current Budget Submit (FY 2003 PB)	71482	28682	43650

FY02: Congressional Increase for Camp Dawson Simulation efforts. FY03: Increased Army support to the program: \$5M for Combat Training Center, \$1.684M for Tactical Engagement Simulation System (TESS), \$0.910M supports a New Generation Army Target System (N-GATS)

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev				PROJECT 241	
COST (In Thousands)	FY 2001 Actual	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	48899	27685	42446	61239	51787	39514	48107	Continuing	Continuing

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 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. FY02 starts Camp Dawson Simulation Development. 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. The Combat Maneuver Training Center (CMTC) RDMS replaces RDMS infrastructure and the Data Communications Interfaces (DCIs) to ensure CMTC can sustain training operations. The CMTC SINGARS Infrastructure correctly integrates Range Measurement and Control Subsystem into the CMTC-IS communications structure. In FY03 the New Generation Army Targetry Systems (NGATS) program continues to provide the development and planning to address emerging weapon system targetry requirements. The FY03 program will continue supporting the 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), CMTC RDMS, CMTC SINGARS Infrastructure, and Digital Multi-Purpose Range Complexes (DMPRCs). In FY 03, 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 FY03 program will provide funding for emerging concepts and studies for training material needs and Army initiatives. NOTE: FY02 WARSIM program transferred to PE 604742, Project 362.

These systems support the Legacy, Interim and Objective transition path of the Transformation Campaign Plan.

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604715A - Non-System Training Devices - Eng Dev

PROJECT

241

FY 2001 Accomplishments:

- 4534 Continued development of IEWTPT and begin integration with WARSIM/WIM.
- 9475 Continued 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 continue engineering development of Army Tactical Command and Control Systems (ATCCS) modules required for ABCS integration at NTC, CMTC and JRTC.
- 3287 Continued development of limited enhancements to CBS.
- 16792 Continued 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 Initiated development and integration of full logistics support functionality/CSSTSS for WARSIM.
- 5266 Procured 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 Continued the development tasks needed to upgrade the AWSS to full Operational Requirements Document (ORD) compliance.
- 4392 Initiated 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 48899

FY 2002 Planned Program

- 18959 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 and complete engineering development of Army Tactical Command and Control Systems (ATCCS) modules required for ABCS integration at NTC.
- 4281 Continue development of limited enhancements to CBS.
- 908 Funding for emerging engineering manufacturing development programs and studies for training material needs and Army initiatives.

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604715A - Non-System Training Devices - Eng Dev

PROJECT

241

FY 2002 Planned Program (Continued)

- 996 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.
- 2541 Start Camp Dawson Simulation development efforts.

Total 27685

FY 2003 Planned Program

- 4006 Continue development of limited enhancements to CBS.
- 1088 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.
- 612 Continue funding for emerging engineering manufacturing and development programs and studies for training material needs and Army initiatives.
- 29389 Continue development of devices, simulators and simulations to support training at the Combat Training Centers (CTCs), to include establishment of CTIA version 1.1 baseline for Live Training Transformation (LTT) project line to include NTC OIS, continue development of renovation to the Range Data Measuring System, Observer Controller Communication System and the Singars infrastructure at the Combat Maneuver Training Center.
- 7351 Initiate development of One Tactical Engagement Simulation System One TESS.

Total 42446

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev PROJECT
241

<u>B. Other Program Funding Summary</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>
OPA3, Appropriation NA0100 Training Devices, Non-System	115865	125503	111682	154409	286731	169468	151440	Continuing	Continuing
OPA3, Appropriation MA6601 CTC Support	98138	10307	54728	37915	91161	119697	126699	Continuing	Continuing
OPA3, Appropriation NA0174 Fire Support Combined Arms Tactical Trainer	1444	0	0	0	0	0	0	0	17860
RDTE, PE 0604742 Project 361	0	4165	7518	741	1241	1277	1276	Continuing	Continuing
RDTE, PE 0604742 Project 362	0	61448	45776	30556	9450	7954	6036	Continuing	Continuing

In FY 2002, IEWTPT transfers to PE 0604742 Proj 361. In FY 2002, WARSIM/WIM transfers to PE 0604742 Proj 362.

C. Acquisition Strategy: Competitive development efforts based on performance specifications.

<u>D. Schedule Profile</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 WARSIM System Development Contract	1Q						
CBS Contract Award	1Q	1Q	1Q	1Q			
NTC-OIS MS B			2Q				
NTC OIS MS C					1Q		
ABCS Integration CDR	2Q						
ABCS Integration Completion		4Q					
IEWTPT Contract Award	1Q						
NGATS Contract Award	2Q	2Q					
AWSS Contract Award	2Q						
CTIA MS B		2Q					
CTIA Development Contract Award	2Q						
CMTC OCCS, RDMS & SINCGARS Infrastructure Cont Awd			1Q				
Camp Dawson Simulation Award		3Q					

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev PROJECT
241

D. Schedule Profile (continued)	<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>
One TESS Contract Award			1Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng 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	16977	1Q	0		0		Continue	Continue	Continue
b . WARSIM Functional Description of Battlefield	C/CPFF	Veda Inc, Alexandria, VA	3675	0		0		0		0	3675	3675
c . CBS Development	C/FFP	JPL, Cal Tech, Pasadena, CA	23303	3014	1Q	3705	1Q	3529	1Q	Continue	Continue	Continue
d . IEWTPT Development	C/CPFF/FFP	MOTOROLA INC, SCOTTSDALE, AZ	300	3600	1Q	0		0		Continue	Continue	Continue
e . JRTC MOUT Phase II*	SS/FFP	Anteons, NC	2708	462	2Q	0		0		0	3170	3170
f . ABCS Integration	C/CPFF	ARL, Univ Texas, TX	7545	3313	1Q	0		0		Continue	Continue	Continue
g . NGATS	T & M	AMCOM, Rock Island, IL	0	3392	2Q	716	2Q	586	2Q	Continue	Continue	Continue
h . AWSS	FFP	Navy, Indianhead, MD	1484	2970	2Q	0		0		0	4454	4454
i . CSTAR	T & M	Motorola, Scottsdale, AZ	1842	0		0		0		0	1842	1842
j . NTC-OIS	C/FFP	TBD	6493	0		0		13438	2Q	Continue	Continue	Continue
k . CTIA	C/FFP	Lockheed Martin Inc., Orlando, FL	0	2584	2Q	14430	2Q	9866	2Q	Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev

PROJECT
241

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award 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 . One TESS	TBD	TBD	0	0		0		6616	1Q	Continue	Continue	Continue
m . CMTC OCCS, RDMS & Singars Infrastrucure	TBD	TBD	0	0		0		2904	1Q	0	2904	2904
n . NTC RDMS	FFP	SAIC, San Diego, CA	433	0		3470	1Q	0		0	3903	3903
o . Camp Dawson Simulation	TBD	TBD	0	0		2541	3Q	0		0	2541	2541
Subtotal:			167471	36312		24862		36939		Continue	Continue	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 for 2nd prototype effort.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev

PROJECT
241

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	2304	2304
b . WARSIM Engr Spt	Various	Multiple	4566	1281		0		0		Continue	Continue	Continue
c . WARSIM Data Mgt & Repository	C/CPIF	Veda Inc., Alexandria, VA	1877	303		0		0		Continue	Continue	Continue
d . WARSIM Software Engineering	C/CPFF	AST, Orlando, FL	5323	500		0		0		Continue	Continue	Continue
e . CBS Engineering	Various	Multiple	71	127	1Q	372	1Q	242	1Q	Continue	Continue	Continue
f . NTC-OIS	C/BAA	ARL, Univ of Texas, Austin	6493	350	1Q	0		1505	1Q	Continue	Continue	Continue
g . ABCS Integration	C/FFP	Madison Res Corp, Orlando, FL	3712	200	1Q	600	1-4Q	0		0	4512	4512
h . IEWTPT Engr Support	Multiple	Various	132	504	1Q	0		0		Continue	Continue	Continue
i . NGATS	MIPR	Various	0	1000	1Q	280	1Q	502	1Q	Continue	Continue	Continue
j . CSTAR	Multiple	Various	94	0		0		0		0	94	94
k . AWSS	Multiple	Various	500	700	2Q	0		0		0	1200	1200

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604715A - Non-System Training Devices - Eng Dev

241

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
l . CTIA	MIPR	Various	0	2566	1Q	459	1Q	751	1Q	0	3776	3776
m . Concept Exploration	Multiple	Various	0	0		908	1-3Q	612	1-3Q	Continue	Continue	Continue
n . CMTC OCCS, RDMS and Sincgars Infrastructure	Multiple	Various	0	0		0		256	1-2Q	0	256	256
o . OneTESS	Multiple	Various	0	0		0		735	1-2Q	Continue	Continue	Continue
p . D241 Support	Multiple	Various	0	0		0		110	1-3Q	0	110	110
Subtotal:			24875	7728		2619		4713		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng 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		Continue	Continue	Continue
b . WARSIM Dev Test	Multiple	Various	838	0	1Q	0		0		Continue	Continue	Continue
c . IEWTPT Development Testing Planning & Spt	Multiple	Various	35	75	1Q	0		0		Continue	Continue	Continue
d . CBS Confederation Test Support	Multiple	Various	0	39	1-2Q	41	1Q	55	2Q	0	135	135
e . CMTC OCCS, RDMS & Sincgars Infrastructure	Multiple	Various	0	0		0		559	3Q	0	559	559
Subtotal:			2324	1819		41		614		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604715A - Non-System Training Devices - Eng Dev

241

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	1599	1599
b . WARSIM Cost Analysis	C/CPFF	TASC, Orlando, FL	366	110	2Q	0		0		Continue	Continue	Continue
c . WARSIM Program Mgt	Various	Multiple	4911	2144	1-2Q	0		0		Continue	Continue	Continue
d . IEWTPT Program Mgt	Various	Multiple	371	355	1Q	0		0		Continue	Continue	Continue
e . CBS Program Management	Various	Multiple	0	107	1Q	163	1Q	180	1Q	Continue	Continue	Continue
f . CSTAR Program Management	Various	Multiple	213	0		0		0		0	213	213
Subtotal:			7136	3040		163		180		Continue	Continue	Continue
Project Total Cost:			201806	48899		27685		42446		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev				PROJECT 573	
COST (In Thousands)	FY 2001 Actual	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	2866	997	1204	1237	2620	1314	1358	Continuing	Continuing

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. FY01 573 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 2001 Accomplishments:

- 2866 Funds STRICOM Infrastructure to include labor and travel in support of command operations.

Total 2866

FY 2002 Planned Program

- 997 STRICOM labor in support of command operations.

Total 997

FY 2003 Planned Program

- 1204 STRICOM labor in support of command operations.

Total 1204

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604715A - Non-System Training Devices - Eng Dev

PROJECT

573

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

C. Acquisition Strategy: Not Applicable.

D. Schedule Profile: Not applicable for this item.

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604716A - TERRAIN INFORMATION - ENG DEV

COST (In Thousands)	FY 2001 Actual	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	7027	8766	8232	7094	6066	5908	5896	0	57505
579 FIELD ARMY MAP SYS ED	6544	8766	8232	7094	6066	5908	5896	0	57022
598 HIGH VOLUME MAP PRODUCTION EQUIP (HVMPE)	483	0	0	0	0	0	0	0	483

A. Mission Description and Budget Item Justification: The Project Director for Combat Terrain Information Systems (PD CTIS) is responsible for developing 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 and Second Digital Divisions (FDD) and the Transformation Brigades. CTIS systems support the Legacy to Objective transition path of the Transformation Campaign Plan (CTP).

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604716A - TERRAIN INFORMATION - ENG DEV

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	6027	8840	8252
Appropriated Value	6082	8840	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-74	0
b. SBIR / STTR	-15	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	1015	0	0
e. Rescissions	-55	0	0
Adjustments to Budget Years Since FY2002/003 PB	0	0	-20
Current Budget Submit (FY 2003 PB)	7027	8766	8232

FY01 - Additional funding supports initiation of Research and Development of an automated tactical engineer command and control, mission planning and decision support capability.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604716A - TERRAIN INFORMATION - ENG DEV						PROJECT 579		
COST (In Thousands)	FY 2001 Actual	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	6544	8766	8232	7094	6066	5908	5896	0	57022

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)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604716A - TERRAIN INFORMATION - ENG DEV

PROJECT

579**FY 2001 Accomplishments:**

- 5044 Continued P3I development for DTSS - map server architecture, rapid terrain visualization, automated feature extraction, embedded training, exploitation of new data sources, TSS upgrades
- 500 Conducted evaluation of system upgrade alternatives for follow-on DTSS-L production contract
- 1000 Initiate research and development of an automated tactical engineer command and control, mission planning and decision support capability.

Total 6544

FY 2002 Planned Program

- 7166 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 8766

FY 2003 Planned Program

- 7842 Continue P3I development for DTSS - TDA enhancements (hydrology), automated feature extraction, data conflation, Product and data quality assessments
- 250 Complete EMD for HVMP
- 140 ABCS Systems Engineering & Integration (SE&I)

Total 8232

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604716A - TERRAIN INFORMATION - ENG DEV **PROJECT**
579

<u>B. Other Program Funding Summary</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>
OPA - KA2550 - DTSS	20144	19970	14089	13691	6934	6922	4934	92200	203279

C. Acquisition Strategy: The Acquisition Strategy for the DTSS - Light EMD phase was to utilize Army standard equipment and the Common Hardware/Software (CHS) computer workstations in conjunction with non-development item (NDI) components to develop an integrated baseline hardware configuration. The previous Combat Terrain Information Systems (CTIS) System Engineering and Integration (SE&I) contractor (Lockheed Martin Corp) executed the EMD phase, performing system integration, and provided units for formal test and evaluation. Milestone III for the DTSS-L was successfully completed in Jan 98. Production of the DTSS-L commenced in February 1999. 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 commenced in FY 2000 and for the DTSS-B commences in FY 2002. The DTSS-B has also been Type Classified-Standard. The acquisition of the DTSS-D and DTSS-B relied upon existing contracts and commercial-off-the-shelf to the fullest extent possible. The Project Office will continue with this strategy for all technology refreshment programs. The 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 (Northrup Grumman, 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>	<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 DTSS-L Production Contract/Options	1Q	2Q	1Q				
DTSS-L Production	1-4Q	1-4Q	1-4Q				
Continue DTSS P3I Program	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Field DTSS-L	1-4Q	1-4Q	1-4Q	1-4Q			
Technology Refreshment and Fielding of DTSS-D	1-3Q						
Field DTSS Build 7.0 Software	3Q						
DTSS-L IOC	3Q						

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604716A - TERRAIN INFORMATION - ENG DEV **PROJECT**
579

D. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Technology Refreshment and Fielding of DTSS-B		1-3Q					
Continue EMD for HVMP (initiated in FY01)	4Q	1-4Q					
Milestone III for HVMP			1Q				
Production of HVMP			2-4Q	1-4Q			
Field DTSS Build 8.0 Software			1Q				
Field DTSS Build X.X Software				2Q	2Q	2Q	2Q
Technology Refreshment of DTSS-L				2-4Q	1-4Q	1-4Q	1-4Q
Conduct Technology Refreshment of Institutional Training Classroom		1-2Q					
Technology Refreshment and Fielding of DTSS-D					3-4Q	1-2Q	
Technology Refreshment and Fielding of DTSS-B							3-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604716A - TERRAIN INFORMATION - ENG DEV

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	23280	23280
b . Primary Hardware Development	C/CPFF	Northrup Grumman, Chantilly, VA	850	535	1Q	1910	1Q	1500	1Q	Continue	Continue	Continue
c . ABCS SE&I	MIPR	PEO C3S, Ft. Monmouth, NJ	150	0		0		140	1Q	0	290	290
Subtotal:			24280	535		1910		1640		Continue	Continue	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	34919	34919
b . Software Development	C/CPFF	Northrup Grumman, Chantilly, VA	5005	4781	1Q	5271	1Q	5067	1Q	Continue	Continue	Continue
Subtotal:			39924	4781		5271		5067		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604716A - TERRAIN INFORMATION - ENG DEV

PROJECT
579

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	50	2Q	Continue	Continue	Continue
Subtotal:			705	0		50		50		Continue	Continue	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	200	1Q	Continue	Continue	Continue
b . Government Eng Support	MIPR	Various	16068	200	1Q	460	1Q	400	1Q	Continue	Continue	Continue
c . Program Mgmt Support*	Delivery Orders	Various	2530	150	1Q	175	1Q	175	1Q	Continue	Continue	Continue
d . Program Mgmt Personnel	MIPR	TEC, Ft. Belvoir, VA	10402	678	1Q	700	1Q	700	1Q	Continue	Continue	Continue
Subtotal:			33817	1228		1535		1475		Continue	Continue	Continue

Remarks: *This category primarily covers Office Automation

Project Total Cost:			98726	6544		8766		8232		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604726A - Integrated Meteorological Support System					PROJECT D85			
COST (In Thousands)		FY 2001 Actual	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)	1755	1896	3417	3364	3356	2960	2854	0	23804

A. Mission Description and Budget Item Justification: Integrated Meteorological System (IMETS) funds the development of evolving upgrades to the fielded system. It provides the battlefield commander at all echelons with accurate, high resolution, near real time weather data to conduct intelligence preparation of the battlefield (IPB). The IMETS is a mobile tactical automated weather data receiving, processing, and dissemination system designed to provide timely weather and environmental effects, forecasts, observations, and decision aid support to the Army. The IMETS is an Army -furnished system, which is operated by Air Force weather personnel and maintained within Army support channels. IMETS provides weather information overlays for the Common Tactical Picture, 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 3) 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 having its own vehicle, shelter, and power source. 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 2001 Accomplishments:

- 247 Integrated IMETS applications to ABCS 6.0 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 dismantled 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)**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development**0604726A - Integrated Meteorological Support System****D85****FY 2001 Accomplishments: (Continued)**

- 526 Extended 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 Continued to develop IMETS interoperability with other BFA systems, including MCS, ASAS, AFATDS, CSSCS and AMDWS.
- 382 Continued to evaluate, configure and integrate tech base prototype capabilities into operational IMETS.
- 200 Continued test and evaluation support for ABCS digitization products.
- 250 Implemented 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 1755

FY 2002 Planned Program

- 219 Integrate IMETS applications to ABCS 6.3 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. Redesign a faster, simpler acoustics TDA prototype. Extend the period of coverage by IMETS weather forecasts to 120 hours. Investigate automated mission inputs into IWEDA from ABCS digital OP-ORD information from the JCDB or other sources.
- 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 a nowcast capability that can ingest and fuse conventional observations 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 Develop and integrate improved IWEDA military weather effects database that can provide significantly improved weather support capability for Operation Enduring Freedom. The new IWEDA Rules cover: US Army and Air Force aviation systems and operational concepts, Special Operations Forces systems and operational concepts, Army Logistics/Combat Service Support systems and operations, as well as Afghan/Taliban threat systems. Implement automated mission inputs into IWEDA from ABCS digital OP-ORD information archived in the JCDB or other databases.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development**0604726A - Integrated Meteorological Support System****D85****FY 2002 Planned Program (Continued)**

- 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/OA 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 3QFY02.
- 397 Modify IMETS IWEDA and Contours client applications to make them independent DII-COE level 8 compliant Weather Analysis Tool segments ready for integration into GCCS. Improve the ability for joint sharing of common meteorological forecasts, weather hazards/warnings and weather impact decision aids. Develop new prototype model for weather effects on illumination 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 1896

FY 2003 Planned Program

- 2112 Improve the IMETS NOWCAST capability to ingest and fuse non-conventional battlefield observations such as UAV and mobile met sensors and additional conventional observations such as Meteorological Satellite imagery and data. Along with the Navy and the Air Force, design, develop, and integrate a joint DOD standard 4-D weather database and common application interfaces to support current and future C4ISR systems. Initiate a sensitivity capability in IWEDA to forecast the timing of the changes expected in IWEDA weather impact status for each component system. Integrate automated mission inputs into IWEDA from ABCS digital OP-ORD information from the JCDB or other sources. Integrate an acoustics propagation TDA into IMETS. Complete integration of IMETS Weather Analysis into GCCS.
- 373 Develop a capability to embed nowcast processing into IMETS client applications to account for current local conditions. Implement model for weather effects on illumination to include cloud and low visibility effects on flares and nighttime light pollution from cities. Continue enhancements to TAWS-A decision aids.
- 321 Continue upgrade of IMETS interoperability with other BFA systems in compliance with updates from DII COE.
- 552 Continue test and evaluation support for ABCS.
- 59 ABCS Systems Engineering and Integration Efforts

Total 3417

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604726A - Integrated Meteorological Support System

PROJECT
D85

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	1754	1911	3425
Appropriated Value	1771	1911	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-15	0
b. SBIR / STTR	0	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-16	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-8
Current Budget Submit (FY 2003 PB)	1755	1896	3417

<u>C. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA 2 - SSN: BW0021-IMETS	6954	2502	7230	9284	4953	4943	13519	Continue	Continue

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604726A - Integrated Meteorological Support System

PROJECT
D85

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 proved successful in the fielding of Block I IMETS and this strategy is being continued with the Block II program. Current improvement efforts are to incorporate new numerical weather prediction forecasts and products communicated from centralized Air Force Hubs to the individual IMETS. Weather tactical decision aid upgrades and updated forecaster aids are developed to include products from Air Force initiatives. IMETS data and applications are being made accessible to Battlefield Functional Area C4I systems as clients through weather database services 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 has been ported to a laptop computer to respond to requirements for a lighter more flexible IMETS for the highly mobile units. Fielding decision for these IMETS Lights is scheduled for 4QFY02.

<u>E. Schedule Profile</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>
Extend Battlescale Forecast Model (BFM) and Air Force MM5 forecast data resolutions	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Develop/Integrate Visualization 5D program	1-4Q	1-4Q					
Develop common BFM and MM5 Atmospheric Sounding Program (ASP) post processor	1-4Q						
Develop Gridded Met Database on DTSS terrain server and support Joint Common Database products	1-4Q						
Convert emerging weather effects applications to the various IMETS platforms	1-4Q	1-4Q	1-4Q	1-4Q			
Integrated Weather Effects Decision Aid update (client and laptop integration)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Develop TAWS-A decision aids	1-4Q	1-4Q	1-4Q				
Support ABCS/IMETS integration effort	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604726A - Integrated Meteorological Support System	PROJECT D85
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E. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Conduct Combined DT/OT on IMETS Light		2Q					
Milestone III IPR on IMETS Light		3Q					

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	1-4Q	646	1-4Q	1215	1-4Q	Continue	Continue	Continue
b . Weather Applications SW Development and Integration	MIPR	ARL at White Sands Missile Range, NM	4250	438	1-4Q	450	1-4Q	1643	1-4Q	Continue	6781	Continue
c . GFE	MIPR	PM CHS, Fort Monmouth, NJ	210	0		0		0		Continue	Continue	Continue
d . ABCS SE&I	MIPR	Fort Monmouth, NJ	0	0		0		59	1Q	0	59	0
Subtotal:			14876	776		1096		2917		Continue	Continue	Continue

Remarks: Each Task order issued using the GSA Schedule is independent of others and of relatively short term.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604726A - Integrated Meteorological Support System

PROJECT
D85

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, NJ	610	240	1-4Q	200	1-4Q	200	1-4Q	Continue	Continue	Continue
b . Program Management Support	MIPR	PMO Intel Fusion, Fort Belvoir VA	892	200	1-4Q	200	1-4Q	200	1-4Q	Continue	Continue	Continue
Subtotal:			1502	440		400		400		Continue	Continue	Continue

Remarks: MIPRs are used to pay for work by other government organizations and are issued incrementally contiguous with the fiscal year.

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. Huachuca, AZ	300	239	1Q	100	1Q	100	1Q	Continue	Continue	Continue
b . Operational Testing	MIPR	ATEC, VA	252	300	1Q	300		0		Continue	Continue	Continue
Subtotal:			552	539		400		100		Continue	Continue	Continue

Remarks: MIPRs are used to pay for work by other government organizations and are issued incrementally contiguous with the fiscal year.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604726A - Integrated Meteorological Support System

PROJECT
D85

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:			16930	1755		1896		3417		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604738A - JSIMS Core Program						PROJECT J11		
COST (In Thousands)		FY 2001 Actual	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	30727	24230	27382	24033	25420	28552	0	0

A. Mission Description and Budget Item Justification: 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 transferred 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 2001 Accomplishments:

Program funded in Joint Staff PE 0902740J.

FY 2002 Planned Program

- 6631 Software Development for the JSIMS Joint Models and C4I adaptor by the Joint Development Agent.
- 428 Test and Evaluation Activity Support.
- 6134 Research and development support services for JSIMS Integration.
- 3200 Government engineering support services for JSIMS Integration.
- 14334 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 30727

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604738A - JSIMS Core Program

J11

FY 2003 Planned Program

- 4853 Software Development for the JSIMS Joint Models and C4I adaptor by the Joint Development Agent.
- 1000 Test and Evaluation Activity Support.
- 5425 Research and development support services for JSIMS Integration.
- 4429 Government engineering support services for JSIMS Integration.
- 8523 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 24230

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY 2002 PB)	0	30985	24083
Appropriated Value	0	30985	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reduction	0	-258	0
Adjustments to Budget Years Since FY 2002 PB	0	0	147
Current Budget Submit (FY 2003 PB)	0	30727	24230

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604738A - JSIMS Core Program

PROJECT
J11

<u>C. Other Program Funding Summary</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 - Joint Models and C4I Adaptor Maintenance for JSIMS by the Joint Development Agent.	0	685	3260	2800	2800	2800	2800	0	0
OMA - Common Component Maintenance for JSIMS software support.	0	2151	2679	2625	1716	2224	1831	0	0
OMA - Alliance Software Support Facility for Baseline Integration/Upgrades.	0	4364	2361	2575	3484	2776	3569	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.

<u>E. Schedule Profile</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 1							
Federation Integration Event 4		1Q					
Federation Integration Event 5		2Q					
Systems Test and Verison Release Milestone (version 1.0)		3Q					
System Functional Assessment		1Q					
JSIMS Functional Assessment/OT Event Assessment		3Q					
DT/OT		3-4Q	1Q				
IOC/MOT&E Event			2Q				
Full Rate Production			4Q				
Block 2							
Milestone B, Block 2		4Q					
Version Release Milestone 2.0 (VRM 2.0)				2Q			

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604738A - JSIMS Core Program

PROJECT
J11

<u>E. Schedule Profile (continued)</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 3							
Version Release Milestone 3.0 (VRM 3.0)					4Q		
Version Release Milestone 4.0 (VRM 4.0)							2Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604738A - JSIMS Core Program

PROJECT
J11

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	0	0		6631	1-4Q	4853	1-4Q	Continue	Continue	Continue
b . Common Component Development	MIPR	Various	0	0		14334	1-4Q	8523	1-3Q	Continue	Continue	Continue
Subtotal:			0	0		20965		13376		Continue	Continue	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	0	0		849	1Q	849	1Q	Continue	Continue	Continue
b . Systems R&D Development Support	FFRDC/CPF F	Mitre Corp., McLean, VA	0	0		2915	1Q	2821	1Q	Continue	Continue	Continue
c . Government Engineering Support	MIPR	Various	0	0		2469	1-2Q	2804	1-2Q	Continue	Continue	Continue
Subtotal:			0	0		6233		6474		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604738A - JSIMS Core Program

PROJECT
J11

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 & Evaluation	MIPR	AFOTEC, Kirkland AFB NM	0	0		428	2-3Q	1000	1-4Q	Continue	Continue	Continue
Subtotal:			0	0		428		1000		Continue	Continue	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	Various	0	0		2225	1-4Q	2515	1-4Q	Continue	Continue	Continue
b . Travel/Utilities/Misc.	MIPR	Navy, Orlando, FL	0	0		876	1-4Q	865	1-4Q	Continue	Continue	Continue
Subtotal:			0	0		3101		3380		Continue	Continue	Continue

Project Total Cost:			0	0		30727		24230		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604739A - Integrated Broadcast Service					PROJECT 702			
COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
702	CIBS-M (TIARA)	6005	0	0	0	0	0	0	0	14729

A. Mission Description and Budget Item Justification: The Integrated Broadcast Service (IBS) is the worldwide, DoD standard network for transmitting tactical and strategic intelligence and targeting data within a common format 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 JTT program leverages to the maximum extent possible, early tech base efforts initiated by the National Reconnaissance Office (NRO). These efforts will continually increase the reliability of the JTT/CIBS-M while reducing the size of the JTT family of terminals. For those efforts which show promise, the management control will transition to the JTT Joint Program Office (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 JTT equipment, to train, equip and support the warfighter resulting with improved Joint Readiness and Interoperability.

FY 2001 Accomplishments:

- 2103 IBS Common Message Format (CMP) and Crypto Implementation
- 554 JTT Control Client (JCC) Enhancements and Defense Information infrastructure Common Operating Environment (DII COE) from level 5 to level 7 compliance for the JCC and DITSCAP Certification in support of Block 2.5
- 392 Space Warfare Center Support for Validation and Throughput Testing of JTT.
- 923 Preparation and Coordination in support of Initial Operational Test & Evaluation.
- 651 Development/Technical Testing (to include Reliability Growth).
- 713 Host Platform Integration Support for Other Services.
- 669 Computer Based Operational Trainer (CBOT), Modeling and Simulation in support of Operational Training.

Total 6005

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604739A - Integrated Broadcast Service

PROJECT
702

FY 2002 Planned Program

Continuation of this program is funded under Program Element 0603850A, Project 472.

FY 2003 Planned Program

Continuation of this program is funded under Program Element 0603850A, Project 472.

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	6005	0	0
Appropriated Value	6060	0	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 Reduction	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-55	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	0
Current Budget Submit (FY 2003 PB)	12010	0	0

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604739A - Integrated Broadcast Service

PROJECT
702

<u>C. Other Program Funding Summary</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>
V29600 JTT/CIBS-M (Tiara)	6509	18700	4824	9477	6133	10519	0	0	79970
PE 0603850A, Project 472	0	1968	1962	1948	1935	0	0	0	7813

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. A competitive FFP contract was awarded in FY98 consisting of 9 option awards for JTT and CIBS-M which includes a 10 year warranty. The current acquisition strategy is further addressed under Program Element 0603850A, Project 472.

<u>E. Schedule Profile</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>
Host Platform Integration Support for Other Services	1-4Q						

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - Eng								
COST (In Thousands)		FY 2001 Actual	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		15857	17088	26978	26672	30812	31202	67585	0	236042
126	FAAD C2 ED	7880	6096	10522	12113	10921	12665	40239	0	115065
146	AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)	7977	10992	16456	14559	19891	18537	27346	0	120977

A. Mission Description and Budget Item Justification: The Forward Area Air Defense Command, Control, and Intelligence (FAAD C2I) System provides critical, automated threat aircraft, cruise missile and unmanned aerial vehicle (UAV) Battle Management/Command, Control, Communications, Computers 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.

These systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604741A - Air Defense Command, Control and Intelligence - Eng

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	16310	18233	17355
Appropriated Value	16462	17233	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-145	0
b. SBIR / STTR	-454	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-151	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	9623
Current Budget Submit (FY 2003 PB)	15857	17088	26978

FY02 decrease is the net result of a \$2.2M decrease for excess growth and a \$1.2M increase for ADAD for Avenger (HAC).

FY03 increase (\$9.623M) attributed to additional developmental and test requirements for both Block III and AMDWS software.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - En	PROJECT 126
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COST (In Thousands)	FY 2001 Actual	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	7880	6096	10522	12113	10921	12665	40239	0	115065

A. Mission Description and Budget Item Justification: The Forward Area Air Defense Command, Control, and Intelligence (FAAD C2I) System provides critical, automated threat aircraft, cruise missile and unmanned aerial vehicle (UA V) Battle Management/Command, Control, Communications, Computers 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). This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 5000 Continue Block III software engineering and development for Second Digital Division (SDD), IBCTs, III Corps, FFCB2 co-host, and minimum BVRE capabilities.
 - 2584 Continue ABCS FFCB2 and CHS integration and testing for Active and Reserve Army requirements; conduct digitization integration with FDD for DCX II, III (Digitized) Corps, IBCTs in conjunction with Army Transformation.
 - 100 Complete Critical Design Review for Block III, III (Digitized) Corps and SDD.
 - 196 ABCS SE&I
- Total 7880

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604741A - Air Defense Command, Control and
Intelligence - En**

PROJECT

126**FY 2002 Planned Program**

- 4656 Continue Block III software engineering and development for FDD DCX2, III (Digitized) Corps, IBCTs and SDD.
- 1440 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 6096

FY 2003 Planned Program

- 6638 Continue Block III software engineering and development for III (Digitized) Corps, IBCTs and SDD
- 3734 Continue ABCS, FBCB2 and CHS integration and testing for Active and Reserve Army units; continue digitization integration for III (Digitized) Corps and IBCTs in support of Army Transformation and SW security accreditation.
- 150 ABCS SE&I

Total 10522

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intelligence - En

PROJECT
126

<u>B. Other Program Funding Summary</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 64820.DE10 - Sentinel GBS	12911	5119	0	0	0	0	0	0	23090
OPA 2, WK5053 - Sentinel GBS	23944	1872	31	0	0	0	0	0	74145
OPA 2, WK5057 - Sentinel MODS	0	31442	26519	18362	14202	14361	14492	Continuing	Continuing
OPA 2, AD5050 - FAAD C2	32088	8832	24779	34986	32883	34611	37344	Continuing	Continuing
OPA 2, AD5090 - Mods FAAD C2	0	0	0	0	0	0	0	0	7770
OPA 2, AD5070 - Air and Missile Defense	4779	10220	9750	13220	6172	7057	28857	Continuing	Continuing
Spares (BS9702) - FAAD C2	487	460	558	752	765	899	917	Continuing	Continuing
Spares (BS9732) - Sentinel GBS	1595	2036	0	0	0	0	0	0	7472

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>	<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>
Preliminary/Critical Design Review	3Q		1Q		3Q		
System Certification Test	3Q		3Q			4Q	
First Unit Equipped - Objective System						3Q	
Contract Award, BLK IV							3Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intelligence - En

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	176461	0
b . TRW, BLK II	SS/CPIF	Dominquez Hills, CA	32206	0		0		0		0	32206	0
c . TRW, BLK III	SS/CPIF	Dominquez Hills, CA	52751	4815	1Q	4656	1Q	6638	1Q	Continue	Continue	0
d . TRW	SS/T&M	Dominquez Hills, CA	6317	320	1Q	254	1Q	857	1Q	Continue	Continue	0
e . Matrix (RDEC)	MIPR	Huntsville, AL	6288	1315	2Q	360	2Q	1096	2Q	Continue	Continue	0
f . Sentinel GBS	MIPR	Huntsville, AL	3791	0		0		0		0	3791	0
g . CECOM	MIPR	Ft. Monmouth, NJ	1200	0		0		0		Continue	Continue	0
h . JTIDS	MIPR	Ft. Monmouth, NJ	6000	0		0		0		Continue	Continue	0
i . In-house/Govt Spt	Various	Various	12207	994	2Q	441	2Q	1295	2Q	Continue	14937	0
j . ABCS SE&I	MIPR	Ft Monmouth, NJ	0	196	1Q	0		150	1Q	0	346	0
Subtotal:			297221	7640		5711		10036		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - En	PROJECT 126
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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	Various	Huntsville, AL	11029	0		195	1-4Q	199	1-4Q	Continue	Continue	0
Subtotal:			11029	0		195		199		Continue	Continue	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	MIPR	Ft Bliss, OK	10016	25	1Q	50	2Q	91	2Q	Continue	Continue	0
b . RTTC	MIPR	WSMR, NM	2000	215	2Q	140	2Q	196	2Q	Continue	Continue	0
Subtotal:			12016	240		190		287		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604741A - Air Defense Command, Control and Intelligence - En

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
			0	0		0		0		0	0	0
Subtotal:												

Remarks: Not Applicable

Project Total Cost:			320266	7880		6096		10522		Continue	Continue	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - En						PROJECT 146		
COST (In Thousands)	FY 2001 Actual	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)	7977	10992	16456	14559	19891	18537	27346	0	120977	

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 Battle Management Command, Control, Communications, Computers and Intelligence (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 2001 Accomplishments:

- 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
 - 1347 Conduct AMDPCS sheltered subsystems configuration engineering and development
 - 147 ABCS SE&I
- Total 7977

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604741A - Air Defense Command, Control and
Intelligence - En**

PROJECT

146**FY 2002 Planned Program**

- 5313 Continue AMDWS software engineering and development for FDD, III (Digitized) Corps, SDD, AMD family of systems, JTAMD family of systems (FOS), JTAMD FOS integration
- 2470 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
- 2230 Continue AMDPCS sheltered subsystems configuration engineering and development, SIAP concept analysis; SIAP concept and analysis
- 207 ABCS SE&I

Total 10992

FY 2003 Planned Program

- 10004 Continue AMDWS software engineering and development for III (Digitized) Corps, SDD, AMD FOS, JTAMD FOS integration and development of AMDPCS Brigade Sheltered Subsystems for III Corps.
- 2080 Continue ADSI software engineering and development for III (Digitized) Corps, SDD, AMD FOS, JTAMD FOS integration
- 805 Continue software systems certification testing; continue Army and Joint integration and interoperability assessments
- 3302 Continue AMDPCS sheltered subsystems configuration engineering, development, test and evaluation; SIAP engineering and analysis
- 265 ABCS SE&I

Total 16456

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - En	PROJECT 146
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<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA, AD 5070 - AMDPCS	4779	10220	9750	13220	6172	7057	28857	Continuing	Continuing

C. Acquisition Strategy: The acquisition strategy relies on non-development items (NDI) and evolutionary software development to rapidly meet the demands of air defense battle management command, control, communications, computers, and intelligence (BM/C4I) requirements and to keep pace with automated information technologies. The concept of evolutionary software development will be accomplished in a series of AMDWS and ADSI Block releases and upgrades. AMDPCS is being developed for both the Army's Active and Reserve components.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Systems Certification Testing - AMDWS/ADSI/AMDPCS	3Q	4Q	4Q	4Q			4Q
AMDWS Software Release	3Q	3Q	3Q		4Q		4Q
AMDWS Software Certification	2-4Q	3-4Q	3-4Q			2-4Q	
ADSI Software Release		3Q		3Q		3Q	
ADSI Software Certification	1-3Q		1-3Q		1-3Q	3Q	1-3Q
AMDPCS System-First Unit Equipped (ADA Brigade)			4Q				
AMDPCS System -First Unit Equipped (AAMDC)				4Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604741A - Air Defense Command, Control and Intelligence - En

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/AMDPCS	SS/CPIF	Huntsville, AL	3289	4076	1Q	5313	1Q	10004	1Q	Continue	Continue	0
b . APC, ADSI	SS/CPIF		0	500	2Q	2470	1Q	2080	1Q	Continue	Continue	0
c . Misc Support	Various	Various	487	1375	2Q	1291	2Q	1284	2Q	Continue	Continue	0
d . MATRIX (RDEC)	MIPR	Ft Monmouth, NJ	606	1449	2Q	1037	2Q	2135	1Q	Continue	Continue	0
e . CECOM	MIPR	Ft Monmouth, NJ	0	196	1Q	384	1Q	392	1Q	Continue	Continue	0
f . ABCS SE&I	MIPR	Ft Monmouth, NJ	0	147	1Q	207	1Q	265	1Q	0	619	0
Subtotal:			4382	7743		10702		16160		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intelligence - En

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
			0	0		0		0		0	0	0
Subtotal:												

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, AZ	93	75	2Q	125	1Q	128	1Q	Continue	Continue	0
b . Interoperability Assessment	MIPR	Various	0	159	2Q	165	1Q	168	1Q	Continue	Continue	0
Subtotal:			93	234		290		296		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - En	PROJECT 146
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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
			0	0		0		0		0	0	0
Subtotal:												

Remarks: Not Applicable

Project Total Cost:			4475	7977		10992		16456		Continue	Continue	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT								
COST (In Thousands)	FY 2001 Actual	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	65613	53294	31297	10691	9231	7312	Continuing	Continuing
361 INTELLIGENCE SIMULATION SYSTEMS	0	4165	7518	741	1241	1277	1276	Continuing	Continuing
362 WARFIGHTER SIMULATION	0	61448	45776	30556	9450	7954	6036	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element funds the engineering development of constructive and wargame simulations used to realistically train commanders and their battlestuffs on today's complex battlefield conditions. Project 361 funds the engineering development of systems to train Army military intelligence analysts. In FY03, 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 362, Warfighters' Simulation (WARSIM) develops the Army's premier wargame simulation for training leaders and battlestuffs 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) for full logistics function. 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 FY03 funding supports the completion of software models for WARSIM Version 2.0 and continues development of WARSIM Version 3.0. This system supports the Objective path of the Transformation Campaign Plan (TCP). Note that these projects transferred beginning in FY02 from PE 604715A, Projects 241 and 396.

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	0	66164	47051
Appropriated Value	0	66164	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-551	0
Adjustments to Budget Years Since FY2002 PB	0	0	6243
Current Budget Submit (FY 2003 PB)	0	65613	53294

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604742A - CONSTRUCTIVE SIMULATION SYSTEMS
DEVELOPMENT**

This Program Element was established and the program funding transferred from PE 0604715A, Projects 241 and 396 in FY02.

FY03 additional funds (\$6,243M) provided by the Army supports the Intelligence Electronic Warfare (IEW) Tactical Proficiency Trainer (IPT) in project 361.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	PROJECT 361
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COST (In Thousands)	FY 2001 Actual	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	4165	7518	741	1241	1277	1276	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project funds the engineering development of systems to realistically train Army military intelligence analysts. In FY03, 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 2001 Accomplishments:

Program funded under PE 0604715A, proj 241.

FY 2002 Planned Program

- 2432 Continue development of IEWTPT.
- 517 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 4165

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604742A - CONSTRUCTIVE SIMULATION
SYSTEMS DEVELOPMENT**

PROJECT

361

FY 2003 Planned Program

- 6273 Continue development of IEW TPT.
- 420 Continue early user interface at Ft. Huachuca for continuous user feedback.
- 304 Continue integration of IEWTPT with WARSIM/WIM.
- 115 Continue Security accreditation.
- 406 Developer/Operator/Maintainer training.

Total 7518

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
**0604742A - CONSTRUCTIVE SIMULATION
 SYSTEMS DEVELOPMENT**

PROJECT
361

<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA3, Appropriation NA0101, NSTD, Manuever/Close Combat	105801	77730	61488	62363	200097	115517	95505	Continuing	Continuing
RDTE, PE 0604715, Project 241	48899	27685	42446	61239	51787	39514	48107	Continuing	Continuing

C. Acquisition Strategy: Competitive development based on performance specifications.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
IEWTPT CONTRACT AWARD		1Q	1Q	1Q	1Q	1Q	1Q
IEWTPT Milestone C				2Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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		2852	1Q	6273	1Q	Continue	Continue	Continue
Subtotal:			0	0		2852		6273		Continue	Continue	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		306	1Q	345	1Q	Continue	Continue	Continue
b . IEWTPT Other Support Costs	Multiple	Various	0	0		136	1Q	150	1Q	0	286	0
Subtotal:			0	0		442		495		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604742A - CONSTRUCTIVE SIMULATION SYSTEMS

361

DEVELOPMENT

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	200	1Q	Continue	Continue	Continue
Subtotal:			0	0		180		200		Continue	Continue	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		691	1Q	550	1Q	Continue	Continue	Continue
Subtotal:			0	0		691		550		Continue	Continue	Continue

Project Total Cost:			0	0		4165		7518		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	PROJECT 362
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COST (In Thousands)	FY 2001 Actual	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	61448	45776	30556	9450	7954	6036	Continuing	Continuing

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 battlestuffs 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 FY03 funding supports the completion of software models for WARSIM Version 2.0 and continues development of WARSIM Version 3.0.

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

FY 2001 Accomplishments:

Program funded under PE 0604715A, projects 241 and 396.

FY 2002 Planned Program

- 40660 Complete the software development, integration and release of WARSIM Build III (IOC), Increments 4 & 5; continue software development and integration of WARSIM Build III, increment 6.
- 6388 Continue software development, integration and release of WARSIM Intelligence Model (WIM) within JSIMS and WARSIM Version 1.0.
- 6152 Develop and integrate JSIMS Common Component Work Station (CCWS) and system Technical Control improvements.
- 8248 Procure additional equipment needed for the Operational Test Corps/Div suite for National Simulation Center and the Brigade/Battalion suite for FT Hood, which will support the JSIMS multi-service operational test event.

Total 61448

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604742A - CONSTRUCTIVE SIMULATION
SYSTEMS DEVELOPMENT**

PROJECT

362**FY 2003 Planned Program**

- 34684 Complete the software development and integration of WARSIM Build III (IOC), Increment 6; continue software development and integration of WARSIM Build III, increment 7.
- 2787 Procure balance of the equipment needed for the Operational Test Corps/Div suite for National Simulation Center and the Brigade/Battalion suite for FT Hood, which will support the JSIMS multi-service operational test event.
- 2370 Continue software enhancements, integration and release of WARSIM Intelligence Model (WIM) within JSIMS and WARSIM Version 1.0.
- 5935 Develop JSIMS common component work station and system technical control improvements.

Total 45776

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604742A - CONSTRUCTIVE SIMULATION
SYSTEMS DEVELOPMENT

PROJECT
362

<u>B. Other Program Funding Summary</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,A 0604715A Non system Training Devices Engineering Development, 241	48899	27685	42446	61239	51787	39514	48107	Continuing	Continuing
RDTE,A 0604715A Non system Training Devices Engineering Development, 396	19717	0	0	0	0	0	0	0	32035
OPA3 Appropriation NA0100, Training Devices, Nonsystem	115866	125503	11162	154409	286731	169468	151440	Continuing	Continuing

This PE was established and funding transferred from PE 0604715A, 241 and 396. 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>	<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 WARSIM System Development Contract		1Q	1Q	1Q	1Q	1Q	1Q
Award WIM System Development Contract		1Q					
Award WIM System Software Support Contract		2-3Q	2Q	2Q	2Q	2Q	2Q
Army Functional Assessments		2-3Q	1Q	2Q	2Q	2Q	
WARSIM/JSIMS Version 1.0 Release		3Q					
WARSIM /JSIM joint functional assessment		3Q					
Milestone C/System Materiel Release			1Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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		31992	1Q	25219	1Q	Continue	Continue	Continue
b . WIM EMD	C/CPAF	Veridian Inc, Orlando FL	0	0		6130	1Q	0	1Q	Continue	Continue	Continue
c . WIM EMD (Enhancements/Integrations)	TBD	TBD	0	0		0	2-3Q	3370	2Q	Continue	Continue	Continue
d . JSIMS CCWS and Tech Control	C/CPAF	Lockheed Martin Info Sys, Orlando	0	0		6152	1Q	5935	1Q	0	12087	0
Subtotal:			0	0		44274		34524		Continue	Continue	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 & Tech Spt	C/CPFF	MITRE FFRDC	0	0		971	1Q	970	1Q	Continue	Continue	Continue
b . Data Mgt Repository	C/CPFF	Veridian, Orlando FL	0	0		316	1Q	0		0	316	0
c . Software Engineering	C/CPFF	AST, Orlando FL	0	0		1750	1Q	1028	1Q	Continue	Continue	Continue
d . Functional Description of the Battlespace	Multiple	Various	0	0		4700	1Q	2930	1Q	Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604742A - CONSTRUCTIVE SIMULATION SYSTEMS

362

DEVELOPMENT

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
e . WARSIM IPT	Multiple	Various	0	0		1849	1Q	1200	1Q	Continue	Continue	Continue
f . WIM Support	TBD	TBD	0	0		1100		1100	2-3Q	0	2200	0
Subtotal:			0	0		10686		7228		Continue	Continue	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	845	1Q	Continue	2659	Continue
b . Verification, Validation and Accreditation	Multiple	Various	0	0		1614	1Q	900	1Q	Continue	2514	Continue
Subtotal:			0	0		3428		1745		Continue	5173	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604742A - CONSTRUCTIVE SIMULATION SYSTEMS

362

DEVELOPMENT

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		2795	1Q	2109	1Q	Continue	Continue	Continue
b . Cost Analysis Support	C/CPFF	Adv Sys Tech, Inc., Orlando FL	0	0		265	1Q	170	1Q	Continue	Continue	Continue
Subtotal:			0	0		3060		2279		Continue	Continue	Continue
Project Total Cost:			0	0		61448		45776		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development

COST (In Thousands)	FY 2001 Actual	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	12466	13174	11839	12274	10253	10210	10184	Continuing	Continuing
L59 DIAGNOST/EXPERT SYS DE	3381	5227	3729	3752	3740	4056	4049	Continuing	Continuing
L65 TEST EQUIPMENT DEVELOPMENT	2907	974	978	1070	1163	1195	1193	Continuing	Continuing
L66 EMBEDDED DIAGNOSTICS/PROGNOSTICS DEVELOPMENT	6178	6973	7132	7452	5350	4959	4942	Continuing	Continuing

A. Mission Description and Budget Item Justification: Provides for the development and testing of calibration equipment, general-purpose test equipment, off-platform diagnostic/prognostic equipment, and embedded diagnostics technology and software to support the increasingly complex electronics of Army weapon systems. The program focuses on commercial state-of-the-art test technologies common to multiple weapon platforms; thereby, minimizing the cost of troubleshooting and maintenance in the field. Provides for the development and evolution of general-purpose automatic test/diagnostic equipment and system enhancements 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 weapon and combat support systems. This program also provides for the Army's participation in development of a Joint Service Automatic Test System (ATS) architecture (NxTest). The Joint Service system will preclude proliferation of Service-specific ATSS in a theater and with a goal to reduce Department of Defense equipment, personnel, and funding burdens by allowing all Services' test program sets to execute on common test system architecture. 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. Provides for the development of a rapidly deployable calibration set with emphasis on digital electronics and tailored to support Army field units. This calibration set will alleviate the serious deployability and survivability shortfalls in the current systems, and will continue with a preplanned product improvement program to provide for continuous upgraded capabilities. Also, provides for the development of expert systems and artificial intelligence applications for the Army Diagnostics Improvement Program to support the horizontal technology integration of self-diagnostic technology in Army weapon systems. The goal of embedding diagnostics is to reduce the logistical burden and improve readiness through minimizing the need for external testers and to improve the troubleshooting abilities of soldiers in the field. These projects support the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	12837	11582	12006
Appropriated Value	12956	13282	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-108	0
b. SBIR / STTR	-371	0	0
c. Omnibus or Other Above Threshold Reductions (Inflation)	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-119	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-167
Current Budget Submit (FY 2003 PB)	12466	13174	11839

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604746A - Automatic Test Equipment Development				PROJECT L59	
COST (In Thousands)	FY 2001 Actual	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	3381	5227	3729	3752	3740	4056	4049	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project funds development of general-purpose automatic test/diagnostic equipment and system enhancements. 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 weapon and combat support systems. The project provides 1) the improvement of general-purpose automatic test equipment to meet the new Army systems' testing and technological requirements; 2) market surveys of commercially available test equipment, methods, and procedures to determine applicability to Army requirements; 3) the development and validation of test and diagnostic software; and 4) the Army's participation in the Joint Services NxTest Technical Working Group. This project supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 1039 Evaluated new hardware upgrades for the Integrated Family of Test Equipment (IFTE).
- 408 Conducted test program set compatibility testing in preparation for the Electro-Optics Test Facility customer test.
- 934 Developed and evaluated software applications for the IFTE.
- 1000 Prepared Army's requirements for incorporation of development efforts on a Department of Defense (DoD) joint service automatic test system.

Total 3381

FY 2002 Planned Program

- 1525 Evaluate hardware enhancements for Electro-Optic Test Facility (EOTF).
- 775 Develop new software test applications for the IFTE.
- 117 Commence prototype development of a more rapidly deployable automatic test system.
- 1430 Conduct Electro-Optics Test Facility customer test.
- 505 Initiate prototype of interconnecting device in support of IFTE.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604746A - Automatic Test Equipment Development

PROJECT

L59**FY 2002 Planned Program (Continued)**

- 875 Evaluate commercial automatic test equipment for Army systems.

Total 5227

FY 2003 Planned Program

- 866 Evaluate new electro-optic technologies for the Integrated Family of Test Equipment (IFTE).
- 1062 Develop and evaluate new software applications for the IFTE.
- 776 Continue development for a rapidly deployable automatic test system.
- 525 Continue evaluation of commercial ATE for future Army systems.
- 500 Initiate development of Electro-Optic Test Facility training device.

Total 3729

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development

PROJECT
L59

<u>B. Other Program Funding Summary</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>
OPA3, MB4000, Integrated Family of Test Equipment (IFTE)	67754	62956	59596	33632	31049	83460	89484	Continuing	Continuing

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, Test, Measurement, and Diagnostic Equipment and are focused on ensuring maximum use of commercially available technologies and equipment to satisfy the Army's automatic 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 supporting the Electro-Optics Test Facility preplanned product improvement are being completed under a sole source contract awarded to the prime contractor for the system. The Army is participating with the other services in the development of a DoD standard automatic test system. The Army requirement is stated in the Integrated Family of Test Equipment operational requirements document. This developmental effort consists of cooperative in-house and competitive contractual action. The Army's efforts are coordinated with the Joint Service NxTest Technical Working Group.

<u>D. Schedule Profile</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>
IFTE ORD Update Approval (2Q FY2000)							
Complete EOTF Customer Test		3-4Q					
EOTF Type Classification-Standard/Materiel Release Approval			4Q				
EOTF Initial Operational Capability				1Q			

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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	704	2-4Q	1525	2-3Q	866	2-3Q	Continue	Continue	0
b . Software Development	SS/CPFF	Northrop Grumman, Rolling Meadows, IL	1716	297	1-3Q	285	2-3Q	200	2-3Q	Continue	Continue	0
c . Systems Engineering	Various	Various	35699	996	1-4Q	572	1-4Q	462	1-4Q	Continue	Continue	0
d . Software Development	Various	Various	24115	410	1-4Q	490	1-4Q	776	1-4Q	Continue	Continue	0
e . Testing	Various	Various	4303	200	1-4Q	1430	1-4Q	500	1-4Q	Continue	Continue	0
f . Support Equipment	Various	Various	75	0		0		0		Continue	Continue	0
g . Government Engineering	Various	Various	7270	371	1-4Q	400	1-4Q	400	1-4Q	Continue	Continue	0
Subtotal:			76403	2978		4702		3204		Continue	Continue	0

Remarks: Test and evaluation costs are included as part of the product development costs.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	105	1-4Q	200	1-4Q	200	1-4Q	Continue	Continue	0
b . Integrated Logistics Development	Various	Various	1016	0		0		0		Continue	Continue	0
c . Training Plans/Material	Various	Various	214	0		0		0		Continue	Continue	0
d . Technical Publications	Various	Various	625	0		0		0		Continue	Continue	0
Subtotal:			2717	105		200		200		Continue	Continue	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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	Various	Various	6952	298	1-4Q	325	1-4Q	325	4Q	Continue	Continue	0
Subtotal:			6952	298		325		325		Continue	Continue	0
Project Total Cost:			86072	3381		5227		3729		Continue	Continue	0

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604746A - Automatic Test Equipment Development						PROJECT L66		
COST (In Thousands)		FY 2001 Actual	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	6178	6973	7132	7452	5350	4959	4942	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project funds the developmental efforts of the Army Diagnostics Improvement Program (ADIP). The ADIP has three main thrusts: 1) support embedded diagnostics for interim and objective force Army platforms, 2) improve the diagnostics on legacy systems, and 3) develop a prognostic capability through an anticipatory maintenance system. ADIP develops and tests common procedures, software applications, and hardware devices that can be embedded in weapon systems. Included in this effort is a common Health and Usage Monitoring System (HUMS) for Army helicopters. A similar system is being developed for surface-based systems. This project supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 1815 Tested and evaluated an initial generic, helicopter-based Health and Usage Monitoring System (HUMS).
- 120 Initiated helicopter-based anticipatory maintenance data collection.
- 1827 Developed and tested generic embedded diagnostics for ground vehicles.
- 1951 Tested initial predictive maintenance capability for ground vehicles.
- 325 Investigated new embedded diagnostic technologies for adaptation to Army maintenance.
- 140 Coordinated diagnostics technologies/architectures for new systems.

Total 6178

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604746A - Automatic Test Equipment Development

PROJECT

L66

FY 2002 Planned Program

- 1400 Continue to test initial Health and Usage Monitoring System (HUMS).
- 100 Adapt and test the embedded diagnostics for Paladin.
- 2100 Continue evaluation of predictive maintenance operating capability for Brigade Combat Team ground vehicles.
- 2220 Continue helicopter-based anticipatory maintenance data collection and initiate analysis of data.
- 456 Continue investigations of new embedded diagnostics technologies and their application to Army systems.
- 697 Continue development of diagnostic strategies for new systems.

Total 6973

FY 2003 Planned Program

- 1385 Continue to collect and analyze helicopter maintenance data.
- 3600 Adapt and test embedded diagnostics on aviation platforms.
- 903 Integrate predictive maintenance capability into Army logistics systems.
- 672 Continue investigation of new embedded diagnostics technologies and their application to Army systems.
- 572 Continue development of diagnostic strategies for Army systems.

Total 7132

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development

PROJECT
L66

<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA3, N11400, Army Diagnostics Improvement Program	17142	18216	7982	7951	10793	4994	4989	Continuing	Continuing

C. Acquisition Strategy: The ADIP is a Horizontal Technology Integrations (HTI) project for the continuing development and evaluations of maintenance systems, methods, and procedures to improve diagnostic support capabilities for Army weapon systems and for integration of commercial embedded diagnostics technologies into Army maintenance systems. The project is managed by the Product Manager, Test, Measurement, and Diagnostic Equipment (PM TMDE) and is focused on ensuring maximum use of commercial technologies to satisfy the Army's embedded test and diagnostic requirements. PM TMDE coordinates all planning, programming and budgeting efforts with Army Platform PMs. 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)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604746A - Automatic Test Equipment Development

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	1886	1-4Q	3226	1-4Q	4183	1-4Q	Continue	Continue	0
b . Software Development/ Engineering	Various	Various	0	3328	1-4Q	2435	1-4Q	1722	1-4Q	Continue	Continue	0
c . Testing	Various	Various	0	220	1-4Q	287	1-4Q	187	1-4Q	Continue	Continue	0
d . Government Engineering	Various	Various	0	437	1-4Q	464	1-4Q	464	1-4Q	Continue	Continue	0
Subtotal:			0	5871		6412		6556		Continue	Continue	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	46	1-4Q	200	1-4Q	206	1-4Q	Continue	Continue	0
Subtotal:			0	46		200		206		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604746A - Automatic Test Equipment Development

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
			0	0		0		0		0	0	0
Subtotal:												

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	Various	Various	0	261	1-4Q	361	1-4Q	370	1-4Q	Continue	Continue	0
Subtotal:			0	261		361		370		Continue	Continue	0

Project Total Cost:			0	6178		6973		7132		Continue	Continue	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS) - Engin

COST (In Thousands)	FY 2001 Actual	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	19924	20975	21487	21190	14808	21722	20968	Continuing	Continuing
C73 SYNTHETIC THEATER OF WAR	1075	1822	1938	602	321	951	784	Continuing	Continuing
C74 DEVEL SIMULATION TECH	3214	2456	212	329	338	848	910	Continuing	Continuing
C77 INTERACTIVE SIMULATION	1023	2220	0	0	0	2155	2138	Continuing	Continuing
C78 COMPUTER GENERATED FORCES	14612	14477	19337	20259	14149	17768	17136	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element supports the Army's Advanced Simulation Program to enable operational readiness and support the development of concepts and systems for Objective and Interim Force 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. The FY03, 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 FY03, Developmental Simulation Technology, C74 Project line provides minimal management of Simulation-to-C4I interoperability (SIMCI) effort between the models and simulations and tactical C4I Systems.

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604760A - Distributive Interactive Simulations (DIS) - Engin

The FY03, 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 FY03, 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. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	20501	26058	31211
Appropriated Value	20689	21158	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-183	0
b. SBIR / STTR	-577	0	0
c. Omnibus or Other Above Threshold Reductions (Inflation)	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-188	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-9724
Current Budget Submit (FY 2003 PB)	19924	20975	21487

Funds reduced in FY02 (-4.900M) due to program testing delays.
 Funds realigned in FY03 (-\$9.724M) to support higher priority Army requirements.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604760A - Distributive Interactive Simulations (DIS) - Engin				PROJECT C73	
COST (In Thousands)	FY 2001 Actual	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	1075	1822	1938	602	321	951	784	Continuing	Continuing

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 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 2001 Accomplishments:

- 344 Developed the software to link entity-based simulations and simulators, particularly to support Joint Venture and Division Capstone Exercise.
 - 292 Incorporated Warfighter Simulation (WARSIM) software as the primary model and early applications of High Level Architecture (HLA).
 - 277 Continued development of improved C4I fidelity.
 - 162 Verification and validation of software integration.
- Total 1075

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604760A - Distributive Interactive Simulations
(DIS) - Engin**

PROJECT

C73

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.
- 394 Continue development and integrations of HLA protocols.
- 159 Verification and validation of software integration.

Total 1822

FY 2003 Planned Program

- 1000 Continue 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.
- 721 Support Joint Venture and Joint Contingency Force Simulation - Simulation Integration.
- 217 Verification and validation of software integration.

Total 1938

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
**0604760A - Distributive Interactive Simulations
 (DIS) - Engin**

PROJECT
C73

<u>B. Other Program Funding Summary</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>
OPA3, KA6000, Reconfig Simulators	2309	363	0	0	0	0	0	0	2752
OMA, TBIS, 121014	764	1070	1130	577	668	50	0	0	5108

OPA funds in FY01 supported 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 via STOC.

<u>D. Schedule Profile</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 Engr & Integration Contract	1Q	1Q	1Q				
Annual SW Version Release	3Q	3Q	3Q	3Q	3Q	3Q	3Q
Award Architecture Development/Hardware contract		2Q					

FY01 Milestones Completed.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS) -
Engin

PROJECT
C73

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	154	1Q	132	2Q	Continue	Continue	Continue
b . STOW-A/DBST Software Development	Various	Multiple	6081	100	1Q	209	1-3Q	518	1Q	Continue	Continue	Continue
c . Architecture Development	C/CPIF	TBD/STOC Compete	100	129	1Q	388	2Q	474	1Q	Continue	Continue	Continue
Subtotal:			8254	455		751		1124		Continue	Continue	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	315	1Q	295	1Q	Continue	Continue	Continue
Subtotal:			1324	145		315		295		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS) -
Engin

PROJECT
C73

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	Multiple	789	162	4Q	378	1-3Q	0		0	1329	0
Subtotal:			789	162		378		0		0	1329	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	313	1Q	378	1-4Q	519	1Q	Continue	Continue	Continue
Subtotal:			2127	313		378		519		Continue	Continue	Continue

Project Total Cost:			12494	1075		1822		1938		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604760A - Distributive Interactive Simulations (DIS) - Engin				PROJECT C78	
COST (In Thousands)	FY 2001 Actual	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	14612	14477	19337	20259	14149	17768	17136	Continuing	Continuing

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 Semi-Automated Forces (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 FY03 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 2001 Accomplishments:

- 10991 Executed system requirement decomposition, initial architecture design and developed prototype software functionality to provide the initial architecture services and infrastructure, architecture component (editing and data collection tools) and test synthetic environment for OneSAF Version 1.0.

- 2670 Developed software functionality to provide OneSAF with terrain, editing and data collection tools and infrastructure.

- 951 Verified and validated newly developed and integrated software.

Total 14612

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604760A - Distributive Interactive Simulations
(DIS) - Engin**

PROJECT

C78**FY 2002 Planned Program**

- 11489 Continue development of functionality to provide architectural services, components, synthetic environment and infrastructure capable of supporting initial model development.
- 2050 Continue development of life cycle applications and infrastructure enhancements for OneSAF Version 1.0.
- 938 Verification & Validation of newly developed and integrated software.

Total 14477

FY 2003 Planned Program

- 12240 Continue development of life cycle applications and infrastructure enhancements for OneSAF IOC Version 1.0.
- 5769 Develop functionality to represent behaviors, physical models, and communication models for OneSAF.
- 1328 Verification and validation of newly developed and integrated software.

Total 19337

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604760A - Distributive Interactive Simulations (DIS) - Engin	PROJECT C78
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<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OMA, 121014	497	1561	2025	2283	2538	2710	2709	Continuing	Continuing

C. Acquisition Strategy: Development based on performance specifications via multiple Task Orders on competitively selected contracts.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Release OneSAF Testbed (OTB) Version 1.0	1Q						
Award OneSAF Development Task Orders for individual components to meet block requirement	1Q	1Q	1Q	1Q	1Q	1Q	1Q
OneSAF IOC (Version 1.0)					1Q		

FY01 Milestones Completed.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS) -
Engin

PROJECT
C78

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	Science Applications International Corp, Orlando, FL	0	6250	2Q	6323	1-2Q	6696	1-2Q	0	19269	19269
b . Integrated Environment Dev	CPFF	Advanced Systems Technology, Inc., Orlando FL	0	2003	2Q	1670	1-2Q	1000	1-2Q	Continue	Continue	Continue
c . Synthetic Environment Dev	CPFF	Science Applications International Corp, Orlando, FL	0	1196	1-2Q	1000	1Q	2120	1Q	Continue	Continue	Continue
d . Knowledge Acquisition/Knowledge Engineering	CPFF	Aegis Technologies Group, Huntsville, AL	0	1156	2Q	869	1-2Q	1000	1Q	0	3025	3025
e . OneSAF System Development	C/CPFF	Various/STOC	758	1248	1-2Q	1150	1-2Q	1050	1-2Q	Continue	Continue	Continue
f . OneSAF Testbed	C/CPAF	Lockheed-Martin Inc., Orlando, FL	7012	0		0		0		0	7012	7012
g . Model Development	C/CPFF	Various/TBD	0	0		0		3649	1-2Q	Continue	Continue	Continue
Subtotal:			7770	11853		11012		15515		Continue	Continue	Continue

Remarks: New Competitive Contract for OneSAF Development. Each award is DO aga inst CPFF contract.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604760A - Distributive Interactive Simulations (DIS) -
Engin**

C78

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	609	1Q	610	1Q	Continue	Continue	Continue
b . Domain Analysis	Various	Multiple	0	915	1-3Q	815	1-3Q	815	1-3Q	Continue	Continue	Continue
c . Architecture Engr & Tech Spt	C/CPFF	MITRE FFRDC	706	238	1Q	250	1Q	250	1Q	Continue	Continue	Continue
Subtotal:			1451	1623		1674		1675		Continue	Continue	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	478	478
b . OneSAF integration, evaluation and test	C/CPAF	TBD	0	207	1-2Q	300	1-2Q	385	1-2Q	Continue	Continue	Continue
c . OneSAF Verification, Validation & Accreditation	Various	Multiple	0	166	1-2Q	423	1-2Q	652	1-2Q	Continue	Continue	Continue
Subtotal:			478	373		723		1037		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS) -
Engin

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	763	1Q	1068	1Q	1110	1Q	Continue	Continue	Continue
Subtotal:			1022	763		1068		1110		Continue	Continue	Continue
Project Total Cost:			10721	14612		14477		19337		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY
5 - ENG MANUFACTURING DEV

PE NUMBER AND TITLE
0604766A - Tactical Exploitation System/DCGS-A (TIARA)

COST (In Thousands)	FY 2001 Actual	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	57867	59693	56662	60070	48853	42460	42284	0	481793
909 TACTICAL SURVEILLANCE SYSTEMS-ENG DEV (TIARA)	43087	0	239	219	217	210	204	0	158080
957 TACTICAL EXPLOITATION SYSTEM (TES)/DCGS-A (TIARA)	14780	59693	56423	59851	48636	42250	42080	0	323713

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), 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. This program is designated as a DOD Space Program.

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

February 2002

BUDGET ACTIVITY
5 - ENG MANUFACTURING DEV

PE NUMBER AND TITLE
0604766A - Tactical Exploitation System/DCGS-A (TIARA)

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	57884	68205	56556
Appropriated Value	58419	60205	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-512	0
b. SBIR / STTR	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	-17	0	0
e. Rescissions	-535	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	106
Current Budget Submit (FY 2003 PB)	57867	59693	56662

Program Change Summary:
 FY 2002 decrease of \$8.0M to the Tactical Exploitation System (TES) due to program delays and execution.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604766A - Tactical Exploitation System/DCGS-A (TIARA)					PROJECT 957			
COST (In Thousands)		FY 2001 Actual	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)		14780	59693	56423	59851	48636	42250	42080	0	323713

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 907 in FY02 and out.

FY 2001 Accomplishments:

- 750 Provided program management support and upgrades to Semi Automated Imagery Processor (SAIP) activities. This effort was funded under Project D909 in FY 2000.
- 2360 Initiated development of SAIP miniaturization prototype.
- 2544 Completed 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 909 in FY 2000.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604766A - Tactical Exploitation System/DCGS-A
(TIARA)**

PROJECT

957**FY 2001 Accomplishments: (Continued)**

- 9126 Continued 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 909 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 909 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.
- 2691 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 miniaturized 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 59693

FY 2003 Planned Program

- 9000 Continue to ensure that TES has joint interoperability with current and future sensors (FIA).
- 8332 Complete engineering development of TES Basic.
- 8336 Complete engineering development of TES #4 Forward, including integration of existing reusable components (MIDAS) and the purchase and integration of COTs/GOTs GFE.

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604766A - Tactical Exploitation System/DCGS-A
(TIARA)**

PROJECT

957

FY 2003 Planned Program (Continued)

- 8335 Complete engineering development of TES #5 Forward, including integration of existing reusable components (MIDAS) and the purchase and integration of COTs/GOTs GFE.
- 8555 Initiate engineering development of TES #6 Forward, including integration of existing reusable components (MIDAS) and the purchase and integration of COTs/GOTs GFE.
- 666 SAIP enhancements, upgrades, and program support.
- 3740 Continue support to TES/DCGS-A development (Army Topographic Engineering Center (TEC) and FFRDC (Aerospace)).
- 9459 Continue software upgrades and enhancements of TES baseline to fully exploit national and theater capabilities.

Total 56423

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604766A - Tactical Exploitation System/DCGS-A (TIARA)	PROJECT 957
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<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PE 0603766A Project 907	0	16605	16392	17396	16369	15248	16888	Continuing	Continuing
PE 0604766A TENCAP Project 909 (TIARA)	43087	0	239	219	217	210	204	Continuing	Continuing
PE 0305208A (JMIP)	7839	72095	15683	15911	15625	45089	12933	Continuing	Continuing
Other Procurement Army, OPA-2	0	0	0	0	0	0	0	0	0
BZ7315 TENCAP (TIARA)	12735	0	0	0	0	5933	0	0	23019
BZ7316 CIG/SS (JMIP)	2807	2591	2617	2656	2713	999	64753	Continuing	Continuing
BZ7317 Tactical Surveillance System (TIARA)	0	33410	17576	43675	18880	6008	7039	Continuing	Continuing

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.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete development of TES #2 Forward, Main (-)	4Q						
Complete development of TES #3 Main (-)	4Q						
Complete development of TES #3 Forward		4Q					
Complete development of TES-Light prototype		4Q					
Complete development of TES #4 Forward			4Q				
Complete development of TES #5 Forward			4Q				
Complete development of TES BASIC #1			4Q				
Complete development of TES Basic #2-#4				4Q			
Complete development of TES #6 Forward				4Q			
Complete development of TES #2 MAIN(+)						4Q	
Complete development of TES #3 MAIN(+)						4Q	
Complete development of TES Trainer						4Q	

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	2544	2544
b . TES #3 EDM *	SS/CPAF	Northrop Grumman, Linthicum, MD	0	9126	2Q	9572	2Q	0		0	18698	18698
c . TES #4 EDM *	SS/CPAF	Northrop Grumman, Linthicum, MD	0	0		10664	2Q	8336	1Q	0	19000	19000
d . TES #5 EDM *	SS/CPAF	Northrop Grumman, Linthicum, MD	0	0		2691	2Q	8335	2Q	0	11026	11026
e . TES #6 EDM *	SS/CPAF	Northrop Grumman, Linthicum, MD	0	0		0		8555	3Q	0	8555	8555
f . TES Basic	SS/CPAF	Northrop Grumman, Linthicum, MD	0	0		4876	2Q	8332	2Q	0	13208	13208
g . CCRB	SS/CPAF	Northrop Grumman, Linthicum, MD	0	0		9488	2Q	9459	2Q	0	18947	18947
h . SAIP Prototype	SS/CPAF	Northrop Grumman, Linthicum, MD	0	2360	2Q	4500	2Q	660	1Q	0	7520	7520
i . TDL	SS/CPAF	Northrop Grumman, Linthicum, MD	0	0		11850	2Q	9000	2Q	0	20850	20850

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604766A - Tactical Exploitation System/DCGS-A
(TIARA)**

957

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 . TES-L prototype		Northrop Grumman. Linthicum, MD	0	0		2306	2Q	0		0	2306	2306
Subtotal:			0	14030		55947		52677		0	122654	122654

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	2141	1Q	Continue	Continue	Continue
b . Contractor	C/FFP	Litton TASC, Westfields, VA	0	350	2Q	350	2Q	350	2Q	Continue	Continue	Continue
c . FFRDC	OGA	Aerospace Corp, Chantilly, VA	0	0		1255	1Q	1255	1Q	Continue	Continue	Continue
Subtotal:			0	750		3746		3746		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604766A - Tactical Exploitation System/DCGS-A
(TIARA)**

957

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 . Not applicable			0	0		0		0		0	0	0
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 . Not applicable			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			0	14780		59693		56423		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604768A - Brilliant Anti-Armor Submunition (BAT)

COST (In Thousands)	FY 2001 Actual	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	97931	122868	190293	110615	34723	9904	35552	0	1010102
2NT BAT OPERATIONAL TEST	49	71	435	1503	0	0	0	0	4711
687 BAT P3I	67563	122797	189858	109112	34723	9904	35552	0	694029
688 ATACMS BLK II	30319	0	0	0	0	0	0	0	311362

A. Mission Description and Budget Item Justification: The Army Tactical Missile System (ATACMS) Block II with the BAT submunition is a Legacy to Objective Force Weapon System that provides for precision fires for the destruction and disruption of threat forces and weapons from ranges of 35-145 kilometers to prevent them from influencing the maneuver battle. The ATACMS Block II missile system is the only Army system: (1) capable of near term insertion of automatic target recognition to deliver "discriminatory fires" while minimizing collateral damage; (2) through FY 10, capable of overcoming large targeting errors to kill the increasingly prevalent "shoot and scoot" SCUDs and heavy multiple rocket launchers; (3) capable of fire support beyond 70 kilometers against both moving and stationary armored and relocatable high value targets. In the past, the only options to engage these targets were attack helicopters or fixed wing aircraft placing critical resources, particularly air crews, at risk and are limited by inclement weather. The capability of the BAT submunition can obtain similar results 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 BAT pre-planned product improvement (P3I) 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 BAT P3I 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). BAT P3I will conduct Operational Tests (OTs) in FY 04 through FY 05 with the purchase of missile and submunition hardware in FY 02 and FY 03. 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 BAT P3I is the Army's only brilliant munition program and supports the Legacy to Objective Force transition path of the Transformation Campaign Plan (TCP).

*In addition to the above funding, this PE received \$55M in FY03 and \$10M in FY04 to support Cost of War for the Army Tactical Missile System -

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604768A - Brilliant Anti-Armor Submunition (BAT)

Penetrator(TACMS-P).

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	97203	123899	52431
Appropriated Value	98102	123899	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-1031	0
b. SBIR / STTR	-2890	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	3618	0	0
e. Rescissions	-899	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	137862
Current Budget Submit (FY 2003 PB)	97931	122868	190293

FY03 increase funds additional risk reduction and test requirements for BAT P31.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604768A - Brilliant Anti-Armor Submunition (BAT)	PROJECT 687
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COST (In Thousands)	FY 2001 Actual	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	67563	122797	189858	109112	34723	9904	35552	0	694029

A. Mission Description and Budget Item Justification: The BAT P3I is the submunition in the ATACMS Block II missile system, a Legacy to Objective Force Weapon System that provides 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 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). The BAT P3I provides increased capability in inclement weather conditions and against countermeasured targets. The BAT P3I expands the target set and overcomes large target location error. The BAT P3I 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. BAT P3I will conduct Operational Tests (OTs) in FY 04 through FY 05 to support a Full-Rate Production Decision in 3rd Quarter FY 05. The ATACMS Block II with BAT P3I has a very low operation and sustainment cost. The ATACMS Block II missile is fired from the M270A1 launcher and the High Mobility Artillery Rocket system (HIMARS).

The ATACMS Block II missile with BAT P3I fired from the HIMARS is the Army's only brilliant munition program and supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 34355 Continued Seeker Integration and Armor Design Analysis
- 14199 Fabricated and Assembled BAT P3I Test Hardware (47 Submunitions with Seekers, and 19 Seeker Stand Alone Test Articles)
- 10049 Conducted Continuous Captive Flight test, Air Cannon test on High Density Flight Data Recorder (HDFDR), and Purchased Targets for Testing

- 7999 Continued Simulation Analysis to include Hardware-in-the-Loop and Software Integration Lab
- 961 Conducted Trade Studies, CAIV Initiatives, Risk Reduction and System Improvement and Optimization Activities

Total 67563

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development**0604768A - Brilliant Anti-Armor Submunition (BAT)****687****FY 2002 Planned Program**

- 47953 Continue Seeker Integration and Test Analysis for Armor Target Array
- 10831 Complete Fabrication and Assemble BAT P3I Test Hardware for Armor Testing (44 submunitions with Seekers, and 14 Stand alone Test Articles)
- 28071 Develop Items for Pre Production Tests (PPTs), and Development Tests (DTs) (79 Submunitions with Seekers, 4 Seeker Stand Alone Test Articles, and 4 Block II Missile Hardware Kits)
- 25584 Conduct Recoverable BAT Flight Test II, Engineering Design Test I, Munition Verification Test, Purchase CM Kits, and Target Maintenance/Replacement
- 6858 Simulation Analysis to include Hardware-in-the-Loop and Software Integration Lab
- 2999 Inflight Survivability Analysis/Testing/System Improvement
- 501 Trade Studies, CAIV Initiatives, Risk Reduction and System Improvement and Optimization Activities

Total 122797

FY 2003 Planned Program

- 11161 Initiate MRL/TEL Engineering/Design Analysis
- 38060 Complete Seeker Integration and Test Analysis for Armor Target Array
- 20150 Fabricate and Assemble items for PPTs, and DTs (79 Submunitions with Seekers, 4 Seeker Stand Alone Test Articles, and 4 Block II Missile Hardware Kits)
- 52190 Develop Items for OT (7 Missiles and 101 Submunitions)
- 52560 Conduct Cold Region Flight Test, Recoverable BAT III, DVT, PPT1, Common Hardware RBATs and PPTs, and DT1
- 9237 Simulation Analysis to include Hardware-in-the-Loop and Software Integration Lab
- 6002 Inflight Survivability Analysis/Testing/System Improvement
- 498 Trade Studies, CAIV Initiatives, Risk Reduction and System Improvement and Optimization Activities

Total 189858

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604768A - Brilliant Anti-Armor Submunition (BAT) PROJECT
687

<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
ARMY TACMS BLK II, SSN: CA6101	215359	60576	49687	221308	252889	296046	303709	2534366	4315555
ATACMS BLK II Intial Spares, SSN: CA0270	1359	1362	0	0	0	0	0	0	2721

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.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Captive Flight Test (CFT)/Seeker Tests	1-4Q	1-4Q	1-4Q				
Hardware-in-the-Loop Testing	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-3Q	
Recoverable BAT Tests		1-4Q	1-4Q	1Q			
Engineering Development Tests (EDTs)		4Q		1Q			
Design Verification Tests			1Q				
Pre-Production Tests (PPTs)			1-3Q	2Q			
Munitions Verification Test		2Q					
Warhead LFT&E Soft/Target				2Q			
Software FQT		2-3Q					
Envir Stress Test (EST) Prod Qual Tests (PQT)		3Q					
DT System Tests (Block II)			4Q	3Q			
Blk II/P3I BAT Production Cut-In Decision				1Q			
Blk II/P3I BAT Operational Test (OT)-Armor				4Q	1Q		
MRL/TEL OT				4Q	1Q		
Blk II/P3I BAT Continued Production Decision					3Q		
Producibility/Cost Reduction Initiatives					1-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604768A - Brilliant Anti-Armor Submunition (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 . Continuing Development Support	SS-CPIF	Northrop Grumman Corp	189761	46425		88608		121011		115975	561780	0
b . AMCOM Support	PO	RDEC Support*	17644	4804		4417		6235		11834	44934	0
c . Warhead Testing	SS-CPIF	TRW	2849	0		0		0		0	2849	0
d . Missile Integration Test	SS-CPIF	Lockheed	582	1710		6807		18246		20668	48013	0
e . Launcher Support	SS-CPIF	MLRS Launcher Pool	0	0		0		250		1375	1625	0
Subtotal:			210836	52939		99832		145742		149852	659201	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	1967		2100		3100		5370	17557	0
b . Misc Other Gov Act	PO		3284	239		887		1125		250	5785	0
Subtotal:			8304	2206		2987		4225		5620	23342	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604768A - Brilliant Anti-Armor Submunition (BAT)

687

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	3550		2536		5720		16100	29282	0
b . Other Test Activities	PO		13988	6508		11524		24774		11661	68455	0
Subtotal:			15364	10058		14060		30494		27761	97737	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		9698	2360		5918		9397		6058	33431	0
Subtotal:			9698	2360		5918		9397		6058	33431	0

Project Total Cost:			244202	67563		122797		189858		189291	813711	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604770A - Joint Surveillance/Target Attack Radar System						PROJECT 202		
COST (In Thousands)		FY 2001 Actual	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)	28133	8026	4740	4939	6267	6184	5817	0	94898

A. Mission Description and Budget Item Justification: 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 Echelons Above Corps (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. This system supports the legacy transition path of the Transformation Campaign Plan (TCP) and also develops advanced capabilities for incorporation into Army Distributed Common Ground System (DCGS-A) in support of the Objective Force. 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. Future capability includes improved connectivity with the Tactical Exploitation System (TES) and Guardrail Information Node (GRIFN) legacy systems to increase data sharing at the product library/database level. Next step is to develop an early objective capability based on legacy hardware that would improve information transfer and visualization/collaboration. 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. 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 ensures connectivity with both sensors and command and control nodes under a wide range of battlefield scenarios and conditions. As part of the Counter Offensive Force/Counter Attack Corps the 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 that uses the same hardware and software and provides the same functionality as the CGS. The CGS/JSWS 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). Funding in FY03 will provide architecture upgrades facilitating dissemination of CGS products to command and control systems located across multiple echelons and expanding modeling and simulation capabilities in support of unit and staff training.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development**0604770A - Joint Surveillance/Target Attack Radar System****202****FY 2001 Accomplishments:**

- 3235 Developed 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 (CAESAR) Support.
- 2105 Operational Assessment for Block 10 Pre-Planned Product Improvement to CGS V(2).
- 4245 Developed and Supported Enhanced CGS Interoperability Capability for Division Capstone Exercise I and II.
- 7200 Commercial-Off-The-Shelf (COTS) Technology Insertion for the CGS technology relative to modeling & simulation, Digitization, Visualization and Collaborative Tools.
- 4200 Completed Phase 3 of the SCDL System Improvement Program (SIP 3).
- 1884 Integration of SATCOM higher data rate.
- 1423 Enhanced Modeling and Simulation Capabilities.

Total 28133

FY 2002 Planned Program

- 3411 Conduct integration and enhance CGS Collaboration/Data sharing with other tactical processing nodes across Battlefield echelons to support migration to DCGS-A Architecture.
- 2276 Expand Modeling & Simulation capabilities to support unit and staff training via network environment.
- 893 Coalition Aerial Surveillance and Reconnaissance (CAESAR) Support.
- 1446 Enhance Sensor Exploitation, Visualization and Operator assisted tools sets to support migration to DCGS-A Architecture.

Total 8026

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604770A - Joint Surveillance/Target Attack Radar System

PROJECT
202

FY 2003 Planned Program

- 1010 Developmental Test/Operational Test to support simulation based environment.
- 600 Coalition Aerial Surveillance and Reconnaissance (CAESAR) Support.
- 1095 Continue Modeling & Simulation capabilities to support unit and staff training via network environment.
- 2035 Continue integration and enhance CGS Collaboration/Data sharing with other tactical processing nodes across Battlefield echelons to support migration to DCGS-A Architecture.

Total 4740

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	28632	8093	8896
Appropriated Value	28898	8093	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-67	0
b. SBIR / STTR	0	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0
d. Below Threshold Reprogramming	-500	0	0
e. Rescissions	-265	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-4156
Current Budget Submit (FY 2003 PB)	28133	8026	4740

Change Summary Explanation:
 FY2003 - Funds were realigned from this project to support DCGS-A.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604770A - Joint Surveillance/Target Attack Radar System	PROJECT 202
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<u>C. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
BA1080 Joint STARS (TIARA)	65806	21141	8620	8438	0	0	0	0	198845
BS9724 Joint STARS Spares	4765	4308	3265	301	500	0	0	0	18573
1001018A NATO AGS C35	500	0	512	512	611	610	710	Continue	Continue
0305208A Distributed Common Ground System (JMIP)	7839	72095	15683	15911	15625	45089	12933	Continue	Continue
BZ7316 Distributed Common Ground System	2807	2591	2617	2656	2713	999	64753	Continue	Continue
BZ7317 TES (TIARA)	0	33410	17576	43675	18880	6008	7039	Continue	Continue
AZ2000 GUARDRAIL MODS (TIARA) (DCGS-A GRIFN Only)	0	0	0	4966	4953	1098	0	0	11017

D. Acquisition Strategy: The Milestone C 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 functionality into an objective Distributed Common Ground System Army (DCGS-A) is ongoing with Project Manager Signal Warfare (PM SW) and Army Space Program Office (ASPO). CGS is a critical component of DCGS-A Interim and Objective capability.

<u>E. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
SCDL Risk Reduction	1-3Q	1-2Q					
Block 20 P3I Program	1-4Q						
Modeling and Simulation (Participate in Desert Pivot Exercises)	3-4Q	1-4Q	1-4Q				
Interim DCGS-A demonstration at 18th ABC			4Q				
Interim DCGS-A Fielding at III Corp				4Q			
Demonstrations at Division Capstone Exercises I and II	2-4Q	1Q					
Block 10 Operational Assessment	2Q						

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604770A - Joint Surveillance/Target Attack Radar System	PROJECT 202
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E. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
DCGS-A Spiral Development Interim and Objective	4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
CGS Integration into Interim DCSG-A			4Q				
Developmental Test/Operational Test for Block 20			3Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604770A - Joint Surveillance/Target Attack Radar
System

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 . TCDL	CPFF	General Dynamics, Scottsdale, AZ	1645	0		0		0		0	1645	1645
b . SCDL/JSWB Data Link Improvement	C/FP	Cubic Corp, San Diego, CA	11641	4000	4Q	0		0		0	15641	15641
c . Enhanced Sensor Exploitation & Operator Tools/P3I Development	C/FP	General Dynamics, Scottsdale, AZ	10612	0		1325	2Q	0		0	11937	0
d . Modeling & Simulation	C/FP	General Dynamics, Scottsdale, AZ	0	1038	2-4Q	2094	2Q	1007	2Q	Continue	Continue	Continue
e . JSWS Battle Lab Hardware Support	FFP	General Dynamics, Scottsdale, AZ	0	2836	2Q	0		0		0	2836	2250
f . Field Support	T&M	General Dynamics, Scottsdale, AZ	5764	686	3Q	0		0		0	6450	6882
g . Technology Insertion	FFP	General Dynamics, Scottsdale, AZ	0	7000	2Q	0		0		0	7000	7000
h . SATCOM Interface	T&M	General Dynamics, Scottsdale, AZ	0	1733	2Q	0		0		0	1733	0
i . CAESAR Support	C/FP	General Dynamics, Scottsdale, AZ	0	750	2-4Q	822	2Q	552	1Q	Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604770A - Joint Surveillance/Target Attack Radar System

202

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 . CGS Collaboration/Data Sharing	C/FP	General Dynamics, Scottsdale, AZ	0	2899	4Q	3138	2Q	1884	2Q	0	7921	0
Subtotal:			29662	20942		7379		3443		Continue	Continue	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	CECOM	1557	1149	1Q	102	2Q	55	1Q	Continue	Continue	Continue
b . Joint Test Force Support	MIPR	Various	228	200	1Q	92	2Q	55	1Q	Continue	Continue	Continue
Subtotal:			1785	1349		194		110		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604770A - Joint Surveillance/Target Attack Radar System

202

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	6770	6770
b . ORDT	C/T&M	General Dynamics, Scottsdale, AZ	5387	0		0		0		0	5387	5387
c . Block 10 Operational Assessment	T&M	General Dynamics, Scottsdale, AZ	0	1269	2Q	0		0		0	1269	5586
d . Division Capstone Exercise I & II	CPFF	General Dynamics, Scottsdale, AZ	0	3203	2-4Q	0		0		0	3203	4838
e . Spiral Developmental / Interoperability Testing	T&M	General Dynamics, Scottsdale, AZ	0	592	1Q	0		0		0	592	0
f . DT/OT	MIPR	Multiple	0	0		0		929	2Q	0	929	0
Subtotal:			12157	5064		0		929		0	18150	22581

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604770A - Joint Surveillance/Target Attack Radar System

202

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	In House	PM, Common Ground Station	2058	778	1Q	453	1Q	258	1Q	Continue	Continue	Continue
Subtotal:			2058	778		453		258		Continue	Continue	Continue
Project Total Cost:			45662	28133		8026		4740		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604780A - COMBINED ARMS TACTICAL TRAINER (CATT)					
COST (In Thousands)	FY 2001 Actual	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	17784	13531	7579	4775	6413	6404	11869	Continuing	Continuing
571 CLOSE CBT TACT TRAINER	6619	4967	5069	4775	6413	6404	11869	Continuing	Continuing
582 SYNTHETIC ENVIR CORE	11165	8564	2510	0	0	0	0	0	28697

A. Mission Description and Budget Item Justification: The Combined Arms Tactical Trainer (CATT) is a family of combined arms simulation systems designed to support the Army's simulation-based Combined Arms Training Strategy. The initial CATT system is the Close Combat Tactical Trainer (CCTT), which provides the underlying baseline (architecture, terrain databases, After Action Review [AAR], Semi-Automated Forces [SAF], and models/algorithms) for future CATT expansions, pre-planned product improvements and system enhancements. Synthetic Environment 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) that 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 databases and modify the behavior of the computer generated opposing forces, CATT offers a virtually unlimited array of training options to support the Army's many regional contingency missions. The combination of tough field and live fire training and realistic simulation training in CATT is the catalyst to prepare soldiers and their leaders for the uncertainties they will face in an unpredictable world.

This system supports the Objective and Legacy-to-Objective transition paths of the Transformation Campaign Plan (TCP).

FY03 provides an integrated database format for Semi-Automated Forces, implements an improved High Level Architecture (HLA), develops an improved process to convert National Imagery and Mapping Agency (NIMA) data into Synthetic Environment Data Representation Interchange Specification (SEDRIS) format for database creation, and initiates development of Digital AAR and enhancements to the Commander's Integrated Training Tool. 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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
**0604780A - COMBINED ARMS TACTICAL TRAINER
 (CATT)**

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	18328	13645	7597
Appropriated Value	18498	13645	
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-114	0
b. SBIR / STTR	-545	0	0
c. Omnibus or Other Above Threshold Reductions Inflation	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-169	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-18
Current Budget Submit (FY 2003 PB)	17784	13531	7579

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604780A - COMBINED ARMS TACTICAL TRAINER (CATT)					PROJECT 571			
COST (In Thousands)	FY 2001 Actual	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	6619	4967	5069	4775	6413	6404	11869	Continuing	Continuing	

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 battle force is experiencing.

The FY03 funding for Close Combat Tactical Trainer will provide the U.S. Army with an enhancement of the High Level Architecture and the incorporation of a new Synthetic Natural Environment for Semi-Automated Forces.

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

FY 2001 Accomplishments:

- 5050 Developed additional Training Support Packages (TSPs), completed High Level Architecture (HLA) compliance efforts, Pre-Planned Product Improvements (P3I) for After Action Reports (AAR), and Dismounted Infantry (DI) components of CCTT, and other user prioritized items. Started development of Bradley Fire Support Team (BFIST), Army Tactical Command and Control System (ATCCS) and Linux conversion.
 - 821 Maintained support services to the program office.
 - 748 Provided government program management, engineering, technical, contract and continuous operational evaluation support.
- Total 6619

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604780A - COMBINED ARMS TACTICAL
TRAINER (CATT)**

PROJECT

571**FY 2002 Planned Program**

- 3414 Continue development for product improvements for Dismounted Infantry (DI) module, AAR, BFIST, ATCCS, and other prioritized items. Continue conversion to Linux operating system; produce SEDRIS transmittal for CCTT databases.
- 923 Maintain support services to the program office.
- 630 Provide government program management, engineering, technical, contract and continuous operational evaluation support.

Total 4967

FY 2003 Planned Program

- 4469 Integrate new database format for Semi-automated Forces, improve High Level Architecture implementation, develop improved process of getting NIMA data to shorten database schedules.
- 86 Maintain support services to the program office.
- 514 Provide government program management, engineering, technical, contract and continuous operational evaluation support.

Total 5069

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
**0604780A - COMBINED ARMS TACTICAL
 TRAINER (CATT)**

PROJECT
571

B. Other Program Funding Summary	<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>
OPA3, Appropriation NA0170 SIMNET/CCTT	41615	36527	52472	44200	62677	82957	64034	Continuing	Continuing
Operation and Maintenance, Appro. 122015 Support of Oper. Testing (CCTT Portion)	21050	26143	32311	38237	39016	39787	40577	Continuing	Continuing

C. Acquisition Strategy: Competitive cost plus award fee contract for EMD phase. Competitive procurement against performance specifications as part of basic contract.

D. Schedule Profile	<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>
P3I Software/Hardware Insertions	4Q	4Q	4Q	4Q	4Q		
BFIST DELIVERY		2Q					
LINUX DELIVERY		1Q					
DI DELIVERY		2Q					
AAR DELIVERY		2Q					
SEDRIS DATABASES DELIVERY		4Q					
ATCCS Integration			1Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	206891	0
b . Pre-Planned Product Improvements (P3I)	C/CPFF	Lockheed/Martin Orlando, FL	21690	5050	1Q	2914	1Q	4469	1Q	Continue	Continue	Continue
c . Database Development	BAA/CPFF	SAIC, Orlando, FL	4415	0		0		0		0	4415	0
d . SEDRIS DATABASES	STOC/CPAF	TBD	0	0		500	2Q	0		0	500	0
Subtotal:			232996	5050		3414		4469		Continue	Continue	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	821	1Q	923	1Q	86	1Q	Continue	Continue	Continue
Subtotal:			30318	821		923		86		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604780A - COMBINED ARMS TACTICAL TRAINER
(CATT)**

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
			0	0		0		0		0	0	0
Subtotal:												

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	748		630		514		Continue	Continue	Continue
Subtotal:			12054	748		630		514		Continue	Continue	Continue

Project Total Cost:			275368	6619		4967		5069		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604780A - COMBINED ARMS TACTICAL TRAINER (CATT)	PROJECT 582
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COST (In Thousands)	FY 2001 Actual	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	11165	8564	2510	0	0	0	0	0	28697

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 (AAR) of an exercise.

FY03 develops Digital AAR and enhances Commander's Integrated Training Tool (CITT) to include AVCATT-A.

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

FY 2001 Accomplishments:

- 7629 Continued 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. Continued development and refinement of SE Core architecture.
- 2857 Continued development of the After Action Review (AAR) capability, training scenarios, and provide for system High Level Architecture (HLA) compliance.
- 200 Maintained support services to program office.
- 479 Provided Government Program management, engineering, technical, tests, and contract support for the aviation effort and the refinement of the SE Core baseline.

Total 11165

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604780A - COMBINED ARMS TACTICAL
TRAINER (CATT)**

PROJECT

582

FY 2002 Planned Program

- 7505 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) development and Longbow reconfigurable configuration. Complete the aviation refinements of SE Core architecture.
- 759 Provide government program management, engineering, technical, contract, and test support for SE Core refinements.
- 300 Maintain support services and government agency support to program office.

Total 8564

FY 2003 Planned Program

- 2260 Begin development of Digital AAR and enhance Commander's Integrated Training Tool (CITT) to include AVCATT-A.
- 250 Provide government program management, engineering, technical and contract support.

Total 2510

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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
**0604780A - COMBINED ARMS TACTICAL
 TRAINER (CATT)**

PROJECT
582

<u>D. Schedule Profile</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>
Software Builds 1 & 2	3Q						
Software Build 3(A & B)		1Q					
Software Build 3(C)		2Q					
Software Build 4		2Q					
Initial Operational Test & Evaluation (IOTE)		3Q					
Longbow Software Build and Follow-On Test			3Q				
Comanche TTP Software Build and Development Test			4Q				

FY01 Milestone Complete
 Software Build 3(A&B) Complete

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	10486	1Q	7505	1Q	2260	1Q	0	26147	0
Subtotal:			5896	10486		7505		2260		0	26147	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	180	2Q	0		0	560	0
b . Engineering Services & Technical Support	C/FFP/T&M	AST, Inc., Orlando, FL	0	0		120	2Q	0		0	120	0
Subtotal:			180	200		300		0		0	680	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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
a . IOT&E	MIPR	Operational Test Command, Ft. Hood, TX	0	43	4Q	140	2Q	0		0	183	0
Subtotal:			0	43		140		0		0	183	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		619		250		0	1687	0
Subtotal:			382	436		619		250		0	1687	0

Project Total Cost:			6458	11165		8564		2510		0	28697	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604783A - JOINT NETWORK MANAGEMENT SYSTEM				PROJECT 363	
COST (In Thousands)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
363 JOINT NETWORK MANAGEMENT SYSTEM	0	25912	8028	8009	6996	5492	5481	Continuing	Continuing

A. Mission Description and Budget Item Justification: 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. Previous efforts were funded in ISYSCON Program Element/Project 0208010/107 in FY01.

This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP) and the Warfighter Information Network-Tactical (WIN-T).

FY 2001 Accomplishments:

PE Begins in FY2002. FY2001 funding contained in ISYSCON PE/Proj 0208010/107.

FY 2002 Planned Program

- 1717 Complete Software Integration for Key Performance Parameters (KPP) Baseline
- 1200 Conduct Functional Qualification Test (FQT) on KPP Baseline
- 7784 Field, train and conduct Initial Operational Test and Evaluation (IOT&E)
- 4782 Continue System Design for Threshold Baseline
- 3230 Continue Concept Requirement and Analysis for Threshold Baseline
- 7199 Software Integration for Threshold Baseline

Total 25912

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604783A - JOINT NETWORK MANAGEMENT SYSTEM

PROJECT
363

FY 2003 Planned Program

- 1007 Complete Software Integration for Threshold Baseline
 - 807 Conduct Functional Qualification Test (FQT) for Threshold Baseline
 - 617 Initiate Concept Requirement and Analysis for Objective Baseline
 - 1336 Initiate System Design for Objective Baseline
 - 3168 Software Integration for Objective Baseline
 - 1093 Post Deployment Software Support (PDSS)
- Total 8028

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	0	26130	8047
Appropriated Value	0	26130	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-218	0
b. SBIR/STTR	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	0	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-19
Current Budget Submit (FY 2003 PB)	0	25912	8028

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604783A - JOINT NETWORK MANAGEMENT SYSTEM	PROJECT 363
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<u>C. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
0208010 107, ISYSCON DEV	10500	0	0	0	0	0	0	0	10500
B95700, JOINT NETWORK MANAGEMENT SYSTEM	0	0	6868	6653	4854	2274	3849	Continue	Continue

D. Acquisition Strategy: TRADOC approved the revision 2 for the JNMS Operational Requirements Document (ORD). MS A/B approval led to the release of the solicitation which resulted in a development contract award 14 May 2001. Development contract will provide the vehicle for the phased development of the JNMS baselines, starting with the Key Performance Parameters (KPP) Threshold Baseline, Threshold Baseline and subsequent Objective baselines.

<u>E. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Contract Award to begin JNMS Development*	3Q						
Software Integration of Key Performance Parameter (KPP) Software Baseline		1-4Q					
First Qualification Test on KPP Baseline		4Q					
Begin Fielding, Training, Conducting Initial Operational Test & Eval (IOT&E) for KPP Baseline		3-4Q	1-2Q				
Continue System Design for Threshold Baseline		1-4Q	1-4Q				
Continue Concept Requirement & Analysis for Threshold Baseline		1-4Q					
Software Integration for Threshold Baseline			1-4Q				
Complete IOT&E for KPP Baseline			2Q				
Initiate, Design & Integration of 1st Increment Objective Baseline			1-4Q	1-4Q			
Milestone C decision			3Q				
Material Release			3Q				

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604783A - JOINT NETWORK MANAGEMENT SYSTEM

PROJECT
363

E. Schedule Profile (continued)	<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>
First Qualification Test (FQT) for Threshold Baseline			4Q				
First Operational Test and Evaluation (FOT&E) Threshold				2Q			
FQT Objective Increment 1				4Q			
Objective Increment 1 Software Release					3Q		
FQT Objective Increment 2					4Q		
Objective Increment 2 Software Release						3Q	
FQT Objective Increment 3						4Q	
Objective Increment 3 Software Release							3Q
FQT Objective Increment 4							4Q

* JNMS Reflected in PE/Proj 0208010/107 in FY01

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604783A - JOINT NETWORK MANAGEMENT SYSTEM

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	CPIFF/T&M/FFP	SAIC - Mc Lean, VA	0	0		21097	3Q	6640	3Q	Continue	Continue	0
Subtotal:			0	0		21097		6640		Continue	Continue	0

Remarks: FY01 funding for JNMS contained in ISYSCON, PE/Proj 0208010/D107. FY02 funding supports ongoing JNMS Software Development to produce phased products. CPIFF - Cost Plus Fixed Fee; T&M - Time and Materials; 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
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604783A - JOINT NETWORK MANAGEMENT SYSTEM	PROJECT 363
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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	MIPR	Various	0	0		2055	2Q	455	2Q	Continue	Continue	0
Subtotal:			0	0		2055		455		Continue	Continue	0

Remarks: Includes test support cost for CECOM RDT&E, OTC, JITC and SEC. IOT&E scheduled for 2Q FY03, FOT&E scheduled for 2Q FY04.

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	See remarks	Various	0	0		1255	1-2Q	559	1Q	Continue	Continue	0
b . Government Engineering	MIPR		0	0		1174	1-2Q	234	1Q	Continue	Continue	0
c . PM Support-Core	MIPR		0	0		140	1-4Q	140	1-4Q	Continue	Continue	0
d . Travel	MIPR		0	0		191	1-4Q	0	1-4Q	Continue	Continue	0
Subtotal:			0	0		2760		933		Continue	Continue	0

Remarks: Contractor Engineering includes PM support [BTG Nations (T&M), MITRE FFRDC (CPFF)and JSC (CPAF-7%)]

Project Total Cost:			0	0		25912		8028		Continue	Continue	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604801A - Aviation - Eng Dev						PROJECT C45	
COST (In Thousands)	FY 2001 Actual	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	10698	4032	3150	2433	2437	2356	2347	Continuing	Continuing

A. Mission Description and Budget Item Justification: 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, microclimate 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 improved 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 Retinal Scanning Display (RSD) effort develops RSD technology for incorporation into helmet-mounted displays of Army aircrews. The Cockpit Air Bag System (CABS) is a supplemental restraint system that reduces aviator deaths and injuries caused by body and head flailing against cockpit structures to improve crash survivability and reduce potential injuries and fatalities. The CABS includes integration into the aircraft platform of common components, including Air Bag modules and the crash sensor and system packaging. 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).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development**0604801A - Aviation - Eng Dev****C45****FY 2001 Accomplishments:**

- 5881 Continued Air Warrior Engineering Manufacturing Development for the Block 1 ensemble and components design
- 4817 Continued Helmet Mounted Display (Retinal Scanning Display) Engineering Manufacturing Development to include optical pinch correction for improved image quality

Total 10698

FY 2002 Planned Program

- 2263 Continue Air Warrior Engineering Manufacturing Development for the Block 1 ensemble and components design
- 1769 Develop Cockpit Air Bag System integration for the CH-47 Cargo aircraft platform

Total 4032

FY 2003 Planned Program

- 3150 Complete Air Warrior Block 1 ensemble Engineering Manufacturing Development and begin the integration of preplanned Air Warrior Block 2 improvements

Total 3150

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604801A - Aviation - Eng Dev

PROJECT
C45

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	11993	2263	2281
Appropriated Value	12104	4063	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-31	0
b. SBIR / STTR	-329	0	0
c. Omnibus or Other Above Threshold Reprogramming	0	0	0
d. Below Threshold Reprogramming	-966	0	0
e. Rescissions	-111	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	869
Current Budget Submit (FY 2003 PB)	10698	4032	3150

FY 2001: Funds realigned to higher priority requirements resulting in \$966 thousand decrease.
 FY 2002: \$1.8 million congressional increase for Cockpit Air Bag System integration for the CH-47 Cargo aircraft platform.
 FY 2003: Increase to accelerate, by 4 to 5 years, Air Warrior integration into the UH-60M.

<u>C. Other Program Funding Summary</u>	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	3845	6823	1688	2929	2916	3497	3490	Continue	Continue
Aircraft Procurement, Army SSN AZ3110 - ACIS	10494	10179	15215	34668	34526	35622	36734	Continue	Continue

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604801A - Aviation - Eng Dev

C45

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 1 Air Warrior ensemble have been developed for test and evaluation. The Air Warrior aircraft platform specific nonrecurring production engineering will begin during FY 2002 in preparation for the Block 1 ensemble production, aircraft integration, and fielding. Beginning in FY 2003, Engineering Manufacturing Development of preplanned product improvements to the Block 1 ensemble will integrate joint and new technologies as block improvements to the Air Warrior ensemble. Performance specifications for the joint service improved laser eye protection program are being developed and will be used for production competition. The Retinal Scanning Display technology is being developed for integration into helmet mounted displays for Army aviators and for the Future Combat System crewmembers. The Cockpit Air Bag System (CABS) is being integrated into the CH-47 aircraft platform by the original development contractor for the CABS.

<u>E. Schedule Profile</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>
Air Warrior System Critical Design Review	2Q						
Begin Air Warrior System Test	3Q						
Begin Air Warrior System Developmental and Operational Tests		1Q					
Begin Air Warrior nonrecurring production engineering integration into aircraft platforms		2Q					
Air Warrior Basic ensemble Full Rate Production Decision			2Q				
Advanced Development of Air Warrior Block improvements		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Engineering Development of Air Warrior Block improvements			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604801A - Aviation - Eng Dev

PROJECT
C45

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 & C/FP	Various	9087	4150	2Q	1367	1Q	2696	1Q	Continue	Continue	Continue
b . Helmet Mounted Display	SS-CPFF	Microvision, Seattle, WA & Various	10952	4600	2Q	0		0		0	15552	15552
c . Cockpit Air Bag System integration into CH-47 Cargo	SS-FFP	Simula Inc., Phoenix, AZ	0	0		1769	2Q	0		0	1769	1769
Subtotal:			20039	8750		3136		2696		Continue	Continue	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	443	1-4Q	277	1-4Q	250	1-4Q	Continue	Continue	Continue
Subtotal:			1457	443		277		250		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604801A - Aviation - Eng Dev

PROJECT
C45

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	102	2Q	Continue	Continue	Continue
Subtotal:			230	735		518		102		Continue	Continue	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	770	1-4Q	101	1-4Q	102	1-4Q	Continue	Continue	Continue
Subtotal:			564	770		101		102		Continue	Continue	Continue

Project Total Cost:			22290	10698		4032		3150		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

COST (In Thousands)	FY 2001 Actual	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	17698	17146	41758	88837	61744	38304	6499	Continuing	Continuing
613 MORTAR SYSTEMS	11144	9938	5065	33408	39495	33881	4076	Continuing	Continuing
705 ADVANCED PRECISION KILL WEAPON SYSTEM (APKWS)	0	0	22746	35702	11608	0	0	0	70056
AS1 SMALL ARMS IMPROVEMENT	6554	5719	8958	14754	10641	4423	2423	Continuing	Continuing
AS5 LOW COST COMPETENT MUNITIONS (LCCM)	0	1489	4989	4973	0	0	0	0	11451

A. Mission Description and Budget Item Justification: Provides for engineering development of weapons and munitions systems. The mortar systems (D613) 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 the Precision Guided Mortar Munition. Project D705, the Advanced Precision Kill Weapon System (APKWS), is a highly accurate weapon that will complement the HELLFIRE missile in precision strikes against soft point targets and provide improved accuracy over the current 2.75-inch munition used on the AH-64 Apache, OH-58 Kiowa Warrior, and the future RAH-66 Comanche helicopters. Under the APKWS program, a laser guidance section for the 2.75 inch munition will be developed, tested, and qualified at the system level. The APKWS is expected to provide at least four times the number of kills, thereby substantially reducing collateral damage, and significantly reducing cost because fewer rockets are required. The APKWS supports the Legacy to Objective Force transition path of the Transformation Campaign Plan. The Small Arms Improvement program develops technology to enhance lethality, target acquisition, fire control, training effectiveness, and/or reliability for small arms weapon systems. The current effort develops a universal mounting bracket for the MK19-3 Grenade Machine Gun. This program supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

Project DAS5 funds the design, development, assembly and test of a Low Cost Competent Munition (LCCM) fuze. The final concept for the LCCM will most probably encompass a standard fuze equipped with a Global Positioning System (GPS) receiver, an air-drag device compensating for gun and meteorological ballistics effects, a Fuze, Safe and Arm (FSA) mechanism, a U.S. required Selective Availability, Anti-Spoof GPS Module (SAASM), a smaller high power battery, an inductive fuze data link, and improved trajectory correcting software algorithms.

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604802A - Weapons and Munitions - Eng Dev

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	32703	7046	11760
Appropriated Value	33005	17246	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-100	0
b. SBIR / STTR	-957	0	0
c. Omnibus or Other Above Threshold Reductions	-11100	0	0
d. Below Threshold Reprogramming	-2948	0	0
e. Rescissions	-302	0	0
Adjustments to Budget Years Since FY2002 PB		0	29998
Current Budget Submit (FY 2003 PB)	17698	17146	41758

FY 2001 funds used for higher priority Army requirements to include Multi Purpose Individual Munitions contract termination and re-definition of Countermine Capability Stock Program submitted on the Army's FY 2001 Omnibus Reprogramming.

FY 2002 funds increased for shoulder launched multi purpose assault weapon, common remotely operated weapon station (CROWS), M795E1 155mm extended range high explosive base burner projectile, and small arms fire control system II.

FY 2003 adjustment provides increases for APKWS (to take advantage of successful ATD), LCCM (continue support of Congressional requirements), and Small Arms Improvement (test and evaluate aviation variant).

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604802A - Weapons and Munitions - Eng Dev				PROJECT 613	
COST (In Thousands)	FY 2001 Actual	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	11144	9938	5065	33408	39495	33881	4076	Continuing	Continuing

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, mobility, and accuracy of mortar systems. Current mortar systems include conventional ammunition with a variety of fuzing, weapons that range from man-portable 60mm to vehicle-mounted 120mm mortars, and related equipment such as fire control, mortar ballistic computers, 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 the Army's Transformation Campaign plan. This will increase situational awareness and reduce the probability of fratricide. This project supports the Legacy transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 2179 MFCS Software Development/Software Test
- 861 MFCS Heavy Development Test Initiated
- 1023 MFCS Developmental Engineering Support
- 1035 MFCS Heavy Hardware System Integration
- 337 MFCS Project Management
- 2641 MAPAM test hardware for Production Qualification Test (PQT) Procured
- 85 MAPAM PQT
- 1350 MAPAM Developmental Engineering
- 133 MAPAM Program Management
- 182 Engineering Test for 120mm SRTR

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604802A - Weapons and Munitions - Eng Dev

PROJECT

613**FY 2001 Accomplishments: (Continued)**

- 836 120mm SRTR Prototype Development
- 350 120mm SRTR Developmental Engineering
- 132 SRTR Program Management

Total 11144

FY 2002 Planned Program

- 1508 MFCS Light Hardware Development
 - 1355 MFCS Version 2 Software Development
 - 709 MFCS Light Development Engineering
 - 513 MFCS Heavy Development Test and Evaluation
 - 600 MFCS Heavy Information Assurance
 - 700 MFCS Heavy Development Engineering
 - 300 MFCS Program Management
- SHOULDER LAUNCHED MULTIPURPOSE ASSAULT WEAPON-CONFINED SPACE (SMAW-CS)
- 2500 SMAW-CS: Procure hardware for system level qualification
 - 600 SMAW-CS: Complete engineering design of baseline system developed under FY00 and FY01 programs
 - 700 SMAW-CS: Continue to provide engineering support and analysis
 - 453 SMAW-CS: Perform engineering design tests on components, integrated subsystems, and systems

Total 9938

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
613

FY 2003 Planned Program

- 2100 MFCS Light Hardware Development
- 800 MFCS Light Development Engineering
- 1865 MFCS Software Version 2 Development/Test
- 300 MFCS Program Management

Total 5065

<u>B. Other Program Funding Summary</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>
Other Procurement, Army -2-: K99300 (MFCS)	7274	11694	29794	40926	15409	19489	38681	0	163267
0603802 AS4 Weapons and Munitions Advanced Development, Mortar Systems	0	2800	0	0	0	0	0	0	2800

C. Acquisition Strategy: Mortar Fire Control System (MFCS) - The prime contractor (L3 Communications-formerly AlliedSignal Corp. of Teterboro, NJ) teamed with a number of subcontractors, and the Government, started development of the MFCS. Because of impending cost growth on the contract with L3 Communications, the contract was not further funded. Development is being completed as a government in-house program. Due to an urgent need to replace the M23 Mortar Ballistic Computer, the Commander's Interface, a component of MFCS that performs the ballistic computer function is being procured and fielded. Initial production of the full system is scheduled for FY 2003 and is planned as a fixed price competitive system contract.

The Mortar Anti-Personnel - Anti-Materiel (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. No follow on production is currently planned.

The 120mm Short Range Training Round (SRTR), XM932 will be a low cost training round for the 120mm Mortar System. No follow on production is currently planned.

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
613

<u>D. Schedule Profile</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>
Operational Test (MFCS Heavy)			1Q				
Type Classification (MFCS Heavy) (MS III)			2Q				
First Unit Equipped (MFCS Heavy)			3Q				
Procure NDI Hardware for Evaluation (MAPAM)	4Q						
Conduct Comparative / Safety Tests (MAPAM)	2-3Q						
Prototype Qualification Tests (MAPAM)		1-2Q					
120mm SRTR - XM932							
Prototype Tests (XM932)		2Q					

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604802A - Weapons and Munitions - Eng Dev

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	20221	0
b . MFCS Heavy Software Development	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	1261	2179	1Q	0		0		0	3440	0
c . MFCS Hardware Integration	Project Order	TACOM- ARDEC Picatinny Arsenal NJ	0	396	1Q	0		0		0	396	0
d . MFCS Hardware Integration	C/T&M Contract	Applied Ordnance Technology, Waldorf MD	0	521	1Q	0		0		0	521	0
e . MFCS Heavy Integration	Project Order	TACOM-RI Rock Island Ill	333	118	1Q	0		0		0	451	0
f . MFCS Version 2 Software Development	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	0	0		1355	2Q	1865	2Q	0	3220	0
g . MFCS Light Hardware Development	Contract	TBD	0	0		1508	3Q	2100	3Q	0	3608	0
h . MAPAM Hardware	SS/FP	SM Swiss AEC Zurich, Switzerland	3661	2641	4Q	0		0		0	6302	0
i . 120mm SRTR Development	SS/CR	Pocal Industries Scranton, PA	0	836	4Q	0		0		0	836	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
613

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 . SMAW-CS Engineering Design of Baseline System	TBD	TBD	0	0		1428	1Q	0		0	1428	0
k . Mortar System Upgrades	Various	TBD	0	0		0		0		Continue	Continue	Continue
Subtotal:			25476	6691		4291		3965		Continue	Continue	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 . MFCS Heavy Dev Support	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	3335	627	2Q	709	2Q	0		0	4671	0
b . MFCS Logistics Support	Project Order	TACOM-RI Rock Island Ill	0	396	2Q	0		0		0	396	0
c . MAPAM Dev Support	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	1750	1350	2Q	0		0		0	3100	0
d . 120mm Short Range Training Rd Dev Support	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	0	350	2Q	0		0		0	350	0
e . MFCS Light Dev Support	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	0	0		700	2Q	800	2Q	0	1500	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604802A - Weapons and Munitions - Eng Dev

613

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 . SMAW-CS Engineering Support	TBD	TBD	0	0		400	2Q	0		0	400	0
Subtotal:			5085	2723		1809		800		0	10417	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 . MFCS Heavy Component Testing	MIPR	ATEC, Alexandria, VA	1038	0		0		0		0	1038	0
b . MFCS Heavy Developmental Test	MIPR	ATEC, Alexandria, VA	62	861	2Q	513	2Q	0		0	1436	0
c . MFCS Information Assurance	MIPR	CECOM Ft Monmouth NJ	0	0		600	3Q	0		0	600	0
d . MAPAM Foreign Comparative Test	MIPR	TACOM-ARDEC Picatinny Arsenal, NJ	1119	0		0		0		0	1119	0
e . MAPAM PCA/Production Qualification Test	MIPR	ATEC, Alexandria, VA	0	85	3Q	0		0		0	85	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
613

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 . 120mm SRTR Production Qualification Test	MIPR	ATEC, Alexandria, VA	0	182	3Q	0		0		0	182	0
g . SMAW-CS Engineering Design Test	TBD	TBD	0	0		225	3Q	0		0	225	0
h . SMAW-CS System Test Hardware			0	0		2200	3Q	0		0	2200	0
Subtotal:			2219	1128		3538		0		0	6885	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 . Mortar Fire Control System	In-house	PM Mortars, Picatinny Arsenal NJ	1002	300	2Q	300	1Q	300	1Q	0	1902	0
b . Mortar Fire Control System	T&M Contract	Robbins-Gioia Inc Alexandria VA	600	37	2Q	0		0		0	637	0
c . MAPAM	In-house	PM Mortars, Picatinny Arsenal NJ	100	133	2Q	0		0		0	233	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604802A - Weapons and Munitions - Eng Dev

613

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 . 120mm SRTR XM932	In-house	PM Mortars, Picatinny Arsenal NJ	0	78	2Q	0		0		0	78	0
e . SRTR Management Support	C/T&M Contract	Applied Ordnance Technology, Waldorf MD	0	54	2Q	0		0		0	54	0
Subtotal:			1702	602		300		300		0	2904	0

Project Total Cost:			34482	11144		9938		5065		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604802A - Weapons and Munitions - Eng Dev				PROJECT 705	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
705 ADVANCED PRECISION KILL WEAPON SYSTEM (APKWS)	0	0	22746	35702	11608	0	0	0	70056

A. Mission Description and Budget Item Justification: The Advanced Precision Kill Weapon System (APKWS) is a family of precision guided rockets with a newly designed guidance section that integrates with existing 2.75-inch munition components and launch equipment. The APKWS is a highly accurate weapon that will complement the HELLFIRE missile in a precision strike against soft point targets. The APKWS will provide improved accuracy over the current 2.75-inch munition used on the AH-64 Apache, OH-58 Kiowa Warrior and the future RAH-66 Comanche helicopters. The APKWS program will develop, test and qualify a laser guided 2.75-inch munition. The funding includes system level qualification for APKWS. The APKWS is expected to provide a substantial increase in the number of kills and a reduction in collateral damage to minimize fratricide. The Advanced Concept Technology Demonstration (ACTD), Low Cost Precision Kill, was funded in PE 0603313.567. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:
Project not funded in FY 01.

FY 2002 Planned Program
Project not funded in FY 02.

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
705

FY 2003 Planned Program

- 20069 Define and develop system requirements and preliminary design for precision guided rocket including hardware and software.
- 1454 Develop test plans and test support equipment.
- 1223 Perform government engineering support.

Total 22746

<u>B. Other Program Funding Summary</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>
C70301 APKWS (Advanced Precision Kill Weapon System)	0	0	0	0	8019	74074	77188	746200	905481

C. Acquisition Strategy: Development of the APKWS will be full and open competition. The APKWS program will be an Acquisition Category II program as defined in DoD 5000.2-R guidelines. The APKWS development program is a 30- month effort followed by Low Rate Initial Production (LRIP) and Full Rate Production (FRP). The U.S. Army Aviation and Missile Command (AMCOM) will provide assistance and technical expertise during the development effort.

<u>D. Schedule Profile</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>
Milestone B			1Q				
Award APKWS SDD Contract			2Q				
APKWS PDR			4Q				
APKWS CDR				2Q			
APKWS Testing				3Q			
Milestone C					2Q		

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604802A - Weapons and Munitions - Eng Dev

705

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 Contract	CPIF/AF	TBD	0	0		0		18362	2Q	32003	50365	0
b . Support Costs	Various	Various	0	0		0		420	1-4Q	1387	1807	0
c . Development Engineering	Various	Various	0	0		0		1287	1-4Q	4930	6217	0
Subtotal:			0	0		0		20069		38320	58389	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)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604802A - Weapons and Munitions - Eng Dev

705

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	Various	Various	0	0		0		1454	1Q	4410	5864	0
Subtotal:			0	0		0		1454		4410	5864	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	Various	Various	0	0		0		1223	1-4Q	4580	5803	0
Subtotal:			0	0		0		1223		4580	5803	0

Project Total Cost:			0	0		0		22746		47310	70056	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604802A - Weapons and Munitions - Eng Dev				PROJECT AS1	
COST (In Thousands)	FY 2001 Actual	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	6554	5719	8958	14754	10641	4423	2423	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program provides funds to develop existing and emerging technologies 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 items such as fire control equipment, 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. These small arms weapon systems support the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- LIGHTWEIGHT TRIPOD FOR LIGHT MACHINE GUN
- 321 Hardware Design
- 300 Fabrication of Prototypes
- 85 Engineering Test
- 159 Prototype Modification & Redesign
- M249 RAILS/BIPOD/HANDGUARD
- 97 Prototype Design & Fabrication Support
- 60 Developmental Test Support
- 96 User Evaluation
- 15 Technical Data Preparation
- M249 MACHINE GUN BARREL LIFE EXTENSION PROGRAM
- 50 Preparation and release of Request For Proposal (RFP)

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604802A - Weapons and Munitions - Eng Dev

PROJECT

AS1

FY 2001 Accomplishments: (Continued)

- 30 Receipt/Evaluation of Proposals, Award of Contract
- 284 Contract Execution, Design and Fabrication
- 20 Technical Data Preparation
- 30 Engineering Support
MK19 MODERN MOUNT
- 80 Definitization of Requirements/Final Acquisition Strategy/Solicitation Preparation
- 20 Prototype Hardware Fabrication
- 30 Engineering Support
MK19 REMOTE PLATFORM
- 143 Contract Award
- 475 Design, Fabrication of Prototypes
- 100 Vehicle Integration & Testing
XM116 SIGHT, COMPUTERIZED, SAFC
- 1144 Contract Award for Primary Hardware
- 590 Design & Fabrication of Hardware
- 400 Program Documentation/Execution
- 100 Technical Test Plan
- 100 Operational Test Plan
- 75 Integrated Logistics Support (ILS) Documentation
ENHANCED CAL .50 MACHINE GUN
- 100 Contract Award (Rails)
- 95 Rail Evaluation
- 730 Safety Testing/ Certification

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604802A - Weapons and Munitions - Eng Dev

PROJECT

AS1**FY 2001 Accomplishments: (Continued)**

- 450 Analysis of Alternatives experiment
 - 70 Milestone A
RIFLE LAUNCHED ENTRY MUNITION
 - 20 Continuation of Hardware Fabrication
 - 217 Developmental Testing/Operational Testing (DT/OT)
 - 68 MS C In-Process Review (IPR)/Type Classification (TC)
- Total 6554

FY 2002 Planned Program

- 493 LIGHTWEIGHT TRIPOD FOR LIGHT MACHINE GUN
Hardware Modification and Retesting
- 175 Hardware Fabrication
- 65 Technical Test Start
- 50 OT Planning
M249 MG BARREL LIFE EXTENSION PROGRAM
- 342 Final Design, Tooling and Fabrication
- 65 Technical Testing
- 69 Tech Data Preparation
MK19 REMOTE PLATFORM
- 60 Test Planning
- 500 Engineering Assessment Test
- 900 Award Hardware Improvement Contract Mod
- 420 Prepare MS B Package

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604802A - Weapons and Munitions - Eng Dev

PROJECT

AS1**FY 2002 Planned Program (Continued)**

- 1200 Award Contract - Primary Hardware
- 350 Fabricate Primary Hardware
- 30 OT Planning
XM116 SIGHT, COMPUTERIZED, SAFC
- 650 Contract Modification Primary Hardware
- 200 Program Documentation/Execution
- 150 Tradeoff Studies

Total 5719

FY 2003 Planned Program

- LIGHT WEIGHT TRIPOD FOR MACHINE GUN
- 200 Technical Testing
- 695 Operational Testing
- 80 Independent Evaluation
- 125 Type Classify/Milestone C
M249 MACHINE GUN BARREL LIFE EXTENSION PROGRAM
- 90 Tech Eval Reports
- 333 Tech Data Support
- 116 ECP Prep & Approval
M249 SHORT RANGE TRAINING AMMUNITION
- 180 Contract Award
- 50 Manufacture Ammunition
- 476 Conduct Developmental Tests
- 50 Obtain Safety Confirmation/Certification

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604802A - Weapons and Munitions - Eng Dev

PROJECT

AS1

FY 2003 Planned Program (Continued)

M203 UPGRADE

- 130 Finalize Requirements/Systems Demonstration/IPR
 - 1231 Comp Contractor Selection/Award
 - 130 Tech Assessments/Risk Reduction
- XM116 SIGHT, COMPUTERIZED, SAFC
- 100 Primary Hardware Delivered
 - 100 Manuals/ Training Plans Completed
- MK19 SELF DESTRUCT CARTRIDGE
- 925 Contract Award
 - 270 Engineering Development
 - 180 Final Development Test
 - 60 Critical Design Review
 - 185 Testing Integration

M240 WEIGHT REDUCTION

- 80 Engineering Tests
- 100 Program Documentation/ MS B
- 100 Award Contract
- 622 Final Design/ Fabricate Test Hardware

AVIATION VARIANT

- 500 Technical Testing
- 1050 Limited User Test
- 275 Evaluation Reports
- 425 Program Documentation/MS C
- 100 Production Planning

Total 8958

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
AS1

<u>B. Other Program Funding Summary</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>
WTCV, GZ1290, Squad Auto Wpn (MODS)	2920	4419	4119	7690	0	0	0	0	29305
WTCV, GZ2800, M16 Rifle MODS	4343	2085	0	2419	2410	2097	0	0	65956
WTCV, GB3000, MK19 MODS	2796	739	2743	3868	3856	4395	0	0	20868
WTCV, GZ1300, Med MG (MODS)	491	741	0	2998	2989	3096	1397	18300	38239
PAA, E93500, Rifle Launched Entry Munition	2169	2773	2744	0	0	0	0	0	8086

C. Acquisition Strategy: Primary strategy is to mature and finalize design, award RDTE hardware contracts, and test and evaluate system. Ultimate goal is type classification and production award.

<u>D. Schedule Profile</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>
LIGHTWEIGHT TRIPOD FOR LIGHT MACHINE GUN							
Design Hardware	2Q						
Fabricate Prototypes	3Q						
Engineering Test	3-4Q						
Prototype Modification & Redesign	4Q	1-2Q					
Hardware Modification & Retesting		1-2Q					
Hardware Fabrication		3-4Q					
Technical Test Start		4Q					
OT Planning		4Q					
Technical Testing			1-2Q				
Operational Testing			2Q				
Independent Evaluation			3Q				
Type Classify/MS C			4Q				
M249 RAILS/BIPOD/HANDGUARD							
Prototype Design & Fabrication Support	1-3Q						
Developmental Test Support	4Q						
User Evaluation	4Q	1Q					

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604802A - Weapons and Munitions - Eng Dev	PROJECT AS1
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<u>D. Schedule Profile (continued)</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>
Technical Data Prep		2Q					
M249 RAM IMPROVEMENT/WEIGHT REDUCTION							
Award contract				2Q			
Long lead procurements				3Q			
Prototype designs				3-4Q			
Prototype fabrication					1-2Q		
Engineering tests					2-3Q		
Final design					4Q		
Hardware fabrication					4Q	1Q	
TT/OT						1-3Q	
Independent Assessment						3-4Q	
ECP						4Q	
M249 MACH GUN BARREL LIFE EXT PGM							
Prepare and release RFP	1-2Q						
Receive/Evaluate Proposals, Award Contract	1-2Q						
Contract Execution, Design & Fabrication	2-4Q						
Technical Data Preparation	3Q						
Engineering Support	1-4Q						
Final Design, Tooling & Fabrication		1-4Q					
Technical Testing		3-4Q					
Technical Data Preparation		4Q	1-2Q				
Tech Eval/Reports			1-3Q				
Tech Data Support			1-3Q				
ECP Prep & Approval			3Q				
M249 SHORT RANGE TRAINING AMMUNITION							
Contract Award			2Q				
Manufacturing Ammunition			1Q				
Conduct Developmental Tests			2-3Q				
Obtain Safety Confirmation			3Q				
Independent Assessment Reports				1Q			
Prepare Package				1-2Q			
Staff Packages				3Q			

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604802A - Weapons and Munitions - Eng Dev	PROJECT AS1
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<u>D. Schedule Profile (continued)</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>
Milestone C IPR/TC				4Q			
M203 UPGRADE							
Finalize requirements			1Q				
Competitive contractor selection/award			2-3Q				
Technical assessments/risk reduction			4Q	1-4Q			
Prototype Fabrication				1-4Q			
Finalize prototype					1-3Q		
DT/OT					4Q	1-3Q	
Independent Evaluations						2-3Q	
Finalize Design						4Q	1-2Q
IPR/TC-STD							2-3Q
MK19 MODERN MOUNT							
Engineering Support	1-4Q						
Test Hardware Samples/Final Report	1-2Q						
Prototype Hardware Fabrication	1-2Q						
Final Report	3-4Q						
MK19 REMOTE PLATFORM							
Contract Award	1Q						
Design, Fabricate Prototypes	2-4Q	1Q					
Vehicle Integration & Testing (Use of FY 2001 c/o)	4Q	1-2Q					
Test Planning		1Q					
Engineering Assessment Test		2-3Q					
Award Hardware Improvement Contract Mod		3Q					
Prepare MS B Package		2-3Q					
Award Contract - Primary Hardware		3Q					
Fabricate Primary Hardware		4Q	1Q				
OT Planning		4Q					
XM116 SIGHT, COMPUTERIZED, SAFC							
MS B	4Q						
Contract Award Primary Hardware (Use of FY 2001 c/o)	4Q	1-4Q	1-4Q				
Two Year Design & Fabricate Hardware (Use of FY 2001 c/o)		1-4Q	1-4Q				

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
AS1

D. Schedule Profile (continued)	<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>
Program Documentation/Execution (Use of FY 2001 c/o)	4Q	1-4Q					
Technical Test Plan (Use of FY 2001 c/o)	4Q	1-4Q					
Operational Test Plan (Use of FY 2001 c/o)	4Q	1-4Q					
ILS Documentation (Use of FY 2001 c/o)	4Q	1-4Q					
Contract Modification		3Q					
Program Documentation		3-4Q					
Tradeoff Studies		3Q					
Primary Hardware Delivered			4Q				
Manuals/ Training Plans Completed			4Q				
Technical Test				1-2Q			
Operational Test				2-3Q			
Systems Evaluation Report				4Q	1Q		
MS-C					1Q		
MK19 SELF-DESTRUCT CARTRIDGE							
Contract Award			2Q				
Engineering Development			1-2Q				
Final Development Test			2Q				
Critical Design Review			3Q				
Test Integration			3-4Q				
Award Qual Lot Fabrication Option			3-4Q				
Manufacture Qualification Lot			3-4Q	1Q			
DT/OT/LFT				2-4Q			
Prepare MS C IPR Package					1-2Q		
MS C IPR/TC-STD					3Q		
M240 WEIGHT REDUCTION							
Engineering Tests			1Q				
Program Documentation/ MS B			1-2Q				
Contract Award			3Q				
Final Design/ Fabricate Test Hardware			3-4Q	1Q			
Manufacturing Process Finalized				1Q			
Technical Test				2-4Q			
User Test				2-4Q			

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
AS1

D. Schedule Profile (continued)	<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>
Independent Assessment/ Test Reports					1-2Q		
Program Documentation/ MS C					2-4Q		
M240 IMPROVED MACHINE GUN BARREL							
Define Requirements				1Q			
Develop Test Plan				2Q			
Award Contract				3Q			
Preliminary Design/Fabrication				4Q	1Q		
Fabricate Prototype Hardware					1-2Q		
Test & Evaluate					3Q		
ECP/Reports					4Q		
ENHANCED CAL .50 MACHINE GUN							
Contract Award (Rails)	4Q						
Evaluation of Rail Designs (Use of FY 2001 c/o)		1-2Q					
Safety Testing/Certification (Use of FY 2001 c/o)		2-3Q					
Analysis of Alternatives Experiment (Use of FY 2001 c/o)		3-4Q					
Milestone A (Use of FY 2001 c/o)		4Q					
NON-TOXIC AMMO							
Market Survey				1Q			
MS B				1Q			
Prepare RFP				1-2Q			
Award Contracts for all Projectiles/Cartridges Development				3Q			
Toxic Free Primer Development				3-4Q			
Projectiles/Cartridges Development				3-4Q			
Final Development Test for Toxic Free Primer					1Q		
Final Development Test for Projectiles/Cartridges					1-2Q		
Modify Cartridges Contracts for Integration of Toxic Free Primer					2Q		
Integration of toxic free primer					3-4Q		
Critical design review (CDR)					3-4Q		
Award qual lot fabrication option for 9mm					3-4Q		

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
AS1

D. Schedule Profile (continued)	<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 Qual Lot Fabrication Option for 5.56mm,7.62mm and Cal .50						2Q	
Manufacture Qualification Hardware						1-3Q	
Initiate DT/OT/LFT						3-4Q	
Complete DT/OT/LFT							1-2Q
Prepare MSC IPR Package							2-3Q
MS C IPR/TC-STD							4Q
RIFLE LAUNCHED ENTRY MUNITION							
Continue Hardware Fabrication	2Q						
DT/OT	2-4Q						
MS C IPR/TC		1Q					
AVIATION VARIANT							
Technical Testing			1Q				
Limited User Test			2-3Q				
Evaluation Reports			3Q				
Program Documentation/MS C			3-4Q				
Production Planning			3-4Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604802A - Weapons and Munitions - Eng Dev

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	Various	6133	2578	1-4Q	3681	1-4Q	3148	1-4Q	Continue	Continue	0
Subtotal:			6133	2578		3681		3148		Continue	Continue	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, Picatinny, NJ	3574	1940	1-4Q	738	1-4Q	1929	1-4Q	16941	25122	0
b . Logistics	MIPR	TACOM, Rock Island, IL	96	192	1-4Q	182	1-4Q	275	1-4Q	2026	2771	0
c . Human Research and Eng Directorate	MIPR	APG, MD	134	217	1-4Q	133	1-4Q	250	1-4Q	1360	2094	0
Subtotal:			3804	2349		1053		2454		20327	29987	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
AS1

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	DTC, APG, MD	2522	839	1-4Q	480	1-4Q	1091	1-4Q	Continue	Continue	0
b . OT	MIPR	AEC, Alexandria, VA	0	92	1-4Q	30	1-4Q	1510	1-4Q	8182	9814	0
c . Validation testing	MIPR	DTC, APG, MD	100	96	1-4Q	50	1-4Q	185	1-4Q	460	891	0
Subtotal:			2622	1027		560		2786		Continue	Continue	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	In House	PM Small Arms, NJ	907	580	1-4Q	400	1-4Q	490	1-4Q	7367	9744	0
b . Travel	In House	PM Small Arms, NJ	102	20	1-4Q	25	1-4Q	80	1-4Q	879	1106	0
Subtotal:			1009	600		425		570		8246	10850	0

Project Total Cost:			13568	6554		5719		8958		Continue	Continue	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604802A - Weapons and Munitions - Eng Dev				PROJECT AS5	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
AS5 LOW COST COMPETENT MUNITIONS (LCCM)	0	1489	4989	4973	0	0	0	0	11451

A. Mission Description and Budget Item Justification: This program funds the design, development, assembly and test of a Low Cost Competent Munition (LCCM) fuze. The final concept for the LCCM has not been selected. However, it will probably encompass a standard fuze equipped with a Global Positioning System (GPS) receiver; an air-drag device that will compensate for gun and meteorological ballistics effects; a Fuze, Safe and Arm (FSA) mechanism; a U.S. required Selective Availability, Anti-Spoof GPS Module (SAASM); a smaller, high-power battery; an inductive fuze data link; and improved trajectory correcting software algorithms. Integration of these items to yield a low cost fuze module will effectively reduce target delivery error of conventional artillery munitions and reduce the number of projectiles required to execute a fire mission. This LCCM development is a key component of the M864 Baseburn extended range projectile recapitalization effort. Similarly, the LCCM will benefit other 155mm projectiles as well as the family of 105mm projectiles. The increase in effectiveness offered by the LCCM allows commanders the operational capability to defeat more targets with the same basic loads, while reducing the logistical burden associated with the current mission requirements. The M795E1 baseburner program maximizes range optimization. These systems support the Legacy transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:
Not applicable

FY 2002 Planned Program

- 230 M795E1 maximum range optimization
- 1259 Purchase of 220 M795E1 projectiles

Total 1489

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
AS5

FY 2003 Planned Program

- 500 Design and develop inductive data link
- 3000 Design and develop integrated GPS SAASM architectures
- 250 Design and develop miniature, high power battery
- 1239 Design, develop, and integrate gun-hardened system and components

Total 4989

<u>B. Other Program Funding Summary</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>
Projectile 155MM DPICM Basebleed M864E1	0	0	22300	35000	40000	40000	40000	0	177300

C. Acquisition Strategy: This program will be jointly structured with the United Kingdom Tubed Artillery Conventional Artillery System (TACAS) program. The Army will benefit with lower costs through increased production quantities.

<u>D. Schedule Profile</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>
M795E1 Contract Awards		3Q					
M795E1 Testing		4Q	1Q				
Component Demonstration			3Q				
Prototype Demonstration				4Q			

LCCM schedule dates are based on a joint program with the United Kingdom and a pending memorandum of agreement.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604802A - Weapons and Munitions - Eng Dev

AS5

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 . LCCM Contract	CPAF	TBD	0	0		0		4000	2Q	4000	8000	0
b . M795E1 Metal Parts	Option	Chamberlain Mfg Co Scranton, PA	0	0		769	3Q	0		0	769	0
c . M795E1 Basebleed	SS/CPIF	Talley Industries, Mesa, AZ	0	0		490	3Q	0		0	490	0
Subtotal:			0	0		1259		4000		4000	9259	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 . Product Manager's Office	In House	PM ARMS, NJ	0	0		0		300	1Q	300	600	0
b . Government IPT Support	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		0		689	1Q	673	1362	0
c . Product Managers Office - M79E1	In House	PM ARMS, NJ	0	0		30	2Q	0		0	30	0
d . Government IPT Support	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		50	2Q	0		0	50	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604802A - Weapons and Munitions - Eng Dev

AS5

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		80		989		973	2042	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 . M795E1 Testing	MIPR	Yuma Proving Grounds, Yuma AZ	0	0		150	4Q	0		0	150	0
Subtotal:			0	0		150		0		0	150	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604802A - Weapons and Munitions - Eng Dev

AS5

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		1489		4989		4973	11451	0
Project Total Cost:			0	0		1489		4989		4973	11451	0

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604804A - Logistics and Engineer Equipment - Eng Dev

COST (In Thousands)	FY 2001 Actual	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	23595	29326	65857	28257	25044	26606	23763	Continuing	Continuing
194 ENGINE DRIVEN GEN ED	4939	4966	5590	3228	3118	5574	4049	Continuing	Continuing
429 RIGIDWALL SHELTER ED	3941	7954	0	0	0	0	0	0	7456
461 MARINE ORIEN LOG EQ ED	1398	6182	38780	10326	6831	3436	3028	0	75708
H01 COMBAT ENGINEER EQ ED	791	2631	4422	4240	4341	4771	4858	0	35756
H02 TACTICAL BRIDGING - ENGINEERING DEVELOPMENT	618	1105	1831	1979	1975	2491	1989	0	12320
H14 MATERIALS HANDLING EQUIPMENT - ED	572	591	1589	592	590	598	597	0	8669
L39 ENVIRONMENTAL EQUIPMENT - ED	4358	992	1083	1505	1474	1524	1522	Continuing	Continuing
L41 WATER AND PETROLEUM DISTRIBUTION - ED	6058	3730	9763	4654	4079	5510	5497	Continuing	Continuing
L42 CAMOUFLAGE SYSTEM ED	364	327	345	486	1452	1495	995	0	6657
L43 ENGINEER SUPPORT EQUIPMENT - ED	556	848	2454	1247	1184	1207	1228	0	8958

A. Mission Description and Budget Item Justification: 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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	24333	30673	25115
Appropriated Value	24557	29573	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-247	0
b. SBIR / STTR	-696	0	0
c. Omnibus or Other Above Threshold Reductions Inflation	0	0	0
d. Below Threshold Reprogramming	-40	0	0
e. Rescissions	-226	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	40742
Current Budget Submit (FY 2003 PB)	23595	29326	65857

Funding - FY 2003: Increase provided by the Army supports to the Theater Support Vessel joint lease and test program which will provide Intra-Theater lift capability, 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)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev				PROJECT 194	
COST (In Thousands)	FY 2001 Actual	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	4939	4966	5590	3228	3118	5574	4049	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Mobile Electric Power (MEP) program was established to develop a Modernized, Standard Family of Mobile Electric Power Sources for All Services throughout the Department of Defense. Building on the device/component evaluations conducted in PE 0603804A project G11, this project supports the system development and demonstration of a series of innovative mobile electric power sources that are essential to the development and eventual fielding of modernized mobile electric power sources from 0.5 kW to 920 kW. These sources will ensure compliance with Federally mandated environmental statutes and significantly lower noise and thermal signatures (thereby improving battlefield survivability), improve fuel and electrical efficiency, reduce weight, enhance portability, improve reliability and maintainability and reduce operational and support costs.

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

FY 2001 Accomplishments:

- 3544 Continued hardware system development & demonstration for 100 & 200kW Tactical Quiet Generators (TQG). (Qty - 28).
- 1395 Completed fabrication and initiated test, evaluation and demonstration of 5kW Advanced Medium Mobile Power Sources (AMMPS) prototypes. (Qty - 1).

Total 4939

FY 2002 Planned Program

- 4436 Continue hardware system development and demonstration for 100/200kW TQG.
- 310 Complete Performance Specification for AMMPS.
- 220 Complete testing of AMMPS.

Total 4966

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
194

FY 2003 Planned Program

- 4826 Award two or more Phase 1 contracts for AMMPS (6 units from each contract).
- 764 Complete testing and transition 100/200kW TQG to production and deployment.

Total 5590

<u>B. Other Program Funding Summary</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>
0603804A - Logistics and Engineer Equipment Adv Dev G11	700	996	1560	1541	1549	1600	1507	Continuing	Continuing
OPA3, MA9800 Generators and Associated Equipmwent	91040	61835	79180	64895	64823	60869	56667	Continuing	Continuing

C. Acquisition Strategy: Developmental items in this project will transition to competitive procurement.

<u>D. Schedule Profile</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 Phase II system development and demonstration for fabrication of PPQT 100/200kW TQG	3Q						
Complete fabrication of 5kW AMMPS prototype	4Q						
Initiate testing of AMMPS prototype	4Q						
Complete AMMPS prototype testing		4Q					
Complete solicitation package for AMMPS		4Q					
AMMPS Milestone B			1Q				
Transition 100/200kW TQG to Procurement (Milestone C)			2Q				
Award Phase I contracts for AMMPS: Develop military system			2Q				
Initiate Phase I testing of AMMPS				2Q			
Award Phase II contract for AMMPS family					1Q		

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
194

D. Schedule Profile (continued)	<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 Man Portable Power (MPP) Program						1Q	
Complete testing of Phase II AMMPS						4Q	
Begin preparation of Performance Specification for Man Portable Power Program							1Q
AMMPS transition to production and deployment (Milestone C)							2Q

PPQT (Preproduction Quality Test)

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
194

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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 TQG	C-CPFF	Fermont & Gen Dyn Robotics Systems, Bridgeport, CT	3800	3184	3Q	1634	1Q	0		0	8618	8618
b . AMMPS(5-60kW)	C-CPFF	CECOM, Ft Belvoir, VA	3441	810	1Q	0		4245	2Q	4790	13286	13286
Subtotal:			7241	3994		1634		4245		4790	21904	21904

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	155	1Q	395	1Q	1412	3077	3077
b . 100/200kW TGQ	In-house	CECOM, Ft Belvoir, VA	409	210	1Q	183	1Q	0		0	802	802
Subtotal:			1139	595		338		395		1412	3879	3879

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng 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 . 100/200kW	TBD	TBD	0	0		2339	1Q	450	1Q	Continue	Continue	Continue
b . AMMPS(5-60kW)	TBD	TBD	75	0		155	1Q	0		Continue	Continue	Continue
Subtotal:			75	0		2494		450		Continue	Continue	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 . 100/200kW	In-house	CECOM, Ft Belvoir, VA	372	150	1Q	250	1Q	250	1Q	Continue	Continue	Continue
b . AMMPS(5-60kW)	In-house	CECOM, Ft Belvoir, VA	457	200	1Q	250	1Q	250	1Q	Continue	Continue	Continue
Subtotal:			829	350		500		500		Continue	Continue	Continue

Project Total Cost:			9284	4939		4966		5590		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev	PROJECT 461
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COST (In Thousands)	FY 2001 Actual	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	1398	6182	38780	10326	6831	3436	3028	0	75708

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). TSV will replace the Army's aging LSV and support the Army's intra theater transport mission. The Army is participating in the joint High Speed Vessel (HSV) lease and test program.

These systems support the Legacy-to-objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 612 Continued development of JMLS in preparation for the Military User Assessment(MUA).
- 786 Awarded contract for one Harbormaster Command and Control Center (HCCC) prototype, developed Program Documentation and began Verification Test.

Total 1398

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604804A - Logistics and Engineer Equipment - Eng
Dev**

PROJECT

461

FY 2002 Planned Program

- 1148 Complete HCCC Main Unit Prototype and conduct Developmental Testing.
- 5034 Army contribution to Theater Support Vessel (TSV) Joint lease/test program.

Total 6182

FY 2003 Planned Program

- 35334 Army Support for TSV joint lease/test program. Obtain Decision Review (pre milestone B Decision Point).
- 3446 Fabricate and conduct Developmental Test on the HCCC Remote Unit and conduct Operational Test on the HCCC System.

Total 38780

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
461

<u>B. Other Program Funding Summary</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, 0603804A,526, Marine Oriented Logistics, Advanced Development	2213	1995	1793	3822	3899	4080	3283	Continuing	Continuing
OPA 3, R97500, Causeway, Systems	26647	0	29673	0	0	0	0	0	62989
OPA 3, M11200, Logistic Support Vessel (LSV)	0	25260	0	0	0	0	0	0	47774
OPA 3, M11203, Theatre Support Vessel (TSV)	0	0	0	0	0	84043	79393	Continuing	Continuing

C. Acquisition Strategy: Developmental items in this project will transition to competitive procurement.

<u>D. Schedule Profile</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>
Rapidly Installed Breakwater (RIB) Awards		1-4Q	1-2Q				
Harbormaster Command & Control Center (HCCC) Contract Award	2-4Q		1-4Q				
Land Craft Utility (LCU) Parameters and Performance Characteristics		1-4Q	1-2Q				
Theater Support Vessel Joint Lease/Test program		1-4Q	1-4Q				
Operations & Support Cost Reduction Study				2-4Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604804A - Logistics and Engineer Equipment - Eng Dev

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 . RIB	FC-FP	Modern Technologies Inc, Warren, MI	477	0		0		0		0	477	477
b . JMLS	MIPR	Navy (PM JMLS), Hueneme, CA	1569	362	1-4Q	0		0		0	1931	1931
c . RIB	MIPR	Corps of Engineers (WES), Vicksburg, MI	756	0		0		0		0	756	756
d . LSV ESP/Upgrade	MIPR	Navy (NSWC), Suffolk, VA	251	0		0		0		0	251	251
e . HCCC	MIPR	Navy (NSWC), Suffolk, VA	0	0		653	2-3Q	1525	1-4Q	Continue	Continue	Continue
f . HCCC	MIPR	IOC, Rock Island Arsenal	0	150	1-4Q	0		0		Continue	Continue	Continue
g . HCCC	FC-FP	Conley & Associates, St.Louis, MO	0	264	1-4Q	0		0		0	264	264
h . TSV	MIPR	NSWC, Suffolk, VA	0	0		340	2-3Q	2264	1-4Q	Continue	Continue	Continue
i . LCU Recap	MIPR	NSWC, Suffolk, VA	0	0		0		0		0	0	0
j . TSV	MIPR	Bollinger/INCAT	0	0		2750	1-4Q	5453	1-4Q	Continue	Continue	Continue
k . TSV	MIPR	Bender/Austal	0	0		0		19544	1Q	0	19544	19544

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
461

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:			3053	776		3743		28786		Continue	Continue	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 . JMLS	MIPR	TACOM CBU, Warren, MI	23	100	1-4Q	0		0		0	123	123
b . RIB	MIPR	TACOM CBU, Warren, MI	25	0		0		0		0	25	25
c . HCCC	MIPR	TACOM CBU, Warren, MI	0	15	1-4Q	10	2-3Q	40	1-4Q	Continue	Continue	Continue
d . TSV	MIPR	TACOM CBU, Warren, MI	0	0		151	2-3Q	262	1-4Q	Continue	Continue	Continue
e . HCCC	MIPR	TACOM NET, Warren, MI	0	0		5	2-3Q	10	2-3Q	Continue	Continue	Continue
f . HCCC	MIPR	Safety Office, Warren, MI	0	0		10	2-3Q	50	1-4Q	Continue	Continue	Continue
g . TSV	MIPR	TACOM Safety Office	0	0		50	2Q	40	1Q	Continue	Continue	Continue
h . HCCC	MIPR	CASCOM	0	0		10	2-3Q	10	2-3Q	Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604804A - Logistics and Engineer Equipment - Eng Dev

461

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:			48	115		236		412		Continue	Continue	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 . JMLS	MIPR	TECOM , ATC, Aberdeen, MD	40	50	1-4Q	0		0		0	90	90
b . RIB	MIPR	TECOM , ATC, Aberdeen, MD	60	0		0		0		0	60	60
c . HCCC	MIPR	TECOM , ATC, Aberdeen, MD	0	50	1-4Q	180	2-3Q	500	1-4Q	0	730	730
d . TSV	MIPR	TECOM, ATC, Aberdeen, MD	0	0		150	1-4Q	170	1-4Q	Continue	Continue	Continue
e . TSV	MIPR	USATCFE, Ft. Eustis, VA	0	0		0		5500	1-4Q	0	5500	5500
f . HCCC	MIPR	Joint Interoperable Test Center, Ft. Huachuca, AZ	0	0		20	2-3Q	0		0	20	20
g . TSV	MIPR	CASCOM	0	0		175	1-4Q	232	2-3Q	Continue	Continue	Continue
h . TSV	MIPR	TARDEC	0	0		75	2-3Q	150	2-3Q	Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
461

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
i. HCCC	MIPR	DTC, Aberdeen, MD	0	0		0		1000	2-3Q	Continue	Continue	Continue
Subtotal:			100	100		600		7552		Continue	Continue	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. LSV	MIPR	PM Army Watercraft Systems , TACOM, Warren, MI	125	0		0		0		0	125	125
b. JMLS	MIPR	TARDEC, Warren, MI	287	195	1-4Q	0		0		0	482	482
c. RIB	MIPR	PM Force Projection R&D /TARDEC, Warren, MI	150	0		0		0		0	150	150
d. HCCC	MIPR	PM Force Projection R&D/TARDEC, TACOM, Warren, MI	0	212	1-4Q	130	2-3Q	155	1-4Q	Continue	Continue	Continue
e. TSV	MIPR	PM TSV, Warren, MI	0	0		1343	1-4Q	1665	1-4Q	Continue	Continue	Continue
f. HCCC	MIPR	PM Force Projection , Warren, MI	0	0		30	2-3Q	60	2-3Q	Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604804A - Logistics and Engineer Equipment - Eng Dev

461

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
g . HCCC	MIPR	AB TECH	0	0		100	2-3Q	150	2-4Q	0	250	250
Subtotal:			562	407		1603		2030		Continue	Continue	Continue
Project Total Cost:			3763	1398		6182		38780		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev				PROJECT H01	
COST (In Thousands)	FY 2001 Actual	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	791	2631	4422	4240	4341	4771	4858	0	35756

A. Mission Description and Budget Item Justification: This project supports the System Development and Demonstration (SDD) 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 SDD efforts prior to FY01 were funded in this H01 project line before being moved to project H02 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. SDD 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 2001 Accomplishments:

- 53 Conducted market surveillance for Construction Equipment (CE).
 - 133 Conducted market investigations and update specifications for reprocurments of CE.
 - 605 Supported development of and the revision of CE acquisition documents required prior to milestone "C" decisions.
- Total 791

FY 2002 Planned Program

- 97 Conduct market surveillance for CE.
- 194 Conduct market investigations and update of specifications for reprocurments 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 for SEE Upgrade Feasibility.
- 100 LOG demo of Interim High Mobility Engineer Excavator (IHMEE).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604804A - Logistics and Engineer Equipment - Eng
Dev**

PROJECT

H01**FY 2002 Planned Program (Continued)**

- 1150 Prototype contract and hardware development for Objective High Mobility Engineer Excavator (OHMEE).

Total 2631

FY 2003 Planned Program

- 193 Conduct market surveillance.
- 254 Conduct market investigations and update specifications for reprocurments of CE.
- 245 Support development of and the revision of CE acquisition documents required prior to Milestone "C" decisions.
- 2360 R&D contracts execution for OHMEE.
- 1200 Prototype testing for OHMEE (6 prototypes).
- 170 Skid steer R&D contract and hardware development.

Total 4422

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng
Dev

PROJECT
H01

<u>B. Other Program Funding Summary</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>
OPA3, R02800, Scraper, Earthmoving 14-18 Cu	0	0	0	3070	8048	12951	43078	Continuing	Continuing
OPA3, R03801, Grader, Mtzd, Hvy	0	0	3854	7583	9557	14878	17196	8910	61978
OPA3, R05900, High Mobility Engineer Excavator (HMEE)	0	4996	5014	5005	8508	8526	8910	Continuing	Continuing
OPA3, M08100, Plant, Asphalt Mixing	0	1999	2006	2003	1320	0	0	0	7328
OPA3, ML5350, Item Less than \$5M (Construction Equipment)	6575	12341	12880	6445	0	7646	6435	Continuing	Continuing

C. Acquisition Strategy: OHMEE - Competitive RDTE followed by competitive procurement.

Construction Equipment- All RDT&E followed by competitive procurement.

<u>D. Schedule Profile</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>
Log Demo		3Q					
Market Surveillance	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Market Investigations	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Acquisition documents	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
OHMEE SDD Contracts		3-4Q	1-4Q				
OHMEE Testing			1-4Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev **PROJECT**
H01

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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/Matrix Support	MIPR	TACOM, Warren, MI	7424	628	1-4Q	590	1-4Q	245	1-4Q	Continue	Continue	Continue
b . TARDEC	In-House	TARDEC, Warren, MI	540	110	1-4Q	194	1-4Q	254	1-4Q	Continue	Continue	Continue
c . OHMEE SDD Contract	FFP	TBD	839	0		1150	3-4Q	2360	1-4Q	6310	10659	6310
d . Skid Steer	FFP	TBD	0	0		0		170	1-4Q	0	170	170
Subtotal:			8803	738		1934		3029		Continue	Continue	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 . Studies for Future Capabilities	In House	TARDEC, Warren, MI	0	53	1-4Q	97	1-4Q	193	1-4Q	Continue	Continue	Continue
Subtotal:			0	53		97		193		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604804A - Logistics and Engineer Equipment - Eng Dev

H01

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 Prep	MIPR	APG, Aberdeen, MD	1121	0		500		1200	1-4Q	Continue	Continue	Continue
b . Log Demo			0	0		100	3Q	0		0	100	100
Subtotal:			1121	0		600		1200		Continue	Continue	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
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			9924	791		2631		4422		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev				PROJECT H02	
COST (In Thousands)	FY 2001 Actual	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	618	1105	1831	1979	1975	2491	1989	0	12320

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) for the Interim Brigade Combat Team (IBCT).

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

FY 2001 Accomplishments:

- 100 Conducted market investigation for Anchorage System (AS).
- 518 Conducted a design analysis to assess the merits of current boats using rebuilt boat engines versus more powerful commercially available boats.

Total 618

FY 2002 Planned Program

- 600 Procure representative samples for use in testing Anchorage System.
- 505 Conduct market investigation for Access Egress Roadway System and Line of Communication Bridge.

Total 1105

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
H02

FY 2003 Planned Program

- 631 Perform testing of AS.
- 1200 Perform Operational Testing on the REBS.

Total 1831

<u>B. Other Program Funding Summary</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>
OPA3, M27200 Float Bridge Propulsion	1924	1938	6427	7007	9087	6993	6984	Continuing	Continuing
OPA3, G82402 Rapidly Emplaced Bridging Sys	3931	4996	9993	9970	9950	0	0	Continuing	Continuing

C. Acquisition Strategy: Not applicable for this item.

<u>D. Schedule Profile</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>
AS Market Investigation complete	3Q						
Conduct Boat Design Analysis	3-4Q						
Procure AS Representatives Samples		3Q					
AE Market Investigation complete		3Q					
AS Testing			3Q				
REBS Testing			2Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604804A - Logistics and Engineer Equipment - Eng Dev

H02

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	SS-FFP	Eisenwerke Kaiserslautern GmbH, Kaiserslautern, GE	0	0		600	3Q	0		0	600	600
b . PM/Matrix Support	MIPR	TACOM, Warren, MI	332	618	3Q	505	3Q	0		0	1455	1455
Subtotal:			332	618		1105		0		0	2055	2055

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)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604804A - Logistics and Engineer Equipment - Eng Dev

H02

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		631	3Q	0	631	631
b . REBS	MIPR	APG, Aberdeen, MD	0	0		0		1200	2Q	0	1200	1200
Subtotal:			0	0		0		1831		0	1831	1831

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:			332	618		1105		1831		0	3886	3886
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev	PROJECT H14
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COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
H14 MATERIALS HANDLING EQUIPMENT - ED	572	591	1589	592	590	598	597	0	8669

A. Mission Description and Budget Item Justification: This project supports development of Material Handling Equipment (MHE) that support Combat Service Support units with MHE for world wide rapid movement of supplies including container handling equipment, forklifts, and other cargo handling related items. Necessary efforts include validating requirements, developing acquisition strategies, developing performance specifications and test and evaluation planning.

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

FY 2001 Accomplishments:

- 514 Prepared of program documentation for Non-Developmental Item (NDI) Material Handling Equipment (MHE) procurements.
 - 58 Updated performance specifications for use in upcoming NDI MHE procurements.
- Total 572

FY 2002 Planned Program

- 250 Prototype rebuild of 6K Variable Reach Rough Terrain Forklift Truck (VRRFTLT) for upgrade to 10K forklift.
 - 300 Preparation of solicitation package for All Terrain Lifting Army System (ATLAS) II Prototypes.
 - 41 Market Investigations.
- Total 591

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604804A - Logistics and Engineer Equipment - Eng
Dev**

PROJECT

H14

FY 2003 Planned Program

- 350 Programmatic support of ATLAS II.
- 450 Lease of All Terrain Lifting Army System (ATLAS) II.
- 500 Testing of ATLAS II Prototypes.
- 100 Program support of 6K Variable Reach Rough Terrain Forklift Truck (VRRTFLT).
- 100 Testing of rebuilt prototype 6K VRRTFLT.
- 89 Market investigation for future 4K Rough Terrain Forklift Truck (RTFLT) procurement.

Total 1589

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
H14

<u>B. Other Program Funding Summary</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, 0603804.DG14, Logistics Support Equipment, Advance	182	198	195	195	195	200	200	Continuing	Continuing
OPA3, M41200, Forklift, DE, PT, RT, 50K lbs.(RTCH)	39664	43051	49065	38189	20257	68811	68678	Continuing	Continuing
OPA3, M41800, All Terrain Lifting Army System (ATLAS)	30283	20916	21963	23179	23289	26013	32293	Continuing	Continuing
OPA3, X00900, Rough Terrain Container Crane(RTCC)	2038	0	0	0	0	0	0	Continuing	Continuing
OPA3, ML5365, Items Less Than \$5.0M Material Handling Equipment (MHE)	3201	477	495	1134	2055	1398	998	Continuing	Continuing
OPA3, M41900, Material Handling Equipment (MHE) Extended Service Program (ESP)	0	1000	2304	1001	1000	998	998	Continuing	Continuing

C. Acquisition Strategy: RDT&E Logistics Support Engineering Equipment - Competitive formal source selection for prototype equipment. Rough Terrain Container Handler (RTCH) - Competitive procurement for prototype and sole source for production using NDI integration of commercial components. ATLAS - The current contract was competitive award; FY01 new start to be sole source. RTCC - Sole source procurement to original manufacturer. Items less than \$5M - Competitive procurements for various MHEs.

<u>D. Schedule Profile</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>
Testing of development systems			2-4Q	2-4Q			
* Milestone Completed							

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev **PROJECT**
H14

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 . PM/Matrix Support	In-House	TACOM, Warren, MI	99	322	1-4Q	156	1-4Q	350	1-3Q	Continue	Continue	Continue
b . TARDEC	In-House	TARDEC, Warren, MI	0	250	1-4Q	185	1-4Q	189	1-4Q	Continue	Continue	Continue
c . ATLAS Contract	SSFP	TBD	0	0		0		450	2Q	0	450	450
d . 6K VRRFTFLT Contract	SSFP	TRAX International, Port Washington, WI	0	0		250	3Q	0		0	250	250
Subtotal:			99	572		591		989		Continue	Continue	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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev **PROJECT**
H14

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 . ATLAS	MIPR	APG, Aberdeen, MD	0	0		0		500	2-4Q	Continue	Continue	Continue
b . 6K VRRTFLT	MIPR	APG, Aberdeen, MD	0	0		0		100	3-4Q	Continue	Continue	Continue
Subtotal:			0	0		0		600		Continue	Continue	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
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			99	572		591		1589		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev					PROJECT L39			
COST (In Thousands)	FY 2001 Actual	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	4358	992	1083	1505	1474	1524	1522	Continuing	Continuing	

A. Mission Description and Budget Item Justification: Project develops for transition to procurement Large Capacity Field Heater (LCFH) and Improved Environmental Control Units (IECU) 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 L41.

FY 2001 Accomplishments:

- 44 Completed MS II review for three horizontal IECU configurations (9k, 18k, & 36kBTUH).
- 1349 Develop designs for three horizontal Improved Environmental Control Unit (IECU) configurations.
- 720 Fabricate 36 (12 each 9k, 18k, & 36kBTUH) Engineering Development Models of three horizontal IECU configurations for Production Quality Testing and User Evaluation.
- 1165 Initiate Production Qualification Testing (PQT) of IECU Engineering Development Models.
- 700 Engineering and management support of IECU Program.
- 150 Complete MS B documentation for the Large Capacity Field Heater (LCFH) and conduct MS B program review.
- 230 Engineering and management support of for LCFH Program.

Total 4358

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604804A - Logistics and Engineer Equipment - Eng
Dev**

PROJECT

L39

FY 2002 Planned Program

- 300 Engineering and management support for LCFH Program.
- 400 Engineering and management support for IECU Program.
- 100 Complete PQT and User Evaluation of IECU Engineering Development Models.
- 192 Develop design for LCFH.

Total 992

FY 2003 Planned Program

- 140 Prepare documentation for and conduct MS C program review for LCFH Program.
- 276 Conduct PQT and IOT&E of LCFH engineering development models.
- 80 Support IOT&E of IECU engineering development models.
- 147 Engineering & management support for LCFH Program.
- 280 Engineering & management support for IECU Program.
- 160 Prepare documentation for 9k, 18k, & 36kBTUH Horizontal IECU configurations, and conduct Milestone III program review.

Total 1083

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L39

<u>B. Other Program Funding Summary</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>
OPA3, MF9000, Environmental Control Units (ECU)	6290	5047	14824	13675	18364	9078	8141	Continuing	Continuing

C. Acquisition Strategy: Development and transition to competitive procurement for all items under this project.

<u>D. Schedule Profile</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 II for IECU	1Q						
Release contract Request For Proposals (RFP) for IECU	2Q						
Award Engineering & Manufacturing Development (EMD) contract for IECU	4Q						
Complete Testing for IECU			2Q				
MS III/Type Classification for IECU			2Q				
LCFH - MS B		1Q					
LCFH - SDD Contract Award			3Q				
LCFH - Complete SDD Models			1Q				
LCFH - Complete PQT and IOT&E			3Q				
LCFH - Conduct MS C			4Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604804A - Logistics and Engineer Equipment - Eng Dev

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 . Large Capacity Field Heater SDD	C-CPFF	TBD	3038	0		203	1Q	0		0	3241	3241
b . LCFH Engr	In-house	US Army CECOM, Ft. Belvoir, VA	99	359	1-4Q	170	1-4Q	140	1-4Q	Continue	Continue	Continue
c . Engr. IECU SDD	In-house	US Army CECOM, Ft. Belvoir, VA	266	474	1-4Q	240	1-4Q	195	1-3Q	Continue	Continue	Continue
d . IECU SDD	C-CPFF	TBD	0	2014	2Q	0	1Q	0		0	2014	2014
Subtotal:			3403	2847		613		335		Continue	Continue	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 . Engr & Mgt Support of IECU	MIPR	US Army CECOM, Ft. Belvoir, VA	0	20	3Q	0		0		0	20	20
Subtotal:			0	20		0		0		0	20	20

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev **PROJECT**
L39

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 (Large Capacity Field Heater)	C-CPFF	TBD	0	0		0	1Q	130		0	130	130
b . IOT&E (Large Capacity Field Heater)	MIPR	ATEC, Alexandria, VA	0	0		0		76	1-4Q	0	76	76
c . Engineering tests of IECU prototypes	C-CPFF	Various	97	1115	3Q	89	1Q	0		0	1301	1301
d . User Evaluation of IECU	MIPR	ATEC, Alexandria, VA	0	0		20	1-4Q	115	1-4Q	0	135	135
Subtotal:			97	1115		109		321		0	1642	1642

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	147	1-4Q	Continue	Continue	Continue
b . IECU	In-house	US Army CECOM, Ft Belvoir, VA	38	236	1-4Q	140	1-4Q	280	1-4Q	Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE **PROJECT**
0604804A - Logistics and Engineer Equipment - Eng Dev **L39**

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:			81	376		270		427		Continue	Continue	Continue

Project Total Cost:			3581	4358		992		1083		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev				PROJECT L41	
COST (In Thousands)	FY 2001 Actual	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	6058	3730	9763	4654	4079	5510	5497	Continuing	Continuing

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 2001 Accomplishments:

- 1880 Continued testing/evaluation of Petroleum Quality Analysis System (PQAS) System Development & Demonstration (SDD) prototypes.
- 302 Established system performance requirements and developed purchase description for Petroleum Quality Surveillance Lab (PQSL).
- 1686 Awarded Rapidly Installed Fuel Transfer System (RIFTS) command and control module and high pressure hose contracts.
- 100 Continued program management and general support.
- 1590 Continued 1500 Gallons Per Hour (GPH) Tactical Water Purification System (TWPS) SDD effort.
- 200 Conducted investigation of Nuclear, Biological and Chemical (NBC) contamination removal technology for water purification systems.
- 300 Evaluated Pre-Planned Product Improvements (P3I) for water purification systems.

Total 6058

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604804A - Logistics and Engineer Equipment - Eng
Dev**

PROJECT

L41

FY 2002 Planned Program

- 300 Evaluate commercial water treatment components for Pre-Planned Product Improvements (P3I) for water purification systems.
- 318 Complete PQAS testing and conduct Milestone C IPR.
- 121 Develop PQSL program management documents for milestone decision and prepare Request For Proposal (RFP).
- 1328 Initiate SDD contract for RIFTS.
- 264 Program management and support.
- 399 Develop Load Handling System (LHS) Modular Fuel Farm (LMFF) prototype.
- 125 Complete 1500 TWPS SDD effort.
- 875 Conduct 1500 TWPS Operational Test (OT).

Total 3730

FY 2003 Planned Program

- 300 Conduct PQAS P3I.
- 942 Conduct PQSL Milestone decision In Process Review (IPR).
- 7221 RIFTS test and evaluation.
- 300 Program management and support.
- 1000 Complete LMFF prototype fabrication and initiate developmental testing.

Total 9763

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev	PROJECT L41
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<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, 0603804/K41, POL Distribution Equipment Advanced Development	2152	2304	7871	3885	3523	2912	2904	Continuing	Continuing
OPA 3, MB6400, Quality Surveillance Equipment	2876	7641	7522	5326	4785	5208	4989	Continuing	Continuing
OPA 3, R05600, Water Purification Systems	30383	39016	18204	21912	20151	0	0	Continuing	Continuing

C. Acquisition Strategy: Development of and transition to competitive procurement for all items under this project.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Awarded contract for the RIFTs.	2Q						
Evaluate P3I for water purification systems	1-4Q	1-4Q					
Complete 1500 TWPS SDD contract, PQT, and conduct special Low Rate Initial Production (LRIP) IPR.	1-4Q	1-2Q					
Complete Developmental Test/Operational Test (DT/OT) of pre-production PQAS prototypes.		4Q					
Conduct PQAS Milestone C IPR.		4Q					
Award command & control module and hose increment for RIFTs. Test & Evaluate.	4Q						
Complete PQAS Initial Operational Test & Evaluation (IOT&E) and materiel release.			3Q				
SDD contract, test, and evaluate for RIFTs.		1-2Q	1-4Q				
Conduct PQSL Milestone B IPR.		4Q					
Award PQSL contract and develop prototypes.			1-4Q				
Conduct TWPS IOT&E		4Q	1Q				
Perform alternative of analysis of water generation unti.		3-4Q	1Q				
Continue Development of LMFF		1-4Q	1-4Q				
Develop LMFF Prototypes		1-2Q					

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604804A - Logistics and Engineer Equipment - Eng Dev

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	477	2Q	216	2Q	100	2Q	Continue	Continue	Continue
b . PQAS	MIPR	Rock Island Arsenal, Rock Island, IL	1684	990	2Q	0		0		0	2674	2674
c . PQSL	CFP	TBD	0	0		0		742	2Q	Continue	Continue	Continue
d . PQSL	In-House	TARDEC, Warren, MI	0	162	1Q	66	1Q	100	1Q	Continue	Continue	Continue
e . RIFTS	In-House	TARDEC, Warren, MI	150	131	1Q	200	1Q	200	1Q	Continue	Continue	Continue
f . RIFTS	C-CPFF	Various	1793	1555	4Q	628	2Q	6021	2Q	Continue	Continue	Continue
g . 1500 GPH TWPS	In-House	TARDEC, Warren, MI	0	335	2Q	30	2Q	0		0	365	365
h . 1500 GPH TWPS hardware	C-CPFF	SFA, Inc, Frederick, MD	3325	915	2Q	0		0		0	4240	4240
i . Water Purification P31	In-House	TARDEC, Warren, MI	0	150	2Q	40	2Q	0		0	190	190
j . Water Purification P31	Purchase Orders	TBD	0	0		100	2Q	0		0	100	100
k . LMFF	C-CPFF	TBD	0	0		300	2Q	750	2Q	Continue	Continue	Continue
l . LMFF	In-House	TARDEC, Warren, MI	0	0		99	1Q	100	1Q	Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604804A - Logistics and Engineer Equipment - Eng Dev

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
			7107	4715		1679		8013		Continue	Continue	Continue
Subtotal:												

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	90	2Q	52	2Q	0		0	142	142
b . PQSL	In-House	TACOM, Warren, MI	0	0		40	2Q	50	1-2Q	Continue	90	90
c . Water Purification P3I	MIPR	CHPPM, APG, MD	0	0		25	2Q	0		0	25	25
d . Water Purification P3I	In-House	TACOM, Warren, MI	0	0		50	1Q	0		0	50	50
Subtotal:			0	90		167		50		Continue	307	307

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng 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/OT	MIPR	TECOM, Aberdeen, MD	175	323	2Q	0		0		0	498	498
b . PQAS	MIPR	APG, Aberdeen, MD	0	0		50	2Q	0		0	50	50
c . PQAS IOT&E	MIPR	TEXCOM, Ft Hood, Texas	0	0		0		200	1Q	Continue	Continue	Continue
d . RIFTS	MIPR	TECOM, Aberdeen, MD	0	0		500	2Q	1000	2Q	Continue	Continue	Continue
e . 1500 GPH TWPS	MIPR	NFESC, Port Huaneme, CA	0	340	2Q	0		0		0	340	340
f . Water Purification P3I	In-House	TARDEC, Warren, MI	0	150	2Q	50	1Q	0		0	200	200
g . Water Purification P3I	MIPR	Dugway PG, Dugway, MD	0	200	3Q	0		0		0	200	200
h . Water Purification P3I	MIPR	NFESC, Port Hueneme, CA	0	0		35	1Q	0		0	35	35
i . 1500 GPH TWPS	MIPR	ATC, APG, MD	0	0		35	2Q	0		0	35	35
j . 1500 GPH TWPS	MIPR	TEXCOM, Ft Hood, Texas	0	0		935	3Q	0		0	935	935
k . LMFF	MIPR	ATEC, Alexandria, VA	0	0		0		150	2Q	Continue	Continue	Continue
Subtotal:			175	1013		1605		1350		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604804A - Logistics and Engineer Equipment - Eng Dev

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 . PQSL	In-House	TARDEC, Warren, MI	0	140	2Q	15	1Q	50	1Q	Continue	205	Continue
b . Program Management Support	In-House	TACOM, Warren, MI	341	100	1Q	264	1Q	300	2Q	Continue	1005	Continue
Subtotal:			341	240		279		350		Continue	1210	Continue

Remarks: Not Applicable

Project Total Cost:			7623	6058		3730		9763		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev	PROJECT L43
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COST (In Thousands)	FY 2001 Actual	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	556	848	2454	1247	1184	1207	1228	0	8958

A. Mission Description and Budget Item Justification: Project develops Engineer Support Equipment (ESE) such as small boats, diving equipment, well drilling modules, woodworking shops, 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. In FY03, this project also develops Maintenance equipment associated with Sets, Kits, Outfits and Tools (SKOTs).

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

FY 2001 Accomplishments:

- 93 Conducted market investigation, develop performance specifications and conduct preproduction award effort for diving equipment.
- 319 Development of the engineering and prototype models for large generator sets and associated equipment.
- 144 Conducted market investigation, develop performance specifications and conduct preproduction award effort for well drilling module.

Total 556

FY 2002 Planned Program

- 104 Conduct market investigation, develop performance specifications and conduct preproduction award effort for diving equipment.
- 744 Award SDD contract for well drilling module.

Total 848

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604804A - Logistics and Engineer Equipment - Eng
Dev**

PROJECT

L43**FY 2003 Planned Program**

- 520 Conduct market investigation, develop performance specifications and conduct preproduction award effort for diving equipment.
- 1000 Conduct prototype testing of well drilling module.
- 160 Prepare Production Solicitation for well drilling module.
- 180 Conduct market investigation, engineering effort, and develop performance specifications for woodworking shop.
- 220 Fabrication of prototype for woodworking shop.
- 174 Conduct market investigation, engineering effort, and develop performance specifications for maintenance equipment (tools).
- 140 Conduct market investigation, engineering effort, and develop performance specifications for Organizational / General Purpose Shop Set.

- 60 Conduct Life Cycle Market Investigations for Engineer Support Equipment (ESE) Sets, Kits, Outfits and Tools (SKOTs).

Total 2454

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng
Dev

PROJECT
L43

<u>B. Other Program Funding Summary</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>
OPA 3, MA8050, Items Less than \$5.0M (CSS-Equipment)	1892	3973	0	1551	10674	0	0	0	22418
OPA 3, MA8800, Items Less than \$5.0M (Generator Equipment)	0	675	0	839	640	0	0	0	2154
OPA 3, M56400, Generator Set, DE, 750KW 60HZ	0	7999	8768	10713	10775	3996	0	0	42251
OPA 3, ML5325, Items Less than \$5.0M (Engineering Support Equipment)	1892	0	7918	8693	8326	8369	6671	Continuing	Continuing

C. Acquisition Strategy: SDD and transition to production.

<u>D. Schedule Profile</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>
Development of prototype large generator sets	3Q						
Conduct market investigation for well drilling module	4Q						
Award SDD contract for well drilling module		3Q					
Conduct testing for well drilling module			3Q				
Prepare solicitation for well drilling module			4Q				
Conduct market investigation and testing for diving equipment	1-4Q	1-4Q	2Q				
Conduct market investigation for woodworking shop			1-2Q				
Fabrication of prototype of woodworking shop			2-4Q				
Conduct Life Cycle Market Investigations for ESE SKOTs			1-4Q				
Conduct Market investigation for Organizational / General Purpose Shop Set			1-4Q				
Conduct Market investigation for maintenance equipment (Tools)			1-4Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L43

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Diving equipment product development	IN-HOUSE	Rock Island Arsenal, Rock Island, IL	52	93	1Q	104	1Q	520	1Q	Continue	Continue	Continue
b . Generator production development	IN-HOUSE	CECOM, Ft Belvoir, VA	0	319	2Q	0		0		0	319	319
c . Well drilling module product development	IN-HOUSE	TACOM, Warren, MI	0	144	1Q	0		160	4Q	Continue	Continue	Continue
d . Well drilling SDD contract	C-CPFF	TBD	0	0		744	3Q	0		0	744	744
e . Woodworking shop product development	IN-HOUSE	Rock Island Arsenal, Rock Island, IL	0	0		0		400	1-4Q	0	400	400
f . Maintenance Equipment (Tools)	IN-HOUSE	Rock Island Arsenal, Rock Island, IL	0	0		0		174	1-4Q	Continue	Continue	Continue
g . Organizational / General Purpose Shop Set	IN-HOUSE	Rock Island Arsenal, Rock Island, IL	0	0		0		140	1-4Q	Continue	Continue	Continue
h . Life Cycle Market Investigations for ESE SKOTs	IN-HOUSE	Rock Island Arsenal, Rock Island, IL	0	0		0		60	1-4Q	Continue	Continue	Continue
Subtotal:			52	556		848		1454		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L43

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award 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	MIPR	APG, Aberdeen, MD	0	0		0		1000	3Q	Continue	Continue	Continue
Subtotal:			0	0		0		1000		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604804A - Logistics and Engineer Equipment - Eng Dev

L43

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:			52	556		848		2454		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev								
COST (In Thousands)		FY 2001 Actual	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		62557	118643	82238	76918	62100	45091	21177	Continuing	Continuing
097	INTEROP & STANDARDS COMPLIANCE EXPERIMENT & TEST	1843	1896	1800	1578	1600	1603	1605	0	18605
098	TAC RADIO ACCESSORIES	5101	0	0	0	0	0	0	0	5552
485	INFO STANDARDS INTEROP ENG/JOINT INTEROP CERT	3866	3966	3897	3403	3455	3604	3611	0	34686
589	ARMY SYS ENGINEERING & WARFIGHTING TECH SUP	8137	8381	8625	7441	7364	7645	7646	0	76796
591	WPN SYS TECH ARCH (WSTA)	2361	2386	2372	1990	1959	1956	1952	0	17316
615	JTRS-GROUND DOMAIN INTEGRATION	27447	93238	63551	61136	46335	28797	4882	Continuing	Continuing
629	TACTICAL COMMUNICATIONS SYSTEM - ENGINEERING DEVEL	13802	8776	1993	1370	1387	1486	1481	0	32083

A. Mission Description and Budget Item Justification: This Program Element (PE) supports efforts to develop interoperability of Army programs and products, horizontally and vertically for the digitized battlefield. Project D097 supports development of the C4I Interoperability Network. Also included is the Army portion of engineering development efforts in support of the Combat Survivor Evader Locator System (CSEL). 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 (ASE) & Warfighter Technical Support provides essential technology expertise on all Systems Engineering and Technical Architecture (SE/TA) matters critical to gain Information Dominance and foster interoperability among all Army systems. The Weapons Systems Technical Architecture, 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 Army Joint Tactical Radio System (JTRS) Cluster 1 and Step 2C programs and the Near Term Digital Radio System (NTDRS). 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 phase of development. 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).

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems - Eng Dev

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	61249	122644	59138
Appropriated Value	61816	119644	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-1001	0
b. SBIR / STTR	-1693	0	0
c. Omnibus or Other Above Threshold Increases	0	0	0
d. Below Threshold Reprogramming	3000	0	0
e. Rescissions	-566	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	23100
Current Budget Submit (FY 2003 PB)	62557	118643	82238

FY 2001 increase of \$3000K to Project D098 Tactical Radio Accessories for Tactical Unmanned Aerial Vehicle (TAUV) efforts.
 FY 2003 funding reflects increase to Project D615 in order to accelerate JTRS product development.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev						PROJECT 097		
COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
097 INTEROP & STANDARDS COMPLIANCE EXPERIMENT & TEST		1843	1896	1800	1578	1600	1603	1605	0	18605

A. Mission Description and Budget Item Justification: Interoperability and Standards Compliance Experimentation & Testing: The increased combat power of the Objective Force, as defined by the Chief of Staff of the Army’s Transformation Campaign Plan (TCP), will derive directly from the information superiority of network/ knowledge centric warfare and the ability to be fully “interoperable as a member of the joint, multinational, interagency team.” In addition, attaining full interoperability will be critical to meet the Army’s Division XXI, Corps XXI, Army XXI, Army 2010 and JV 2020 plans. To attain this significantly increased combat power, it is essential that interoperability issues be identified early in the life cycle of systems, through the conduct of Army interoperability assessments and JTA standards compliance testing. This project, in accordance with the TCP, “establishes a mechanism to ensure all digitally capable material is fully operational, compatible and interoperable” before fielding. In particular, it provides the resources for a virtual command, control, communications, computer, intelligence, electronic warfare and sensor (C4IEWS) Digital Integration Lab (DIL) which is utilized to integrate/assess the Army’s programs and products, horizontally and vertically for the digitized battlefield, by replicating current and future tactical battlefield environments (including Army, Joint and Allied interoperability environments). To attain this goal, it utilizes on-site and electronically interconnected remote C4IEWS systems, labs/ test beds, field/integration sites, developers facilities, test tools and Battle Labs to enable/facilitate comprehensive evaluations of new prototypes, evolutionary system developments, new technologies, commercial products, software and systems interoperability. It serves as the Army’s messaging standards conformance authority in support of the Army Systems Engineer and the Central Test Support Facility (CTSF). This program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 380 Provided external DIL connectivity to remote battlefield digitization sites for digitization experimentation and tests.
- 602 Upgraded, operated and supported 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 Acquired/updated DIL hardware and software interfacing systems, test tools, and supporting systems for 1st Digitized Division and TA/SA evaluations
- 127 Acquired DIL automated scenario drivers and test analysis tools for FDD evaluations and TA/SA evaluations.

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604805A - Command, Control, Communications
Systems - Eng Dev**

097

FY 2001 Accomplishments: (Continued)

- 150 Developed Combat Net Radio (CNR) Protocol Test Tool (Monitor/Decoder) development to support Sync Mode, common Protocol Test Tool (PTT) components.
- 140 Developed VTT Message Generation Scripting
- 100 Developed CNR Protocol Test Tool (Conformance Tester V3)
- 50 Developed CNR Protocol Test Tool (Network Analyzer V2); developed & supported Net troubleshooting, Net performance & analysis.
- 88 Develop VMF Test Tool and provided on site support
- 106 Developed & fielded VMF Reissue 4 VMF tool database

Total 1843

FY 2002 Planned Program

- 380 Provide external DIL connectivity to remote battlefield digitization sites for digitization experimentation, and tests.
- 685 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 Combat Net Radio (CNR) Protocol Test Tool (Monitor/Decoder) development to support Sync Mode, common PTT components.
- 100 CNR Protocol Test Tool (Conformance Tester V4) development; develop version 220D.
- 50 CNR 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 1896

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604805A - Command, Control, Communications
Systems - Eng Dev**

097

FY 2003 Planned Program

- 350 Provide external DIL connectivity to remote battlefield digitization sites for digitization experimentation and tests.
- 600 Upgrade, operate and support secure DIL Evaluation & Certification Testbed and other facilities supporting experiments/certifications needed for battlefield digitization for Army SDD & FDC, 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 TA/SA evaluations.
- 100 Acquire DIL automated scenario drivers and test analysis tools for SDD, FDC and Objective Force evaluations TA/SA evaluations.
- 120 Combat Net Radio (CNR) Protocol Test Tool (Monitor/Decoder) development to support Sync Mode, common PTT components.
- 100 CNR Protocol Test Tool (Conformance Tester V5) development; develop latest approved version of CNR standard.
- 52 CNR Protocol Test Tool (Network Analyzer V4) development; supports Net troubleshooting & Net performance.
- 192 VMF Test Tool development and On site support
- 70 Develop/Field VMF Reissue 6 VMF tool database
- 116 VTT Message Generation Scripting

Total 1800

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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
Systems - Eng Dev

PROJECT
097

<u>D. Schedule Profile</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>
Maintain and upgrade remote connectivity between digitization sites	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
DIL Testbed support for FDD, JCF AWE, SDD, FDC & Other AWE/ATD's/ACTD's	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Acquire DIL testbed systems to support message compliance certification	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Develop, maintain, certify Protocol test tool (PTT)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Develop, maintain, certify VMF test tool (VTT)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

097

- Eng Dev

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)	In House	USACECOM, Fort Monmouth, NJ	1758	800	1-4Q	836	1-4Q	897	1-4Q	Continue	Continue	0
b . Travel	In House	USACECOM, Fort Monmouth, NJ	51	15	1-4Q	15	1-4Q	15	1-4Q	Continue	Continue	0
Subtotal:			1809	815		851		912		Continue	Continue	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	2131	467	1-4Q	463	1-2Q	448	1-2Q	Continue	Continue	0
b . Development Support	C/CPFF	BAE, Fort Monmouth, NJ	40	40		0		0		Continue	Continue	0
c . Development Support	C/CPFF	CSC, Fort Monmouth, NJ	300	150	1-3Q	157	1-2Q	129	1-4Q	Continue	Continue	0
d . Development Support	C/CPFF	C3I, Fort Monmouth, NJ	415	245	1-4Q	248	1-4Q	141	1-2Q	Continue	Continue	0
e . Security Engineering	C/CPFF	Nations, Fort Monmouth, NJ	51	30	1-3Q	30	1-2Q	30	1Q	Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

097

- Eng Dev

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, NJ	550	96	1-3Q	107	1-4Q	100	1-4Q	Continue	Continue	0
g . Development Support	C/CPFF	BAH, Fort Monmouth, NJ	0	0		40	1-2Q	40	1-4Q	Continue	Continue	0
Subtotal:			3487	1028		1045		888		Continue	Continue	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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604805A - Command, Control, Communications Systems
- Eng Dev

PROJECT
097

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:			5296	1843		1896		1800		Continue	Continue	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev				PROJECT 485	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
485 INFO STANDARDS INTEROP ENG/JOINT INTEROP CERT	3866	3966	3897	3403	3455	3604	3611	0	34686

A. Mission Description and Budget Item Justification: Evaluate system's interoperability, in support of DISC4's (Army CIO's) Army Enterprise Architecture (AEA) Program, as cited in the AEA Master Plan, fulfilling the Clinger-Cohen Act's mandate of developing sound integrated Information Technology (IT) architectures and the Army's Software Blocking Policy. The increased combat power of the Objective Force, as defined by the CSA's Transformation Campaign Plan (TCP), will be dependent on the information superiority of network & knowledge centric warfare and the ability of systems to be fully "interoperable as a member of the joint, multinational, interagency team." It identifies and reduces interoperability issues earlier in the life cycle by intra-Army/Joint/combined experiments, certifications, and assessments and through the establishment & sustainment of common standards. Specifically, this project resources the Army's messaging standards conformance authority in assessing compliance with the Joint Technical Architecture (JTA-A), in meeting the war fighter information exchange requirements and in facilitating their interoperability. Also it resources, IAW the JTA-A, the development and maintenance of the following information standards: Variable Message Format (VMF) & Combat Net Radio (CNR) protocol, which support Army/Joint ground operations; TADILs, which support Air Defense operations; and US Message Text Format (USMTF), which support Intel and Commanders operations. It provides the Army's lead for configuration management functions of these standards and test tools at both Army and Joint levels. This project resources the Army participation in joint/allied certification testing & configuration management processes. The suite of test tools under development will provide the ideal means to: a) validate joint technical architecture (JTA-A) critical messaging and protocol standards; b) improve systems interoperability; c) verify/certify correct system implementations and interpretation to JTA-A; d) sustain/support digitization and transition of fielded systems; e) support S/W blocking and interoperability testing. These unique tools are critical to the JTA-A Compliance, Certification Testing mission & Interoperability programs. The task supports the Army's transformation campaign while mitigating interoperability issues resulting in reducing cost & program slippages. This project also provides the Configuration Management & Control for the Software Blocking elements and fieldings. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan.

FY 2001 Accomplishments:

- 479 Evaluated and certified IT/C4ISR systems interoperability for DCX, Joint experiments to assure compliance with the Technical and System Architectures
- 463 Provided DIL system engineering and integration support for conduct of experiments and evaluations to support DCX, Joint Tests, and testing related to development of ATD's and STO's

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604805A - Command, Control, Communications
Systems - Eng Dev**

PROJECT

485

FY 2001 Accomplishments: (Continued)

- 200 Provided systems engineering, integrated support & field support for identification and resolution of systems' discrepancies and inconsistencies identified during evaluations
- 409 Developed and published Combat Net Radio (CNR) and Variable Message Format (VMF) Message application header standards updates to support interoperability during the Legacy to Objective Force Transformation.
- 325 Developed/Joint approved new Variable Message Format (VMF) messages to support interoperability during the Legacy to Objective Force Transformation.
- 332 Joint Approved 50 Variable Message Format (VMF) change proposals to support interoperability during the Legacy to Objective Force Transformation.
- 65 Maintained Variable Message Format (VMF) database and provided two new versions to customers to support interoperability during the transformation.
- 210 Conducted 6 Army and Joint Configuration control boards
- 461 Evaluated, processed and obtained approval of 1100 change proposals
- 660 Conducted 10 Joint certification testings to include 30 operational systems, and developed over 500 problem reports for analysis by Joint services
- 262 Represented the Army in over 24 Joint Air Defense (i.e. TADILs), Ground Operations (i.e. USMTF), OSD Tactical data Link Management plans (TDLMP), Joint Interface Requirements

Total 3866

FY 2002 Planned Program

- 480 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

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development**0604805A - Command, Control, Communications
Systems - Eng Dev****485****FY 2002 Planned Program (Continued)**

- 303 Develop and publish Combat Net Radio (CNR) and Variable Message Format (VMF) application header standards updates to support interoperability during the Legacy to Objective Force Transformation.
- 325 Develop/Joint approved new Variable Message Format (VMF) messages to support interoperability during the Legacy to Objective Force Transformation.
- 332 Joint approval 50 Variable Message Format (VMF) change proposals to support interoperability during the Legacy to Objective Force Transformation.
- 81 Maintain Variable Message Format (VMF) data base and provide two new versions to customers to support interoperability during the transformation.
- 310 Conduct 8 Army and Joint Configuration control boards
- 549 Evaluate, process and obtain approval of 1100 TADILs & USMTF change proposals
- 737 Conduct 10 Joint certification testings to include 30 operational systems, and develop over 500 problem reports for analysis by Joint services
- 167 Represent the Army in over 24 Joint Air Defense (i.e.TADILs), Ground Operations (i.e.USMTF), OSD Tactical data Link Management plans (TDLMP), Joint Interface Requirements

Total 3966

FY 2003 Planned Program

- 420 Evaluate and certify IT/C4ISR systems interoperability for DCX, Joint experiments to assure compliance with the Technical and System Architectures
- 410 Provide DIL System Engineering and Integration support for conduct of experiments and evaluations to support SDD & FDC, Joint Tests, and testing related to development of ATD's and STO's related to the development of the Objective Force.
- 110 Provide systems engineering, integrated support & field support for identification and resolution of systems' discrepancies and inconsistencies identified during evaluations
- 303 Develop and publish Combat Net Radio (CNR) and Variable Message Format (VMF) application header standards updates to support interoperability during the Legacy to Objective Force Transformation.
- 403 Develop/Joint approved new Variable Message Format (VMF) messages to support interoperability during the Legacy to Objective Force Transformation.

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604805A - Command, Control, Communications
Systems - Eng Dev**

PROJECT

485

FY 2003 Planned Program (Continued)

- 400 Joint approved 70 Variable Message Format (VMF) change proposals to support interoperability during the Legacy to Objective Force Transformation.
- 77 Maintain Variable Message Format (VMF) database and provide two new versions to customers to support interoperability during the Transformation.
- 310 Conduct 8 Army and Joint Configuration control boards
- 574 Evaluate, process and obtain approval of 1200 change proposals
- 725 Conduct 10 Joint certification testings to include 30 operational systems, and developed over 500 problem reports for analysis by Joint services
- 165 Represent the Army in over 24 Joint Air Operations (i.e.TADILs), Ground Operations (i.e.USMTF), OSD Tactical data Link Management plans (TDLMP), Joint Interface Requirements

Total 3897

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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
Systems - Eng Dev

PROJECT
485

<u>D. Schedule Profile</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>
Initial Brigade Combat Teams Experiments/Evaluations	1-4Q	1-4Q	1-4Q	1-4Q			
Evaluate, certify systems for and support FDD	1-4Q	1Q					
Evaluate, certify systems for and support Millennium Challenge 02	1-4Q	1-3Q					
Evaluate, certify systems for the support Corps AWE		4Q	1-3Q				
Evaluate, experiment, and provide systems integration for testing of ACTD, ATD, & STO's	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Experiment/Evaluate Joint Interoperability in conjunction with CIPO initiatives	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Conduct Joint/Coalition Experiments	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Evaluate, certify systems for and support SDD	1-4Q	1-4Q					
Evaluate, certify systems for and support FDC		1-4Q					
DOTE/JDEP Initial Concept/Evaluation/Experiments	1-4Q	1-4Q	1-4Q				
Develop and maintain Combat Net Radio (CNR) Standard	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Develop and maintain Variable Message Format (VMF) application header standards	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Develop and maintain Variable Message Format (VMF) Standards & standard databases	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Configuration Management and control of TADIL(A,B,J) and USMTF standards	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Represent Army on Army/DOD forums	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Test and promulgate Defense Collaborative Tools Set within the Army	4Q	1-4Q	1-4Q	1-4Q	1-4Q		

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

485

- Eng Dev

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)	In House	USACECOM , Fort Monmouth, NJ	4685	1507	1-4Q	1507	1-4Q	1423	1-4Q	Continue	Continue	0
b . Travel	In House	USACECOM, Fort Monmouth, NJ	116	50	1-4Q	50	1-4Q	50	1-4Q	Continue	Continue	0
Subtotal:			4801	1557		1557		1473		Continue	Continue	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	1-4Q	866	1-4Q	859	1-4Q	Continue	Continue	0
b . Development Support	C/CPAF	Telos, Fort Monmouth, NJ	2952	784	1-4Q	875	2-4Q	856	1-4Q	Continue	Continue	0
c . Development Support	C/CPFF	CSC, Fort Monmouth, NJ	1574	226	1-4Q	193	1-4Q	200	1-3Q	Continue	Continue	0
d . Development Support	C/CPFF	C3I, Fort Monmouth, NJ	1039	172	1-4Q	172	2Q	212	2-3Q	Continue	Continue	0
e . Development Support	SS/CPFF	Mitre, Fort Monmouth, NJ	280	0		0		0		0	280	0
f . Technical Support	C/CPFF	Marconi, Fort Monmouth, NJ	110	38		38	2-3Q	38	2-3Q	0	224	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

485

- Eng Dev

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
g . Equipment	In House	USACECOM, NJ	185	100	1Q	100	1Q	94	1Q	Continue	Continue	0
h . Equipment (Development Support)	FFP	GTE, Tauton, MA	106	0		0		0		0	106	0
i . Telecommunications	MIPR	USASC, Fort Huachuca, AZ	660	165	3Q	165	3Q	165	2Q	Continue	Continue	0
Subtotal:			10536	2309		2409		2424		Continue	Continue	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)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

485

- Eng Dev

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:			15337	3866		3966		3897		Continue	Continue	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev				PROJECT 589	
COST (In Thousands)	FY 2001 Actual	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	8137	8381	8625	7441	7364	7645	7646	0	76796

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 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 are critical path elements to achieve the Army's digitization mission, Army's Transformation to the Objective Force, 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. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 1300 Conducted major design evaluations for Joint Technical Architecture-Army (JTA-A) Interoperability. System Implementations: ABCS 7.0, THAAD, JTRS, Future Combat Systems (FCS), ACS, BCT-IAV, Land Warrior Redesign, MOSAIC, Agile Commander
- 1321 Ensured JTA-A Interop Implementation and Assess JTA-A compatibility for Army and S&T Programs. SSEBS/RFPs: BCT-IAV, TAD DFCS, TACSAT T4H, JTRS, Future Combat Systems(FCS)

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604805A - Command, Control, Communications
Systems - Eng Dev**

PROJECT

589

FY 2001 Accomplishments: (Continued)

- 800 Assessed JTA-A interop for Army Systems. Ad Hoc Assessments: ABCS 6.2, TC AIMS II, Paladin, GTN, Wholesale Logistics Modernization, Tactical Internet Reliable Multicast
- 815 Technically influenced the development/implementation of Joint Technical Architecture (JTA). JTA Version 4.0, JTA-A Version 6.5
- 566 Maintained existing JTA-A Information Technical Standards. Weapon Systems Appendix F Restructuring/Rewrite, Section II Information Processing Update, PCS/GPS clarifications, IFF Validation, XML Introduction, HCI Restructuring
- 583 Investigated information technical standards for inclusion in JTA-A/JTA. XML, JPEG 2000, MPEG 4, IPV6, Grid Technology, Distributed Computing (CORBA, COM, JAVA, ...)
- 445 Technically influenced commercial and international standards forums. MANET (TBRPF), IPV6
- 925 Supported BCT early architectural refinements, engineered EMPRS system into Army Architecture and began extension to the Joint/Coalition Forces.
- 850 Planned and supported C2 FCS architecture, planned for next generation digitization systems, and incorporated experimental after action recommendations into the architecture.
- 532 Implemented refinements into Objective Force C4ISR architecture and evaluated BCT technology insertions.

Total 8137

FY 2002 Planned Program

- 1350 Conduct Major design evaluations for Joint Technical Architecture-Army (JTA-A) Interoperability. System Implementations: WIN-T, THAAD, JTRS, Future Combat Systems (FCS), ACS, BCT-IAV, Land Warrior Redesign, MOSAIC, Agile Commander
- 1321 Ensure JTA-A Interop Implementation and Assess JTA-A compatibility for Army and S&T Programs. SSEBS/RFPs: WIN-T, TACSAT T4H, JTRS, Future Combat System (FCS)
- 800 Assess JTA-A interop for Army Systems. AD Hoc Assessments
- 811 Technically influence the development/implementation of Joint Technical Architecture (JTA). JTA Version 5.0, JTA-A Version 7.0
- 623 Maintain existing JTA-A Information Technical Standards.
- 640 Investigate information technical standards for inclusion in JTA-A/JTA. Global Information Grid (GIG) Technologies (XML, JPEG 2000, MPEG 4, IPV6)

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604805A - Command, Control, Communications
Systems - Eng Dev**

589

FY 2002 Planned Program (Continued)

- 506 Technically influence commercial and international standards forums. MANET (TBRPF), IPV6
- 930 Technically influence integration of ABCS architectural components.
- 830 Establish Army focus for Commercial product integration into the Joint Architecture (e.g. DCTS).
- 570 Assess C4ISR architectural performance in Joint Experimentation.

Total 8381

FY 2003 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.
- 815 Technically influence the development/implementation of Joint Technical Architecture (JTA).
- 695 Maintain existing JTA-A Information Technical Standards.
- 690 Investigate information technical standards for inclusion in JTA-A/JTA.
- 540 Technically influence commercial and international standards forums.
- 1030 Technically influence integration of ABCS architectural components.
- 817 Establish Army focus for Commercial product integration into the Joint Architecture (e.g. DCTS)
- 567 Assess C4ISR architectural performance in Joint Experimentation.

Total 8625

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
Systems - Eng Dev

PROJECT
589

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.

<u>D. Schedule Profile</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>
TA - JTA-A 7.5			3Q				
TA - JTA-A 7.0		2Q					
TA - JTA 5.0		4Q					
TA - JTA 6.0			3Q				
SA - 2DFSAs (1 CAV DIV)		1Q					
BCT 3 - (172nd Inf Bde)		2Q					
BCT 4 - (2 ACR (L) Polk		3Q					
BCT 4 - III Corps		4Q					
BCT 4 - 75 Ranger Reg			1Q				
BCT 5 - 2nd Bde 25th Inf Div (L)			2Q				
BCT 6 - 56th Bde, 28th Inf (RC)			3Q				
BCT 6 - 82nd Airborne Div				1Q			
BCT 6 - 10th Mountain Div					1Q		
BCT 6 - XVIII ABN Corps					2Q		
MC02 After Action Support		4Q					
AECP Field Support		4Q					
Joint Architecture Development		3Q					
OC 04 Joint Architecture Support			2Q				
OC 04 Support and After Action				2-4Q			
OC 06 Joint Architecture Support					2Q		
OC 06 Support and After Action						2-4Q	
Technology Insertion for BCT		4Q					

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

589

- Eng Dev

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	In House	ASEO, Fort Monmouth, NJ	4579	1700	1-4Q	1616	1-4Q	1723	1-4Q	Continue	Continue	0
b . Engineering Support	MIPR	ISEC, Fort Huachuca, AZ	842	315	1-4Q	200	1-3Q	200	1-4Q	Continue	Continue	0
c . Contract Systems Engineering Support	C & FPI	CSC, Eatontown, NJ	3521	1861	1-4Q	1620	1-3Q	1397	1-4Q	0	8399	0
d . Contract Systems Engineering Support	SS & FP	MITRE, Tinton Falls, NJ	2264	1168	1-4Q	2120	1-3Q	2220	1-4Q	0	7772	0
e . Contract Systems Engineering Support	C & FP	GTE/BBN, Cambridge, MA	410	350	1-4Q	200	1-4Q	200	1-4Q	0	1160	0
f . Contract Systems Engineering Support	C & FP	Litton, Reading, MA	245	0		0		0		0	245	0
g . Contract Systems Engineering Support	C & FP	Battelle, Alexandria, VA	300	54	1-4Q	0		0		0	354	0
h . Contract Systems Engineering Support	C & FP	SRI, Menlo Park, CA	0	0		0		0		0	0	0
i . Contract Systems Engineering Support	C & FP	SRC, Atlanta, GA	302	150	1-4Q	160	1-4Q	165	1-4Q	0	777	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems 589

- Eng Dev

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	20	1-4Q	0		0		0	145	0
k . Contract Systems Engineering Support	C & FP	Gemini, Billerica, MA	137	0		0		0		0	137	0
l . Systems Engineering and Integration	MIPR	WTS - ISIO CECOM, Fort Monmouth, NJ	1111	734	1-4Q	496	1-4Q	560	1-4Q	Continue	Continue	0
m . Contract Support	C & T&M-R	C3ISGI, Tinton Falls, NJ	1580	472	1-4Q	1000	1-4Q	1100	1-4Q	0	4152	0
n . Contract Support	C & T&M	BAE, Tinton Falls, NJ	0	90	1-4Q	49	1-4Q	55	1-4Q	0	194	0
o . Contract Support	C & T&M	SAIC, Falls Church, VA	932	409	1-4Q	170	1-4Q	173	1-4Q	0	1684	0
p . Contract Support	IPA Agreement	Rutgers University, New Brunswick, NJ	88	110	1-4Q	180	1-4Q	200	1-4Q	0	578	0
q . Contract Support	C & T&M	Datron, Simi Valley, CA	305	0		0		0		0	305	0
r . System Development and Integration	MIPR	PEO C3S, PM TOCS, Fort Monmouth, NJ	25	0		0		0		0	25	0
s . Contract Support	C & FP	CSC, Eatontown, NJ	1600	146	1-4Q	0		0		0	1746	0
t . Contract Support	C & FP	TRW, Domingues Hills, CA	1281	0		0		0		0	1281	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

589

- Eng Dev

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	545	0
v . Travel	In House	ASEO/ISIO CECOM, Fort Monmouth, NJ	728	178	1-4Q	190	1-4Q	200	1-4Q	Continue	Continue	0
w . Overhead	In House	ASEO/ISIO CECOM, Fort Monmouth, NJ	662	380	1-3Q	380	1-3Q	432	1-4Q	0	1854	0
Subtotal:			21582	8137		8381		8625		Continue	Continue	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)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

589

- Eng Dev

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:			21582	8137		8381		8625		Continue	Continue	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev	PROJECT 591
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COST (In Thousands)	FY 2001 Actual	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)	2361	2386	2372	1990	1959	1956	1952	0	17316

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 2001 Accomplishments:

- 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 a Real Time Operating System.

- 600 Develop the Weapon COE Prototype and software components.
- 279 Engineering and Program Development

Total 2361

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604805A - Command, Control, Communications
Systems - Eng Dev**

PROJECT

591**FY 2002 Planned Program**

- 229 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 2386

FY 2003 Planned Program

- 230 Update the WSTA Framework and perform cost analysis of modular software
- 119 Develop and test a distributed computing OE
- 420 Certify, test, and assess mission critical interoperability threads
- 450 Modify, test, and support Embedded Battle Command (EBC) software
- 550 Provide field test and engineering support for weapon COE integration
- 220 Maintain and update the JTA-A/JTA
- 383 Engineering and Program Development

Total 2372

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
Systems - 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.

<u>D. Schedule Profile</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	1-4Q	1-4Q		
Conduct interoperability demonstration	2-3Q						
Complete Version 3.0 OE							
Update WSTAWG Framework Version 4.0	1-4Q						
Develop Weapon Common Operating Environment Prototype	2-4Q						
Insert/update new computer science technology advances into weapon system software	3-4Q	1Q		3-4Q			
Institutionalize processes for life cycle software maintenance			1-4Q		1-4Q		

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

591

- Eng Dev

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		Continue	Continue	0
b . TACOM-ARDEC	MIPR	Picatinny Arsenal, NJ	254	355	1-4Q	250	1-4Q	235	1-4Q	0	1094	0
c . TACOM	MIPR	Warren, MI	1071	1083	1-4Q	1079	1-4Q	1060	1-4Q	0	4293	0
d . GSA	MIPR	Huntsville, AL	550	555	1-4Q	682	1-4Q	699	1-4Q	0	2486	0
e . Nichols Research Corporation	C/CPFF	Huntsville, AL	171	0		0		0		0	171	0
Subtotal:			2110	1993		2011		1994		Continue	Continue	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)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

591

- Eng Dev

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
a . AMCOM	In House	Redstone Arsenal, AL	230	368	1-4Q	375	1-4Q	378	1-4Q	Continue	Continue	Continue
Subtotal:			230	368		375		378		Continue	Continue	Continue

Project Total Cost:			2340	2361		2386		2372		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev				PROJECT 615	
COST (In Thousands)	FY 2001 Actual	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	27447	93238	63551	61136	46335	28797	4882	Continuing	Continuing

A. Mission Description and Budget Item Justification: Project D615 supports the Joint Tactical Radio System (JTRS)-RDTE effort. FY03 funding supports development of the JTRS program. 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. The Cluster 1 JTRS is a Joint program encompassing the specific requirements of the JTRS Joint Program Office (JPO), US Army Ground Vehicular and Rotary Wing Aircraft, US Air Force Tactical Control Party (TACP), and US Marine Corps applications. This project supports RDT&E efforts for the JTRS Cluster 1 program while the Services provide funding for their unique requirements. Project also supports the JTRS Step 2C initiative and the Near Term Digital Radio System (NTDRS). This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 5302 NTDRS Product Development (NTDRS Completion of development, and upgrade of engineering development models)
- 2479 NTDRS Support Costs (NTDRS Technical and Exercise Support)
- 29 NTDRS Test and Evaluation (Customer Test EPG)
- 4141 JTRS Product Development (JTRS Step 2C Contract)
- 2130 JTRS Product Development (JTRS Step 2C ancillary equipment and logistics and engineering services)
- 3728 Test and Evaluation (JTRS Step 2C EPG Testing/Validation/Cluster 1 Modeling and Simulation)
- 1983 JTRS Support Costs (JTRS Engineering and Technical Support)
- 504 JTRS Support Costs (Antenna Studies)
- 3309 JTRS Management Services (JTRS Program Management Office Support)
- 959 JTRS Management Services (JTRS Analysis of Alternatives/Milestone Preparation/Source Selection Start-up Activities)
- 2883 Product Development (Tactical Internet Integration/ABCS System Engineering and Integration Efforts)

Total 27447

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development**0604805A - Command, Control, Communications
Systems - Eng Dev****615****FY 2002 Planned Program**

- 1397 JTRS Product Development (JTRS Step 2C Contract)
- 1703 JTRS Product Development (JTRS Step 2C Logistics and Engineering Services and Ancillary Equipment)
- 75915 JTRS Product Development (JTRS Cluster 1 Ground Vehicular and Airborne Rotary Wing Design, Development of Prototypes, and waveform development, and technical engineering support)
- 800 JTRS Test and Evaluation (JTRS - JTRS Testbed, Testing and Evaluation Support)
- 2580 JTRS Support Costs (Systems Engineering and Technical Support)
- 7443 JTRS Management Services (JTRS Program Management Office Support)
- 3400 NTDRS Support Costs(NTDRS Testbed/Fixes and Technical Support)

Total 93238

FY 2003 Planned Program

- 4899 JTRS Product Development (JTRS Step 2C Logistics and Engineering Services)
- 36579 JTRS Product Development (JTRS Cluster 1 Vehicular and Airborne Hardware Design and Development of Prototypes and technical engineering support)
- 10028 JTRS Product Development (JTRS Cluster procurement of up to 10 Vehicular and up to 14 Airborne pre-engineering models for Early Operational Assessment testing)
- 1517 JTRS Test and Evaluation (JTRS EPG Testbed and Test Planning/Test Support/Electronic and Information Warfare Test and Evaluation/Labor)
- 5540 JTRS Management Services (JTRS Program Management Office Support)
- 2744 JTRS Support Costs (Systems Engineering & Technical Support)
- 1557 NTDRS Support Costs (NTDRS Testbed and Technical Support)
- 687 JTRS Product Development (System Engineering and Integration (SE&I))

Total 63551

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev	PROJECT 615
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<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA, Army, ADDS, BU1400/EPLRS/JTRS*	80831	63839	74835	95370	117812	119562	120017	Continuing	Continuing
RDTE, JTRS, 0604280A/D162***	59814	74814	65804	50909	40053	63489	47106	Continuing	Continuing
RDTE, JTRS, 0603713A/D370 - Army Data Distribution System**	17	0	0	0	0	0	0	0	3741
RDTE, Air Force PE 27423F Advanced Comm (Cluster 1 Funding) ****	0	4100	14500	0	0	0	0	Continuing	Continuing
PROC, Air Force PE 27423F Advanced Comm (Cluster 1 Funding)	0	0	0	0	6738	18933	19366	Continuing	Continuing
RDTE, PEO AVN, JTRS A-Kit PE 64201/C97***	40527	50838	40308	59535	31645	30893	6327	Continuing	Continuing
APA, PEO AVN, JTRS A-Kit Procurement AA0702***	0	0	0	1941	2155	21604	131329	Continuing	Continuing
Marine Corps -RDTE PE 0206313M/Project C225 Radio Systems, BA7***	0	0	593	1393	1787	991	990	Continuing	Continuing
Marine Corps- Proc- (PMC) BA4, 463300***	0	0	0	0	4518	17295	17262	Continuing	Continuing

Note: *The BU1400 SSN is a shared line between EPLRS and JTRS. It procures EPLRS through FY04 and supports EPLRS fielding through FY07. This same SSN is the core procurement funding line for JTRS beginning in FY05. **RDTE 0603713A/D370 FY2001 funding of \$17K supports NTDRS efforts. ***Joint Program Office, Marine Corps, and PEO AVN funding for Cluster 1 are a portion of the entire funding lines reflected above.****Air Force funding reflects FY02/03 Cluster 1 budgeted funding only.

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 FY2001, the NTDRS participated in various test exercises such as the FBCB2 Field Test 3 at Fort Huachuca, and the 4th Infantry Divisions' Division Capstone Exercise (DCX-1) at Fort Irwin. The 4th ID and 1 IBCT were issued NTDRS to provide the Tactical Operation Center (TOC) to TOC data link for the Brigade to Battalion level. In FY02, the 2nd IBCT and the 1st Calvary Division will be issued NTDRS to support their TOC to TOC requirements. FY02 tests and exercises will include FBCB2 Field Tests 4 and 5, FBCB2 IOT&E, three NTC rotations, and participation in the Millennium Challenge 02 exercise.

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604805A - Command, Control, Communications
Systems - Eng Dev**

PROJECT

615

In FY01 and out NTDRS will provide the TOC to TOC function in the first and second Brigade Combat Teams, FBCB2 exercises, and future NTC rotations. The TOC to TOC radio requirements are being met with NTDR and JTRS Step 2C assets for the 1st Digitized Corps and the 1st through 4th Initial Brigade Combat Teams. Joint Tactical Radio System (JTRS): Beginning in FY2001, project D615 also supports JTRS Army hardware developments for JTRS Step 2C and Cluster 1 activities. The JTRS Cluster 1 supports an evolutionary acquisition strategy. The Cluster 1 JTRS set will be a software-reprogrammable, multi-band/multi-mode capable, networkable system that provides simultaneous voice, data, and video communications to increase interoperability, flexibility, and adaptability in support of varied mission requirements. The JTRS Joint Program Office (JPO) is responsible for common core activities including developing, maintaining, and evolving the JTRS open standards architecture, providing re-coded versions of legacy waveforms to operate on JTRS architecture compliant hardware, and provides a certifying infrastructure for hardware/software compliance. Following the architecture's validation and market surveys of industry's capabilities, Defense Acquisition Executive program reviews were held in 1QFY01 and 4QFY01. Following the 1QFY01 review, the Army, which retained acquisition and weapon system integration responsibility, began planning a scaleable JTRS systems acquisition commensurate with Service migration plans. At the August FY01 review, the JPO Software Communications Architecture (SCA) and Waveform Program and the Cluster 1 JTRS Army program were each designated as separate ACAT 1D programs. In addition, the JTRS Capstone Acquisition and Annex for the JTRS Cluster 1 Acquisition Strategy were approved by the Defense Acquisition Executive. In FY02, the Cluster 1 development will be awarded to develop multi-channel ground and airborne configurations. A Milestone B Decision is planned for 3QFY02. The FY03-07 budget supports continued development and support of the Step 2C radios, development of Cluster 1 Ground and Airborne sets, design of A-kits (installation kits) for platforms required for testing, Early Operational Assessment and Development Test (DT)/Operational Test (OT) and Multi-Service Operational Test and Evaluation (MOT&E) testing for Cluster 1.

<u>D. Schedule Profile</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>
NTDRS CTSF ABCS Software Updates	1-4Q	1-4Q					
NTDRS Participation in Millennium Challenge 02		4Q					
NTDR JCF AWE Participation	1Q						
NTDRS EPG NTDRS Field Test III	1-2Q						
NTDRS Deployment to Brigade Combat Team 1	2Q						
NTDRS Deployment to Brigade Combat Team 2		3-4Q					
NTDRS Participation NTC/01-06/02-05/02-08/03-03/03-05	2-3Q	2-4Q	1-3Q				
NTDRS Support Division Combat Exercise (DCX 1 and 2)	2-3Q						
NTDRS Participation FBCB2 Field Test III & Limited User Test 3	1-2Q						
NTDRS Participation FBCB2 Field Test IV and V	4Q	1-4Q					
NTDRS Complete NTDRS FDD Deployment	2Q						
NTDRS Participation in FBCB2 IOT&E		1Q					

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604805A - Command, Control, Communications
Systems - Eng Dev

PROJECT
615

D. Schedule Profile (continued)	<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>
JTRS-Army Architecture Provided by JTRS-JPO - 2.0 SCA Architecture	1Q						
JTRS-JPO DAE Review - OCT	1Q						
JTRS-JPO DAE Review - AUG	4Q						
JTRS-Army Milestone B		3Q					
JTRS-Army Cluster 1 Ground & Airborne EMD Award		3Q					
JTRS-Army Step 2C EPG Testing/Validation		3Q					
JTRS-Army Step 2C EPG Operational Assessment		4Q					
JTRS-Early Operational Assessment				3-4Q			
JTRS Cluster 1 Milestone C					4Q		
JTRS-Army Cluster 1 LRIP Long Lead Option Award					1Q		
JTRS-Army Cluster 1 Ground & Airborne DT/OT					2-4Q		
JTRS-Army Cluster 1 Ground & Airborne MOT&E						3Q	

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

615

- Eng Dev

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/FFP Efforts*	C/T&M/CPI F/FFP	ITT, Fort. Wayne, IN	3463	5152	2-4Q	0		0		0	8615	8968
b . NTDRS (Ancillary Equip & Misc)	Misc	Misc	0	402	2-4Q	0		0		0	402	325
c . Brigade Combat Team Support	T&M	ITT, Fort Wayne, IN	1100	0		0		0		0	1100	1100
d . NTDRS Ancillary Equip (Network Management Terminal Upgrade)	MIPR	PM, CHS, Fort Monmouth, NJ	28	0		0		0		0	28	28
e . JTRS Army Step 2C Hardware Development and Cost of Prototypes	C/OTA	BAE Systems, Wayne, NJ	0	4141	1Q	1397	1Q	0		Continue	Continue	0
f . JTRS Step 2C Anc Equip/Log & Engrg	C/OTA/T&M	BAE Systems, Wayne, NJ	0	461	2-4Q	1703	1-4Q	4899	1-3Q	Continue	Continue	0
g . JTRS Cluster 1 Development	CPAF	TBD	0	0		74608	3-4Q	45193	1-2Q	Continue	Continue	0
h . NMT Step 2C	FFP	PM, CHS, Fort Monmouth, NJ	0	421	2Q	0		0		0	421	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

615

- Eng Dev

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 . Tactical Internet Integration	T&M	ITT, Ft. Wayne,IN	0	1792	3-4Q	0		0		0	1792	0
j . JTRS Development - System Engrg Spt	various	MISC	0	1054	2-4Q	1307	1-4Q	1414	1-4Q	Continue	Continue	0
k . JTRS 2C DTD and Antenna Adapters	FFP	MISC	0	195	2-4Q	0		0		0	195	0
l . ABCS System Engineering and Integration Efforts	Various	MISC	137	1090	2-4Q	0		687	1-4Q	Continue	Continue	0
Subtotal:			4728	14708		79015		52193		Continue	Continue	10421

Remarks: *NTDRS efforts prior to FY 2000 were funded in PE 0603713A, Proj D370

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

615

- Eng Dev

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	143	0
b . *NTDRS Training Support -EPS	PWD	EPS, Fayetteville, NC	61	0		0		0		0	61	61
c . *NTDRS Technical Support -Mykotronx	PWD	Mykotronx, Torrance, CA	15	0		0		0		0	15	15
d . *NTDRS Technical Support -C3I Systems	PWD	C3I Systems, Tinton Falls, NJ	168	0		0		0		0	168	168
e . *NTDRS Logistics & Technical /Exercise Support	PWD	ITT, Fort Wayne, IN	0	2226	1-4Q	3400	1-3Q	1557	1-2Q	Continue	Continue	0
f . JTRS Antenna Studies	PWD	ARINC, Annapolis, MD	0	504	4Q	0		0		0	504	0
g . JTRS Technical Support	Various	Miscellaneous	0	1983	1-2Q	2580	1-2Q	2744	1-2Q	Continue	Continue	0
Subtotal:			387	4713		5980		4301		Continue	Continue	244

Remarks: *NTDRS efforts prior to FY 2000 were funded in PE 0603713A, Proj D370

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

615

- Eng Dev

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	29	2Q	0		0		0	95	0
b . JTRS Step 2C EPG Qual Testing/Customer Testing	MIPR	EPG, Fort Huachuca, AZ	0	1950	2-3Q	0		0		0	1950	0
c . JTRS EPG Testbed and Test Planning	MIPR	EPG, Fort Huachuca, AZ	0	1084	1Q	400	2Q	1101	1Q	Continue	Continue	0
d . JTRS Modeling & Simulation	MIPR	USAIC	0	350	4Q	0		0		0	350	0
e . JTRS Test Inhouse Spt/Lab	MIPR	Various	0	344	3-4Q	400	1-4Q	416	1-4Q	Continue	Continue	0
Subtotal:			66	3757		800		1517		Continue	Continue	0

Remarks: *NTDRS efforts prior to FY 2000 were funded in PE 0603713A, Proj D370

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

615

- Eng Dev

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	655	0
b . JTRS Business/Engineering Management	MIPR	Various	0	1682	1-4Q	1867	1-2Q	3061	1-2Q	Continue	Continue	0
c . Tactical Radio Comm Sys Project Management Office Support	MIPR	Various	0	1396	1-3Q	3723	1-3Q	1543	1-3Q	Continue	Continue	0
d . JTRS MITRE Support	PWD	MITRE Corp., Mclean, VA	0	232	2Q	857	1-2Q	936	1Q	Continue	Continue	0
e . JTRS Analysis of Alternatives/Milestone & Source Selection Start-up Activities	Misc	Various	0	959	4Q	996	1-4Q	0		Continue	Continue	0
Subtotal:			655	4269		7443		5540		Continue	Continue	0

Remarks: *NTDRS efforts prior to FY 2000 were funded in PE 0603713A, Proj D370

Project Total Cost:			5836	27447		93238		63551		Continue	Continue	10665
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev				PROJECT 629	
COST (In Thousands)	FY 2001 Actual	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	13802	8776	1993	1370	1387	1486	1481	0	32083

A. Mission Description and Budget Item Justification: This element primarily funds the Protocol Investigation for Next Generation (PING) program. The 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) and in support of the Army Enterprise Architecture (AEA) 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.

FY 2001 Accomplishments:

- 1732 - Evaluated 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.
 - Evaluated weapons system communications issues under the Weapons System Technical Architecture Working Group (WSTAWG) communications Integrated Process Team (IPT) and analyze and recommend communications network interoperability roadmap.
 - Participated in SPAWARS led ACTD on IPv6. Perform interoperability and Joint experiments.
 - Evaluated architectural capabilities, feasibility, interoperability transmission capabilities of emerging protocols for higher data rate communications on an airborne platform. Provide recommendations to ASEO for inclusion into the JTA-A.
- 12070 - Investigated, identified and adapted emerging commercial wireless technologies that can be rapidly integrated into the DoD communications architecture.

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604805A - Command, Control, Communications
Systems - Eng Dev**

PROJECT

629

FY 2001 Accomplishments: (Continued)

- Adapted 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.
- Established a set of seminars to educate DoD personnel in emerging innovative DoD-driven applications of information technology that can realize the vision of network centric warfare.
- Investigated 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.

- Investigated and analyzed techniques to afford information assurance and networking integrity for Tactical Networks.
- Demonstrate an ad-hoc networked system with commercially based communications technologies for autonomously communicating critical battlefield sensor information to the warfighter to enhance force protection capabilities.
- Continuing to investigate and provide proof of concept demo for a low cost, ruggedized hands free radio communications between soldiers and command in warfare and high noise environments.
- Developing a smart antenna system which increases channel capacity, coverage, and quality of secure communications for multiple users operating in high interference environments.

Total 13802

FY 2002 Planned Program

- 2676 - Upgrade the advanced and distributed Internet Protocol Version 6 (IPv6) and 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

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604805A - Command, Control, Communications
Systems - Eng Dev**

629

FY 2002 Planned Program (Continued)

- Present to ASEO, PEOs, industry participation in CRDAs, 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.

- 6100 - Integrate user empowering access control system using iris scan with fingerprint activated Smart Card.
- Develop and evaluate broadband wide bandgap 50 watt amplifier which addresses requirements of JTRS.
- Demonstrate data rate and security enhancements with a 50 node ad-hoc networked battlefield sensor system.
- Fully integrate and package intra-aural transducer and body electronics system developed under Phase 1. Conduct field tests under high noise environmental conditions.
- Develop transmit Ka band antenna. Integrate and demonstrate with receive antenna developed in Phase 1.
- Delivery of three prototype packages; a lightweight conformal antenna, a lightweight PCS package for UAV evaluation, and a video wireless LAN system for Dragon Warrior.
- Refine workshops toward customer specific concerns regarding the impact of technology on emerging architecture.
- Evaluate new WLAN standards. Assess 802.11a 54 Mbps and HiperLAN.

Total 8776

FY 2003 Planned Program

- 1993 - Replicate tactical to enterprise systems architectures and increase connectivity with other laboratories and utilize the latest versions of IPv4 services employed in the current digitized force and latest releases of IPv6.
- Investigate lessons learned from the Joint Contingency Force (JCF) Advanced Warfighting Experiment (AWE) and next generation systems being developed as part of FCS as a baseline for IPv6 evaluations and transition mechanisms. Examine the current FDD organizational structure and perform laboratory evaluations to mitigate migrating to IPv6 environment
- Support implementation of IPv4/IPv6 transition in the Army Military digitized forces systems.

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604805A - Command, Control, Communications
Systems - Eng Dev**

PROJECT

629

FY 2003 Planned Program (Continued)

- Conduct experiments in actual unique military conditions and generate test reports that demonstrate and characterize IPv6 enhancements and effects on Army network digitized communications as outlined as part of the system analysis. Present to ASEO, 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

- Support implementation of IPv6 addressing schemes and evaluate address space management Mechanisms

Total 1993

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.

<u>D. Schedule Profile</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>
System Integration	3Q	3Q					
Address Architecture Issues	2-4Q	2-4Q					
Laboratory Testing	1-4Q	1-4Q	1-4Q				
Systems Integration (Airborne Communications)	2-4Q						
Video Demonstration	4Q						

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

629

- Eng Dev

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	In House	CECOM RDEC, Fort Monmouth, NJ	1112	1824	1-4Q	1976	1-4Q	1293	1-4Q	Continue	6205	0
b . Contract Services			0	0		0		0		0	0	0
c . 1)	C & FP	MITRE	406	410	1-4Q	410	1-4Q	410	1-4Q	Continue	Continue	0
d . 2)	C-T&M PSLA	SRI, Eatontown, NJ	270	280	1-4Q	290	1-4Q	290	1-4Q	Continue	Continue	0
e . ACIN		Drexel Univ, Philadelphia, Pa	0	11288	2Q	6100	2Q	0		0	17388	0
Subtotal:			1788	13802		8776		1993		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604805A - Command, Control, Communications Systems

629

- Eng Dev

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
			0	0		0		0		0	0	0
Subtotal:												

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:												

Remarks: Not Applicable

Project Total Cost:			1788	13802		8776		1993		Continue	Continue	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipm					
COST (In Thousands)	FY 2001 Actual	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	6089	9153	12625	8799	8720	7625	7585	Continuing	Continuing
812 MIL HIV VAC&DRUG DEV	147	0	0	0	0	0	0	Continuing	Continuing
832 COMBAT MEDICAL MATL ED	2148	5001	8328	3543	3467	4038	4101	0	39117
834 SOLDIER SYS PROT-ED	660	879	818	1828	1823	2149	1945	Continuing	Continuing
849 INFEC DIS DRUG/VACC ED	3134	3273	3479	3428	3430	1438	1539	Continuing	Continuing

A. Mission Description and Budget Item Justification: 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 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)

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604807A - Medical Materiel/Medical Biological Defense Equipm

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	6261	8228	12551
Appropriated Value	6318	9228	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-75	74
b. SBIR / STTR	-171	0	0
c. Omnibus or Other Above Threshold Adjustments	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-58	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	0
Current Budget Submit (FY 2003 PB)	6089	9153	12625

Change Summary Explanation:

Significant Changes: FY02- Congressional Adds totalling \$1000K (as noted below) added to this PE.

Project 832, Cartledge Infuser (+\$1000)- The objective of this one year add is to develop and complete a peer review and begin development of a high-volume warmed-blood infuser.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipm	PROJECT 832
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COST (In Thousands)	FY 2001 Actual	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	2148	5001	8328	3543	3467	4038	4101	0	39117

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 of life. The major contract is American Red Cross. This program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 738 Completed some of the required animal efficacy trials for the Hemostatic Dressing (HD).
- 195 Completed an initial user evaluation of the initial version of Critical Care System for Trauma and Transport device (CSTAT). Conducted a MS B.
- 1215 Conducted testing of field medical treatment and treatment aid devices.
 - Conducted vibration tests, safety and in vitro tests for Thawed Blood Processing System (TBPS).
 - Evaluated commercial technologies for Dental Filmless Imaging System (DFIS).
 - Conducted tests and evaluation of the Dental Field Operating and Treatment System (DEFTOS).

Total 2148

FY 2002 Planned Program

- 2259 Conduct the Food and Drug Administration (FDA) mandated phase 1 safety trials for the HD.
- 60 Conduct evaluation of the CSTAT device and start pre-planned product improvement to meet Operational Requirements Document (ORD).
- 1682 Conduct testing and milestone IPRs for field medical treatment and treatment aid devices.
 - Conduct clinical trials and submit application for FDA clearance of TBPS.
 - Complete operational testing in the field of the DEFTOS and conduct MS B/C.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604807A - Medical Materiel/Medical Biological
Defense Equipm**

PROJECT

832**FY 2002 Planned Program (Continued)**

- Conduct evaluation of pre-production prototypes for the One-Handed Tourniquet.

- 1000 Conduct peer review and begin development of warmed blood infuser

Total 5001

FY 2003 Planned Program

- 6609 Conduct elective surgery trials using informed consent for HD. Discuss military trauma indication with FDA. Conduct a MS B.
- 75 Redesign new devices into containerized modules and integrate a new CSTAT system. Conduct a MS C for CSTAT.
- 1332 Conduct testing and milestone IPRs for field medical treatment and treatment aid devices.
 - Conduct MS C for TBPS.
 - Complete detailed testing of the Pressure Swing Absorption Oxygen Generator (PSAOG).
 - Obtain FDA approval for the Ceramic Oxygen Generator System (COGS).
- 312 Conduct tests and prepare for milestones for medical monitoring and imaging systems.
 - Complete Warrior Medic System operational test and evaluation. Conduct MS B/C.

Total 8328

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
**0604807A - Medical Materiel/Medical Biological
 Defense Equipm**

PROJECT
832

<u>B. Other Program Funding Summary</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>
Not applicable.	0	0	0	0	0	0	0	0	0

C. Acquisition Strategy: Evaluate commercially developed materiel in government-managed trials.

<u>D. Schedule Profile</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>
Critical Care System for Trauma & Transport (MS B); (MS C)	3Q		4Q				
Hemostatic Dressing (MS B); (MS C)			1Q		4Q		
Ceramic Oxygen Generator System (MS B/C)					4Q		
Pressure Swing Adsorption Oxygen Generator (MS B/C)				4Q			
Thawed Blood Processing System (MS C)			2Q				
Warrior Medic (MS B/C)			4Q				
Dental Field Treatment and Operating System (MS B/C)		4Q					

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604807A - Medical Materiel/Medical Biological Defense Equipm

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 . Hemostatic Dressing		Red Cross, Charlotte, NC	0	738		2259		6609		0	9606	0
Subtotal:			0	738		2259		6609		0	9606	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 . Not Applicable			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604807A - Medical Materiel/Medical Biological Defense Equipm

832

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 . Not Applicable			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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			6199	1410		2742		1719		Continue	12070	0
Subtotal:			6199	1410		2742		1719		Continue	12070	0

Project Total Cost:			6199	2148		5001		8328		Continue	21676	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipm				PROJECT 849				
COST (In Thousands)	FY 2001 Actual	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	3134	3273	3479	3428	3430	1438	1539	Continuing	Continuing

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 and Environmental Protection Agency (EPA) registration. 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 2001 Accomplishments:

- 1983 Completed nonclinical carcinogenicity study of Tafenoquine. Completed one phase 3 trial and initiated another to evaluate the effectiveness of Tafenoquine as an antimalarial prophylactic drug.
 - 686 Completed phase 3 studies in Egypt and Israel to evaluate effectiveness of enterotoxigenic Escherichia coli (ETEC) vaccine in preventing traveler's diarrhea.
 - 465 Completed phase 1 safety and immunogenicity study for improved dose regimen of Campylobacter vaccine.
- Total 3134

FY 2002 Planned Program

- 1176 Complete clinical trials and developmental testing of malarial/antimalarial vaccines, drugs, and diagnostics:
 - Conduct one phase 3 clinical trial to evaluate the effectiveness of Tafenoquine, an antimalarial prophylactic drug.
 - Complete developmental testing of a prototype Malaria Rapid Diagnostic Device (continued from PE/Project 0603807A/808, FY 2001). Conduct a Milestone (MS) B In Process Review (IPR). Prepare and submit a Pre-Market Approval application to the FDA.
- 2025 Conduct studies on diarrheal vaccines.
 - Conduct phase 2 dose ranging study of ETEC vaccine.

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604807A - Medical Materiel/Medical Biological
Defense Equipm**

PROJECT

849

FY 2002 Planned Program (Continued)

- Conduct phase 2 challenge trial for new adjuvant lot of Campylobacter diarrheal vaccine.
 - Conduct a MS B IPR on Shigella flexneri vaccine.
 - 72 Conduct clinical study and trial, and appropriate reviews for Leishmaniasis vaccines:
 - Begin 2-year phase 3 clinical trial to determine the effectiveness of paromomycin/gentamicin topical antileishmanial cream. Conduct a MS B IPR.
- Total 3273

FY 2003 Planned Program

- 1060 Conduct clinical trial, and appropriate reviews for malarial/antimalarial vaccines, drugs and diagnostics:
 - Complete the phase 3 clinical trial to evaluate the effectiveness of Tafenoquine started in FY02.
 - Conduct a MS C IPR for Malaria Rapid Diagnostic Device.
 - Plan and begin a multi-year phase 3 clinical trial for the RTS,S malaria vaccine. Conduct a MS B IPR.
 - 1545 Conduct and/or continue appropriate trials and review of diarrheal vaccines:
 - Prepare and submit a Biologics License Application for the ETEC vaccine for the prevention of traveler's diarrhea. Conduct a MS C IPR.
 - Plan multi-year phase 3 pivotal trial for new adjuvant lot of Campylobacter vaccine. Conduct Campylobacter vaccine MS C.
 - Begin 3-year phase 3 clinical trial to determine the effectiveness of Shigella flexneri vaccine to prevent traveler's diarrhea.
 - 874 Continue clinical studies and trials of grouped vaccines, drugs, and diagnostics (Leishmaniasis, Paromomycin and Hepatitis E):
 - Continue 2-year phase 3 clinical trial to determine the effectiveness of paromomycin/gentamicin topical antileishmanial.
 - Produce three new production lots of Hepatitis E Virus Vaccine under good manufacturing practices.
 - Conduct bridging study to compare new lots of Hepatitis E Virus Vaccine with old lots.
 - Conduct phase 2 clinical study to determine the safety, sensitivity, and specificity of new Leishmania skin test components. Conduct a MS B IPR.
- Total 3479

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
**0604807A - Medical Materiel/Medical Biological
 Defense Equipm**

PROJECT
849

<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Not applicable.	0	0	0	0	0	0	0	0	0

C. Acquisition Strategy: Test and evaluate in-house and commercially developed products in government-managed trials to meet FDA requirements and EPA registration.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
ETEC vaccine (MS C)			2Q				
Campylobacter vaccine (MS C)						1Q	
Tafenoquine antimalarial drug (MS C)				1Q			
Malaria Rapid Diagnostic Device (MS B); (MS C)		1Q	4Q				
Leishmania skin test (MS B); (MS C)			1Q		1Q		
Shigella flexneri (MS B); (MS C)		3Q				4Q	
Paromomycin/Gentamicin (MS B); (MS C)		3Q		3Q			
RTS,S malaria vaccine (MS B)			1Q				
Artelinic Acid (MS B)				1Q			
Shigella sonnei vaccine (MS B)				1Q			
Japanese encephalitis vaccine (improved) (MS B)				3Q			
Group B meningitis vaccine (MS B)					3Q		
Dengue tetravalent vaccine (MS B)						1Q	
Shigella dysenteriae vaccine (MS B)						3Q	

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological Defense Equipm

PROJECT
849

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			1340	1312		1347		1495		Continue	5494	Continue
Subtotal:			1340	1312		1347		1495		Continue	5494	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 . No product/contract costs greater than \$1M individually			149	117		122		125		Continue	Continue	Continue
Subtotal:			149	117		122		125		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipm	PROJECT 849
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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	1531		1623		1673		Continue	Continue	Continue
Subtotal:			2190	1531		1623		1673		Continue	Continue	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 . No product/contract costs greater than \$1M individually			558	174		181		186		Continue	Continue	Continue
Subtotal:			558	174		181		186		Continue	Continue	Continue

Project Total Cost:			4237	3134		3273		3479		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604808A - Landmine Warfare/Barrier - Eng Dev

COST (In Thousands)	FY 2001 Actual	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	84867	68550	128992	108109	117005	146437	142125	Continuing	Continuing
016 MINE SYSTEMS ED	0	4491	22472	31837	37359	37494	30823	Continuing	Continuing
415 MINE NEUTRAL/DETECTION	25900	36844	46220	34272	11446	8943	9502	Continuing	Continuing
434 ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)	36088	1008	28300	10000	0	0	0	0	75396
443 APL-A (MIXED SYSTEMS)	22879	26207	32000	32000	68200	100000	101800	0	383086

A. Mission Description and Budget Item Justification: This program element provides for System Development and Demonstration of mine and counter mine systems. Mine Systems Engineering Development, provides for the increased tactical effectiveness and responsiveness of landmines, supporting the development of the Intelligent Combat Outpost (Raptor), and upgrades for the Volcano Dispenser. 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), and Explosive Standoff Minefield Clearer (ESMC). Program also provides for a variety of demolition efforts to include development of Flexible Linear Shaped Charge, Remote Shock Tube Initiator, Magnetic Inductive Urban OPS Structure Remote Initiator, Insensitive Initiator, and Advanced Cratering.

These systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604808A - Landmine Warfare/Barrier - Eng Dev

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	93717	89153	114243
Appropriated Value	94584	69153	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-603	0
b. SBIR / STTR	-2787	0	0
c. Omnibus or Other Above Threshold Reductions	-6400	0	0
d. Below Threshold Reprogramming	338	0	0
e. Rescissions	-868	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	14749
Current Budget Submit (FY 2003 PB)	84867	68550	128992

Funding:

FY01: \$6.4M reprogrammed from project 415 to support other Army requirements.

FY02: \$20M congressional decrease from project 434(NSD-A).

FY03: \$14.7M Net adjustment provided by Army support of the program.

Schedule: Raptor MS B changed from 3Q03 to 3Q05 based on program restructure, funding cut and delays.

NSD-A MS C changed from 1Q04 to 2Q05 based on funding cuts and delays attributed to landmine policy review.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev					PROJECT 016			
COST (In Thousands)	FY 2001 Actual	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	0	4491	22472	31837	37359	37494	30823	Continuing	Continuing	

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), the upgrade to the Volcano Dispenser Control Unit and the Volcano modularization in support of the Interim Brigade Combat Team (IBCT). Also provides for a variety of Demolition devices to include: Flexible Linear Shaped Charge, Remote Shock Tube Initiator, Magnetic Inductive Urban OPS Structure Remote Initiator, Insensitive Initiator, and Advanced Cratering. These Systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

Project not funded in FY 2001.

FY 2002 Planned Program

- 4091 Initiate design effort for Volcano upgrades.
- 400 Establish testing plans and criteria for Volcano upgrade efforts. Initiate Volcano Light System development and demonstration.
Initiate Volcano upgrade test program.
Initiate development of flexible linear shaped charge.
Initiate development of remote shock tube initiator.

Total 4491

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT

016

FY 2003 Planned Program

- 5200 Continue design efforts on the Volcano upgrade program.
- 907 Initiate System Development and Demonstration.
- 1300 Initiate Volcano upgrade test program.
- 2553 Initiate Development of Flexible linear Shaped Charge.
- 2853 Initiate Development of Remote Shock Tube Initiator.
- 3000 Initiate development of Magnetic Urban OPS Structure Remote Initiator.
- 2659 Initiate development of Insensitive Initiator.
- 4000 Initiate development of Advanced Cratering System.

Total 22472

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev	PROJECT 016
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<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, BA4, PE 0603619A, Proj 005	8150	9314	10116	9140	9167	8957	6355	Continuing	Continuing
M12100, Intelligent Combat Outpost	0	0	0	0	0	19975	19955	Continuing	Continuing
M12202, Raptor Training Device	0	0	0	0	0	2398	2395	Continuing	Continuing
G39100, Dispenser, Mine M139	0	2383	1822	5528	3563	0	0	0	13296

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. The acquisition strategy for the Volcano Upgrades program is to accomplish an Engineering Change with a competitive solicitation to a performance specification for the System Development and Demonstration effort. All of the Demolition development efforts will be competitive selections with Production options.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
RAPTOR MS B					3Q		
RAPTOR IO&T					3Q		
Volcano Modular Upgrade - ECP contract awarded		2Q					
Volcano Modular Upgrade - ECP enters production				1Q			
Demolition programs (5) Milestone B			1Q				
Flex Linear Shaped Charge MS C					3Q		
Remote Shock Tube Initiator MS C				4Q			
Magnetic Inductance Remote Initiator MS C					3Q		
Insensitive Initiators MS C				3Q			
Advanced Cratering MS C						2Q	

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

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 . RAPTOR- SDD Contract	C-CPIF	TBD	0	0		0		3595	1Q	Continue	Continue	Continue
b . Volcano-SDD Contract	C-CPIF	TBD	0	0		2991	2Q	5007	1Q	Continue	Continue	Continue
c . Demolition Programs SDD Contracts	C-CPIF	TBD	0	0		0		5600	1-4Q	Continue	Continue	Continue
Subtotal:			0	0		2991		14202		Continue	Continue	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 . Engr. Support RAPTOR	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		0		1670	1Q	Continue	Continue	Continue
b . Raptor Modeling And Simulation	C-CPIF	TBD	0	0		0		800	1-2Q	0	800	0
c . Raptor Modeling and Simulation	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		0		800	1-2Q	0	800	0
d . Engr. Support RAPTOR	MIPR	Various	0	0		0		500	1Q	Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604808A - Landmine Warfare/Barrier - Eng Dev

016

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
e . Engr. Support Volcano	MIPR	Various	0	0		1250	1Q	850	1Q	Continue	Continue	Continue
f . Engineering Support Demolition Programs	MIPR	Various	0	0		0		1000	1-4Q	Continue	Continue	Continue
Subtotal:			0	0		1250		5620		Continue	Continue	Continue

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
a . Volcano- test upgrades	MIPR	ATEC, Alexandria, VA	0	0		0		1300	1Q	0	1300	0
b . Demolition Programs Test Support	MIPR	ATEC, Alexandria, VA	0	0		0		400	1Q	Continue	Continue	Continue
Subtotal:			0	0		0		1700		Continue	Continue	Continue

Remarks: None

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604808A - Landmine Warfare/Barrier - Eng Dev

016

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 . RAPTOR Program Management	In-House	PM MCD, Picatinny Arsenal, NJ	0	0		0		400	1Q	Continue	Continue	Continue
b . Volcano Program Management	In-House	PM MCD, Picatinny Arsenal, NJ	0	0		250	1Q	250	1Q	Continue	Continue	Continue
c . Demolitions Programs	In-House	PM MCD, Picatinny Arsenal, NJ	0	0		0		300	1Q	0	300	0
Subtotal:			0	0		250		950		Continue	Continue	Continue
Remarks: None												
Project Total Cost:			0	0		4491		22472		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev				PROJECT 415	
COST (In Thousands)	FY 2001 Actual	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	25900	36844	46220	34272	11446	8943	9502	Continuing	Continuing

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), and Explosive Standoff Minefield Clearer (ESMC).

These systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 7278 Completed Component Dev. and Fabrication of two GSTAMIDS block 0 prototypes.
- 1787 Initiated GSTAMIDS Block 0 contractor testing
- 4194 Initiated HSTAMIDS SDD Hardware and Software design.
- 1900 Completed Foreign Comparative Testing for Mine Protected Clearance Vehicle.
- 3787 Fabricated HSTAMIDS hardware to conduct design verification test.
- 2116 Conduct solicitation/source selection for CMCS.
- 4838 Award Mongoose (ESMC) System Design and Development Contract.

Total 25900

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT

415**FY 2002 Planned Program**

- 585 Prepare for GSTAMIDS Block 0 for Milestone C (Full Rate Production).
- 1000 Complete GSTAMIDS Block 0 Contractor Testing.
- 1000 Complete GSTAMIDS Block 0 System Integration.
- 3146 Conduct GSTAMIDS Block 0 Government Testing.
- 14349 Complete ESMC (Mongoose) BCT preliminary design.
- 4200 Procure long lead materials for ESMC Prototypes.
- 1200 Develop ESMC Manufacturing Processes.
- 8082 Complete HSTAMIDS SDD design.
- 3282 Initiate fabrication of 22 HSTAMIDS prototypes and conduct DT/OT.

Total 36844

FY 2003 Planned Program

- 1000 Conduct Source Selection and award GSTAMIDS Block I System Development & Demonstration Contract.
- 4009 Complete GSTAMIDS Block I SD&D preliminary design effort.
- 2850 Initiate GSTAMIDS Block I SD&D detailed design and system integration effort.
- 16081 Finalize ESMCBCT design and validate insensitive munition rocket.
- 9048 Fabricate ESMC prototypes (34 reloads, 5 trailers).
- 2500 Initiate Contractor/Government testing of ESMC.
- 7806 Complete fabrication of 22 HSTAMIDS Prototypes and conduct DT/OT testing.
- 926 Prepare documentation, conduct MS C, and prepare procurement package for HSTAMIDS.
- 2000 Complete GSTAMIDS Block 0 Operational Testing and prepare for FRP MDR.

Total 46220

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
415

<u>B. Other Program Funding Summary</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 0603619A, Project 606, Countermine/Barrier Advanced Dev	9654	10534	10170	10105	11966	4952	8424	Continuing	Continuing
R68200, HSTAMIDS	0	0	0	1805	6836	7093	7084	Continuing	Continuing
OPA 3, R68101, GSTAMIDS Block 0	0	13180	17425	0	0	0	0	0	30605
OPA 3, R68102, GSTAMIDS Block 1	0	0	0	0	2013	8989	8980	Continuing	Continuing
OPA 3, R68105 ESMC	0	0	0	0	1981	2966	592	Continuing	Continuing
Ammo, E81400 ESMC	0	0	0	0	7000	17000	12400	Continuing	Continuing
OPA 3, S11500 ASTAMIDS	0	0	0	0	0	0	0	Continuing	Continuing

C. Acquisition Strategy: ESMC 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 competitively selected System Component Development contractor will be awarded 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 are anticipated for the successful SDD contractor. GSTAMIDS program is a spiral development 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. 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. SDD contractor will be awarded production contract with multiple options.

<u>D. Schedule Profile</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>
GSTAMIDS Block 0 MS C			2Q				
GSTAMIDS Block 1 MS B			2Q				
GSTAMIDS Block I MS C					4Q		
HSTAMIDS MS B	1Q						
HSTAMIDS MS C			4Q				
ESMC MS B	3Q						
ESMC (BCT) MS C				4Q			

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
415

D. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
ESMC (Legacy) MS C						4Q	

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604808A - Landmine Warfare/Barrier - Eng Dev

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		5041	1Q	Continue	Continue	Continue
b . GSTAMIDS Block 0	C-CPFF	EG&G Systems Inc., Albuquerque, NM	8296	4921	1Q	1158	1Q	0		0	14375	14375
c . HSTAMIDS	C-CPIF	CY Terra Corporation, Orlando, FL	0	4537	2Q	6200	1Q	5200	1Q	Continue	Continue	Continue
d . ESMC	SS	BAE Systems, Virginia	0	3092	4Q	15327	1Q	19843	1Q	Continue	Continue	Continue
Subtotal:			8296	12550		22685		30084		Continue	Continue	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 GSTAMIDS Blk 0	MIPR	NVESD/ CECOM, Ft Belvoir, VA	4845	1670	1Q	503	1Q	500	1Q	0	7518	0
b . Eng support GSTAMIDS Blk 0	MIPR	Various OGAs	3541	993	1Q	624	1Q	525	1Q	0	5683	0
c . Eng Support GSTAMIDS Block 0	Various	Various Contractors	4941	1814	1Q	867	1Q	605	1Q	0	8227	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604808A - Landmine Warfare/Barrier - Eng Dev

415

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
d . GSTAMIDS Blk I	MIPR	Various OGAs	0	0		0		561	1Q	Continue	Continue	Continue
e . GSTAMIDS Support Blk I	MIPR	NVESD/CECOM, Ft Belvoir, VA	0	0		0		487	1Q	Continue	Continue	Continue
f . Support GSTAMIDS Blk I	Various	Various Contractors	0	0		0		481	1Q	0	481	0
g . Support CMCS	Various	Various	0	955	1Q	0		0		0	955	0
h . Eng Support CMCS	MIPR	NVESD/CECOM, Ft Belvoir, VA	0	834	1Q	0		0		0	834	0
i . Eng Support HSTAMIDS	MIPR	NVESD/CECOM, Ft Belvoir, VA	0	1585	1Q	2090	1Q	1445	1Q	Continue	Continue	Continue
j . Support HSTAMIDS	Various	Various	0	1556	1Q	1216	1Q	1158	1Q	Continue	Continue	Continue
k . ESMC (Mongoose)	MIPR	NVESD/CECOM, Ft Belvoir, VA	0	965	2Q	481	1Q	740	1Q	Continue	Continue	Continue
l . ESMC (Mongoose)	Various	Various	0	597	3Q	2130	1Q	2053	1Q	Continue	Continue	Continue
Subtotal:			13327	10969		7911		8555		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
415

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	1349	1Q	1892	1Q	1573	2Q	Continue	Continue	Continue
b . Test support HSTAMIDS	MIPR	ATEC, Alexandria, VA	0	202	2Q	1089	1Q	500	1Q	0	1791	0
c . Test Support ESMC	MIPR	ATEC, Alexandria, VA	0	184	2Q	491	2Q	2500	2Q	Continue	Continue	Continue
Subtotal:			1313	1735		3472		4573		Continue	Continue	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, NJ	972	325	1-4Q	1425	1-4Q	1555	1-4Q	Continue	Continue	Continue
b . Program management Contractor support	Various	Various	1028	321	1-4Q	1351	1-4Q	1453	1-4Q	Continue	Continue	Continue
Subtotal:			2000	646		2776		3008		Continue	Continue	Continue

Project Total Cost:			24936	25900		36844		46220		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev	PROJECT 434
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COST (In Thousands)	FY 2001 Actual	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)	36088	1008	28300	10000	0	0	0	0	75396

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 System supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 22973 Initiated design, fabrication, 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 Initiated general engineering support (including Other Government Agencies (OGAs)) for NSD-A design producibility/manufacturing development of NSD-A subsystems through Preliminary Design Reviews and subsystem verification testing.
- 9207 Initiated communication, reliability and lethality trade studies, risk reduction efforts.

Total 36088

FY 2002 Planned Program

- 1008 Continue 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 1008

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
434

FY 2003 Planned Program

- 21200 Provide hardware and software for contractor system verification tests, Functional Qualification Test (FQT), and Production Qualification Test (PQT) (326 MCU's, 676 ERTS, 45 repeaters, 45 RCUs, 1900 inert MGLs, 725 HE MGLs, 404 inert M16s, 144 HE M16s.
- 7100 Provide general engineering support (including OGAs) for Non Self-destruct-Alternatives (NSD-A) design producibility/manufacturing and integration of NSD-A systems through Critical Design Review and Production Qualification Testing.

Total 28300

B. Other Program Funding Summary

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Ammo E91700	0	0	0	0	41800	41800	41800	0	125400

C. Acquisition Strategy: 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.

D. Schedule Profile

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
NSD-A MS-C					2Q		

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
434

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	4Q	0		20900	1Q	0	50830	50830
b . NSD-A, Contiuing Efforts	TBD	TBD	0	0		0		0		10000	10000	10000
Subtotal:			0	29930		0		20900		10000	60830	60830

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	1Q	1008	1Q	3200	1Q	0	6208	6208
b . Eng support NSD-A	MIPR	Various	0	1908	1Q	0		3900	1Q	0	5808	5808
Subtotal:			0	3908		1008		7100		0	12016	12016

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604808A - Landmine Warfare/Barrier - Eng Dev

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	4Q	0		0		0	2000	2000
Subtotal:			0	2000		0		0		0	2000	2000

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	250	1-4Q	0		300	1-4Q	0	550	550
Subtotal:			0	250		0		300		0	550	550

Project Total Cost:			0	36088		1008		28300		10000	75396	75396
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev					PROJECT 443			
COST (In Thousands)		FY 2001 Actual	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)	22879	26207	32000	32000	68200	100000	101800	0	383086

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/AP 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.

These Systems support the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 6460 Completed award of multiple Broad Agency Announcements (BAA) and prototype efforts for system concepts and components to support alternatives studies.
- 2290 Initiated BAA for component technologies to fill technological gaps.
- 2000 Initiated BAA to develop second generation (2006-2020) APL alternative solutions.
- 2500 Conducted distributed modeling of tactics and procedures.
- 2000 Modified 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 Conducted technology assessment of sensors, communications and armament systems
- 1000 Initiated development of integrated and interactive network mapping system.
- 1537 Initiated development of a friend or foe algorithm for foot soldiers.
- 592 Tested and evaluated advanced technology brassboard for landmine alternatives concept development.
- 3000 Initiated component advanced development for mixed mine alternatives/solutions.

Total 22879

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT

443

FY 2002 Planned Program

- 8253 Continue component advanced development for mixed system alternatives.
- 2500 Continue BAA for component technology to fill technological gaps.
- 1000 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.
- 2000 Initiate Universal Landmine Controller Development.
- 537 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 26207

FY 2003 Planned Program

- 8005 Continue prototype development and risk reduction for mixed system alternatives.
- 2000 Continue BAA to develop second generation (2006-2020) APL alternative solutions.
- 1000 Conduct distributed modeling of tactics and procedures.
- 1584 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.
- 1500 Continue Universal Minefield Controller development.

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT

443

FY 2003 Planned Program (Continued)

- 1290 Continue with development of integrated and interactive network mapping system.
- 1537 Continue with development of a friend or foe algorithm for foot soldiers. Test and evaluate advanced technology brassboards.
- 2000 Continue investigating mobility of an adaptable network of expendable sensors and new deterrent to meet landmine alternatives requirements and FCS force protection roles.
- 1000 Test mobility concepts for landmine alternatives.
- 2500 Continue distributed modeling of tactics and procedures.
- 2000 Initiate prototype system concept for second generation APL solutions.
- 1084 Initiate product improvements to Track 3 landmine alternative concepts and transition Defense Advanced Research Projects Agency (DARPA) Track 2 concepts.
- 6500 Initiate System Development & Demonstration of APL Alternatives.

Total 32000

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
443

<u>B. Other Program Funding Summary</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>
PAA SSN: E91701	0	0	0	0	20193	0	0	0	20193

C. Acquisition Strategy: Continue concept exploration studies and proof of principle demonstrations for two systems 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>	<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>
Mixed system MS B				3Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604808A - Landmine Warfare/Barrier - Eng Dev

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, 5 contractors	0	6223	1Q	0		0		0	6223	6223
b . APL-A Component Technology Development	C-CPIF	Various, 6 contractors	0	1487	1Q	2500	1-4Q	2000	1Q	0	5987	5987
c . APL-A Component Advanced Development	C-CPIF	TBD	0	3297	4Q	12840	1-4Q	17600	1Q	0	33737	33737
d . APL-A Support	C-CPIF	BRTRC, Alexandria VA; Robbins Goia, VA; Various Others	0	1081	1-3Q	1000	1-4Q	1200	1-4Q	0	3281	3281
e . APL-A Universal Minefield Controller Development	C-CPIF	TBD	0	0		2000	2-4Q	1500	1Q	0	3500	3500
f . APL-A Continuing Efforts	TBD	TBD	0	0		0		0		302003	302003	302003
Subtotal:			0	12088		18340		22300		302003	354731	354731

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604808A - Landmine Warfare/Barrier - Eng Dev

443

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	2316	1Q	1500	1-4Q	2000	1-4Q	0	5816	5816
b . Eng. Support	MIPR	Night Vision Labs, Ft. Belvoir, VA	0	942	1-2Q	2000	1-4Q	2000	1-4Q	0	4942	4942
c . Concepts & Component Analysis & Evaluation	MIPR	Various (LLNL, CA; LANL, NM; others)	0	7078	1-4Q	4067	1-4Q	5300	1-4Q	0	16445	16445
Subtotal:			0	10336		7567		9300		0	27203	27203

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)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604808A - Landmine Warfare/Barrier - Eng Dev

443

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	455	1-4Q	300	1-4Q	400	1-4Q	0	1155	1155
Subtotal:			0	455		300		400		0	1155	1155
Project Total Cost:			0	22879		26207		32000		302003	383089	383089

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604814A - Sense and Destroy Armament Missile - Eng Dev

COST (In Thousands)	FY 2001 Actual	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	28596	61300	70888	53067	29833	6328	515	48000	298527
708 XM982 PROJECTILE	28596	61300	70888	53067	29833	6328	515	48000	298527

A. Mission Description and Budget Item Justification: Excalibur (XM982) and Trajectory Correctable Munition (TCM) programs are precision guided, extended range 155mm artillery projectiles with the capability for multiple payloads to include Unitary, Sensor-Fuzed Munition (SFM), and Dual Purpose Improved Conventional Munition (DPICM). Provides improved fire support through a Precision Guided Extended Range family of 155mm projectiles with greatly increased accuracy and reduced collateral damage in support of Legacy, Interim and Objective Forces. It also includes the development of the Platform Integration Kit and Enhanced Portable Inductive Fuze Setter (EPIAFS). This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002PB)	31513	67258	66676
Appropriated Value	31805	61822	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-522	0
b. SBIR/STTR	-917	0	0
c. Omnibus and Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	-2000	0	0
e. Rescissions	-292	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	4212
Current Budget Submit (FY 2003 PB)	28596	61300	70888

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604814A - Sense and Destroy Armament Missile - Eng Dev

FY01: Reprogrammed funds (-2000) for high priority Army requirements.

FY02: Congressional adjustment(-5.436) to reduce Excalibur program growth (-8.936) and support Trajectory Correctable Munition (TCM) development (+3.500).

FY03: Transfer from procurement to fund restructured program (+4.1).

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604814A - Sense and Destroy Armament Missile - Eng Dev				PROJECT 708	
COST (In Thousands)	FY 2001 Actual	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	28596	61300	70888	53067	29833	6328	515	48000	298527

A. Mission Description and Budget Item Justification: The Excalibur (XM982) provides improved fire support through a Precision Guided Extended Range family of 155mm projectiles with greatly increased accuracy and reduced collateral damage in support of Legacy, Interim and Objective Forces. Funding provides for the development of the Excalibur projectile and integration of the Unitary warhead. 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. The Product Management Office (PMO) is in the process of merging the Trajectory Correctable Munitions (TCM) and Excalibur programs to satisfy Congressional risk reduction requirement. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 5371 Continued design of projectile assembly including structural and aeroballistic analyses, subsystem laboratory tests and airframe flight tests. Built prototypes for test and evaluation.
- 490 Conducted assessment of potential merger of Excalibur and TCM programs.
- 7371 Continued design of guidance, navigation, control and instrumentation systems. Built prototype subsystems and conducted high-G guidance testing and evaluation.
- 4192 Continued 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.
- 1847 Initiated development of Platform Integration Kit and EPIAFS
- 4149 Performed structural analysis of payload and internal interfaces in a gun fired environment.
- 2900 Initiated Unitary warhead development.
- 2276 Procured 30 test articles for Contractor Developmental Testing

Total 28596

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604814A - Sense and Destroy Armament Missile -
Eng Dev**

PROJECT

708**FY 2002 Planned Program**

- 9235 Continue airframe tactical structure, conduct 39 and 56 caliber contractor development testing, and continue technical assessment of merging Excalibur and TCM designs.
- 21536 Continue guidance unit integration, gun hardening, systems software development, and programmed maneuver flight demonstration.
- 7694 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.
- 4553 Continue Platform Integration effort including design and build of prototype hardware for Platform Integration Kit and Fuze Setter, conduct Preliminary Design Review (PDR) and initiate development of requirements for Advanced Field Artillery Tactical Direction System (AFATDS).
- 3119 Initiate projectile system level testing, and continue analysis.
- 8832 Continue Unitary warhead development.
- 2831 Procures 30 test projectiles and 18 guidance test projectiles for Contractor Development Testing.
- 3500 Support TCM development, to include merger assessment of technology with Excalibur program.

Total 61300

FY 2003 Planned Program

- 10832 Complete airframe tactical structure and conduct 39 and 56 caliber contractor development testing with merged Excalibur-TCM design.
- 9486 Continue Unitary warhead development.
- 11818 Continue Systems and Specialty Engineering program to include reliability and maintainability, quality assurance, integrated logistics support and human factors engineering.
- 7119 Continue Platform Integration effort including test and evaluation of prototype hardware for Platform Integration Kit and Fuze Setter, and conduct Critical Design Review (CDR)).
- 6449 Continue projectile system level testing and analysis to evaluate system effectiveness.
- 20735 Continue guidance unit integration, gun hardening, systems software development, and programmed maneuver.
- 4449 Procures 18 structural test projectiles and 34 guidance test projectiles for Contractor Development Testing.

Total 70888

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604814A - Sense and Destroy Armament Missile -
Eng Dev**

PROJECT

708

<u>B. Other Program Funding Summary</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>
Trajectory Correctable Munitions 603639 D64A	2884	0	0	0	0	0	0	0	2884
Procurement Ammunition Army: E80103	0	0	0	31147	26238	22047	28510	Continuing	Continuing
OPA2: Enhanced Portable Inductive Fuze Setter (E-PIAFS): AD3260	0	0	0	6926	7301	0	0	0	19356

C. Acquisition Strategy: The Product Management Office (PMO) is in the process of merging the Trajectory Correctable Munitions (TCM) and Excalibur programs to satisfy the common guided extended range requirement. This merger will support Congressional intent of reducing the risk of the Excalibur program through TCM technology. The PMO plans to award a single, merged contract for the balance of SDD with options for LRIP.

<u>D. Schedule Profile</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 Platform Integration & EPIAFS Systems Development	2Q						
Complete Initial Merger Assessment Study	4Q						
Initiate Guidance System Test Firings		3Q					
Initiate Unitary Warhead Contract Development Test Firing		1Q					
Extended Range Demonstration			2Q				
In Process Review (IPR)		4Q					
Contractor Pre-Qualification Tests			4Q				
EPIAFS Product Development Review (PDR)		3Q					
EPIAFS Critical Design Review (CDR)			4Q				
Excalibur Critical Design Review (CDR)				1Q			
Start Developmental Technical (DT) Test ,Evaluation and Qualification			4Q				
Independent Program Review (IPR) for LRIP Initiation				1-2Q			
Award LRIP 1 Contract				2Q			
Complete Developmental Technical Test and Evaluation					2Q		

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604814A - Sense and Destroy Armament Missile - Eng Dev

PROJECT
708

D. Schedule Profile (continued)	<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 LRIP II Contract					2Q		
First Article and Live Fire Test and Evaluation						4Q	

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604814A - Sense and Destroy Armament Missile - Eng

708

Dev

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	32327	1Q	40523	1Q	35589	125975	125975
b . Award Fee on Excalibur Development Contract	C/CPIF	Raytheon Systems, Tucson, AZ	0	14	4Q	1627	2-4Q	2742	2-4Q	2494	6877	0
c . Competitive Design Development Efforts and TCM Merger Assessment	C/CPIF	TBD	0	490	2-3Q	2940	2-3Q	0		0	3430	0
d . Unitary Block II Technology Refresh	TBD	TBD	0	0		0		0		48000	48000	0
e . Platform Integration Paladin	C/CPIF	PM Paladin Support Contract, TRW, Carson, CA	0	150	4Q	500	3Q	0		0	650	0
f . Misc Contracts	SS/FP	TBD	0	125	3Q	242	1-4Q	0		50	417	0
g . E-PIAFS Systems Contractor	C/CPAF	TBD	0	0		0		1000	2Q	1500	2500	0
h . Platform Integration Systems Contractor	C/CPAF	TBD	0	0		0		1800	1Q	500	2300	0
i . Crusader Handling System	C/CPAF	United Defense, MN	0	0		2000	3Q	0		0	2000	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604814A - Sense and Destroy Armament Missile - Eng
Dev

PROJECT
708

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:			0	18315		39636		46065		88133	192149	125975

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	In House	Excalibur PM, Picatinny Arsenal, NJ	0	1185	1-4Q	3184	1-4Q	3387	1-4Q	7228	14984	0
b . Govt IPT Support - Excalibur XM982	MIPR	ARDEC, Picatinny Arsenal, NJ	0	5308	1-3Q	5705	1Q	5899	1Q	10221	27133	0
c . ARDEC TCM Support	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		560	1-4Q	0		0	560	0
d . Govt Support - Ft Sill	MIPR	Ft. Sill, OK	0	340	1Q	214	1Q	300	1Q	230	1084	0
e . Paladin Platform Integration	MIPR	PM Paladin, Picatinny Arsenal, NJ	0	50	2Q	400	2-4Q	0		0	450	0
f . Modeling and Structural Development	MIPR	Army Research Labs, Adelphi, MD	0	857	1-2Q	544	1-4Q	800	1-2Q	438	2639	0
g . Govt IPT Support - Excalibur Platform Integration	MIPR	ARDEC, Picatinny Arsenal, NJ	0	1170	1-3Q	1781	1Q	2600	1Q	3000	8551	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604814A - Sense and Destroy Armament Missile - Eng

708

Dev

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
h . Milestone Support	SS/FP	Camber, Alexandria, VA	0	117	3Q	182	1-2Q	182	1Q	0	481	0
i . Technical Spt Contract for Platform Integration	SS/FP	Camber, Dallas, TX	0	82	1Q	97	1Q	70	1Q	0	249	0
j . Miscellaneous Support	MIPR	VAR	0	77	1-4Q	175	1-4Q	395	1-4Q	97	744	0
k . NAVY Platform Integration Software Support	MIPR	Navy Surface Warfare Center, MD	0	0		80	2Q	0		0	80	0
l . AFATDS	MIPR	PM EFECTS (AFATDS), FT Monmouth, NJ	0	0		68	2Q	0		0	68	0
Subtotal:			0	9186		12990		13633		21214	57023	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604814A - Sense and Destroy Armament Missile - Eng

708

Dev

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	560	1Q	3840	1-4Q	7590	1-4Q	7200	19190	0
b . Test Analysis and instrumentation	MIPR	Army Research Labs, Adelphi, MD	0	280	1-3Q	260	1Q	0		0	540	0
c . Telemetry Support	SS/FF	Physical Science Laboratories (PSL), Las Cruces, NM	0	116	3Q	560	1Q	400	1Q	400	1476	0
d . Telemetry Support	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		1389	1Q	600	1Q	800	2789	0
e . Telemetry Cryptographic Hardware	MIPR	Ft. Huachuca, AZ	0	78	2-4Q	0		0		0	78	0
f . Tri-Service Software Assessment	MIPR	OSD, Wash, DC	0	61	1Q	0		0		0	61	0
g . Operational Test Support	MIPR	ATEC, Alexandria, VA	0	0		0		0		14296	14296	0
h . Target Replacement Definition, Maintenance and Repair	MIPR	Ft Sill, OK	0	0		100	3-4Q	2600	2-4Q	5700	8400	0
i . ARDEC Testing	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		475	1-4Q	0		0	475	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604814A - Sense and Destroy Armament Missile - Eng
Dev**

708

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
j . Test Gun Equipment	MIPR	Watervliet Arsenal, MA	0	0		2050	2Q	0		0	2050	0
Subtotal:			0	1095		8674		11190		28396	49355	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:			0	28596		61300		70888		137743	298527	125975
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604817A - Combat Identification

COST (In Thousands)	FY 2001 Actual	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	6705	2989	1995	0	0	0	0	0	155116
482 GROUND CID (BCIS)	3838	0	0	0	0	0	0	0	123922
902 INDIVIDUAL COMBAT IDENTIFICATION SYSTEM (ICIDS)	2867	2989	1995	0	0	0	0	0	31194

A. Mission Description and Budget Item Justification: 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 482 addressed the ground-to-ground vehicle mounted mission and Project 902 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-to-Objective 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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604817A - Combat Identification

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	5313	3014	0
Appropriated Value	5362	3014	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-25	0
b. SBIR/STTR	-158	0	0
c. Omnibus or Other Above Threshold Reprogrammings	0	0	0
d. Below Threshold Reprogramming	1550	0	0
e. Rescissions	-49	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	1995
Current Budget Submit (FY 2003 PB)	6705	2989	1995

Change Summary Explanation:

FY2001 - \$1.550M reprogrammed into Proj 482 to fund BCIS A-Kit effort
 FY2003 - \$1.995M transferred from OPA2 (BA0515) to Proj 902 to support IOT

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604817A - Combat Identification						PROJECT 902	
COST (In Thousands)	FY 2001 Actual	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)	2867	2989	1995	0	0	0	0	0	31194

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 2001 Accomplishments:

- 1766 Completed fabrication, assembly and test of 50 System Development and Demonstration (SDD) hardware systems to support technical testing.
 - 487 Completed Phase II, Development Testing.
 - 290 Performed data reduction and analysis from government test.
 - 324 Conducted Airborne Certification.
- Total 2867

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604817A - Combat Identification

PROJECT

902**FY 2002 Planned Program**

- 2039 Conduct Land Warrior Interoperability Study.
- 450 Develop Computer Based Training.
- 500 Continue Software Effort to Interface with Army Key Management System.

Total 2989

FY 2003 Planned Program

- 1600 Conduct Initial Operational Test and Evaluation (IOT&E).
- 395 Perform data reduction and analysis from government test.

Total 1995

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604817A - Combat Identification

PROJECT
902

B. Other Program Funding Summary

	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	10939	10423	0	0	0	0	0	0	21362

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, was awarded in September 2001 to provide an orderly ramp up to production.

D. Schedule Profile

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete fabrication of 50 hardware systems	1Q						
Development Test, Phase II	1-2Q						
Airborne Certification	3Q						
Milestone C	4Q						
LRIP Award	4Q						
Initial Operational Test & Evaluation (IOT&E)			4Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604817A - Combat Identification

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	General Dynamics, Scottsdale, AZ	20979	994	1Q	0		0		0	21973	21973
b . Land Warrior Interoperability Effort	C/CPIF	General Dynamics, Scottsdale, AZ	0	0		1860	1Q	0		0	1860	1860
Subtotal:			20979	994		1860		0		0	23833	23833

Remarks: General Dynamics purchased Motorola's Integrated Information Systems Group in 2001.

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	450	1Q	775	1Q	0		0	1345	1345
b . Matrix Support	MIPR	Misc	641	153	1-2Q	140	1-2Q	118	1Q	0	1052	1052
Subtotal:			761	603		915		118		0	2397	2397

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	330	1Q	0		150	1Q	0	1284	1284
b . Development Test, Phase I, II	MIPR	WSMR, OTC, ATEC, etc	0	679	1Q	0		0		0	679	679
c . IOTE	MIPR	ATEC, OTC	0	0		0		1600	1Q	0	1600	1600
Subtotal:			804	1009		0		1750		0	3563	3563

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	261	1Q	214	1Q	127	1Q	0	1401	1401
Subtotal:			799	261		214		127		0	1401	1401

Project Total Cost:			23343	2867		2989		1995		0	31194	31194
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604818A - Army Tactical Command & Control Hardware & Software

COST (In Thousands)	FY 2001 Actual	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	37849	57216	80672	57291	66271	64036	60146	Continuing	Continuing
323 COMMON HARDWARE SYSTEMS	12035	16947	22526	11950	11302	11481	11612	Continuing	Continuing
334 COMMON SOFTWARE	4432	4681	9261	9968	16957	17266	17468	Continuing	Continuing
C12 STANDARD INTEGRATED COMMAND POSTS (SICPS)	0	0	2505	2498	3988	2492	2486	0	13969
C29 CENTRALIZED TECHNICAL SUPPORT FACILITY (CTSF)	0	0	11572	11825	12084	12360	12621	0	60462
C34 ARMY TAC C2 SYS ENG	15588	27719	13541	14052	14027	14014	13984	0	153376
C39 TACTICAL OPERATIONS CENTERS (TOCS)	5794	7869	5265	0	1786	1882	1975	0	36618
C3A ARMY AIRBORNE COMMAND & CONTROL SYS (A2C2S)	0	0	16002	6998	6127	4541	0	Continuing	Continuing

A. Mission Description and Budget Item Justification: The umbrella program to exploit automation technology for the conduct of combat operations is the Army Tactical Command and Control System (ATCCS) program which is a component of the Army Battle Command System (ABCS). The ATCCS program provides automation in the five battlefield functional areas (BFAs) with the following specific systems: (1) Maneuver Control System (MCS); (2) Effects and Fires Command and Control Systems (EFCCS); (3) All Source Analysis System (ASAS) for Intelligence/Electronic Warfare; (4) Forward Area Air Defense Command, Control and Intelligence System (FAADC2I); and (5) 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 (CTSF) which provides a single technical "center of mass" for software checkout and physical system integration. The Common Hardware and Software projects provide 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. The Army Airborne Command & Control (A2C2S) provides the avionics system required to horizontally and vertically integrate the battlefield. These systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604818A - Army Tactical Command & Control Hardware & Software

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY 2002 PB)	39059	50887	49141
Appropriated Value	39420	57687	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-471	0
b. SBIR / STTR	-1114	0	0
c. Omnibus or Other Above Threshold Reprogrammings	0	0	0
d. Below Threshold Reprogramming	-97	0	0
e. Rescissions	-360	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	31531
Current Budget Submit (FY 2003 PB)	37849	57216	80672

Change Summary Explanation:

Funding -

FY 2003: Plus Up of \$13.428M to C34 to finance SE&I costs for ATCCS under one funding line.

FY 2003: Information Dissemination Management-Tactical (IDM-T) Plus Up of \$4.490M to C334.

FY 2003: Addition of \$16.002M for C3A Army Airborne Command & Control System (A2C2S) as a new project code.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar					PROJECT 323			
COST (In Thousands)	FY 2001 Actual	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	12035	16947	22526	11950	11302	11481	11612	Continuing	Continuing	

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

FY 2001 Accomplishments:

- 3933 Continued management of the acquisition and delivery of CHS-2 equipment in support of customer requirements
- 655 Continued supporting customers testing efforts with CHS equipment
- 1400 Continued technology insertion
- 5600 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.
- 447 ABCS System Engineering and Integration efforts

Total 12035

FY 2002 Planned Program

- 4495 Continue management of the acquisition and delivery of CHS-2 equipment in support of customer requirements
- 3084 Initiate follow-on contract requirements effort (CHS-3)
- 300 Continue supporting customers testing efforts with CHS equipment
- 617 ABCS System Engineering and Integration efforts

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604818A - Army Tactical Command & Control
Hardware & Softwar**

PROJECT

323

FY 2002 Planned Program (Continued)

- 6746 Continue 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
- 1705 Continue technology insertion

Total 16947

FY 2003 Planned Program

- 4631 Continue management of the acquisition and delivery of CHS-2 equipment in support of customer requirements
- 300 Continue supporting customers testing efforts with CHS equipment
- 648 ABCS System Engineering and Integration efforts
- 12000 CHS-3 Non-Recurring Engineering
- 2000 CHS-3 Integration, Testing and Demonstration
- 2947 CHS-3 Source Selection Evaluation Board

Total 22526

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). 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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
**0604818A - Army Tactical Command & Control
 Hardware & Softwar**

PROJECT
323

<u>D. Schedule Profile</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>
LCU contract expired	3Q						
CHS-2 Technology Insertion (continuous)	1-4Q	1-4Q		1-4Q	1-4Q	1-4Q	1-4Q
Initiate follow-on contract requirements effort (CHS-3)		1Q					
CHS-3 contract award			3Q				
Delivery of CHS-3 V2 initial production hardware					2Q		
CHS-2 contract expires					3Q		

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604818A - Army Tactical Command & Control

323

Hardware & Softwar

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 Follow-on CHS-3	MIPR	CECOM Matrix Support, Fort Monmouth, NJ	19933	560	1-2Q	1667	1-2Q	3209	1-2Q	Continue	Continue	0
b . CHS-3 Non-Recurring Engineering	FFP/IDIQ	TBD	0	0		0		12000	3Q	0	12000	12000
c . Technical Insertion	MISC	Miscellaneous	7164	1400	1-3Q	1705	1-3Q	0		Continue	Continue	0
d . Contractor/Govt Support - Engineering/Logistics/CHS-2 Ordering and CHS-3 Efforts	C/T&M and MIPR	PM ATCCS, Fort Monmouth, NJ	33482	2663	1-3Q	4576	1-3Q	2970	1-3Q	Continue	Continue	0
e . Hi-Tech Software Contract	C/T&M and MIPR	CSC, Fort Monmouth, NJ office	7654	0		0		0		7654	7654	0
f . Systems Engineering Support	MIPR	MITRE, Eatontown and Fort Monmouth, NJ office	9518	655	1Q	660	1Q	693	1Q	Continue	Continue	0
g . 3-D Display Technology	OTA	Concurrent Technology Corporation, PA	4000	5600	1Q	6746	2-3Q	0		0	16346	0
h . ABCS System Engineering and Integration Efforts	MIPR	PEO C3S, Fort Monmouth, NJ	0	447	1Q	617	1Q	648	1Q	Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar	PROJECT 323
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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:			81751	11325		15971		19520		Continue	Continue	12000

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 . Not applicable			0	0		0		0		0	0	0
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 . CHS Test Activities	MIPR	Other Government Activities	0	0		300	2-4Q	2300	2-4Q	Continue	Continue	0
Subtotal:			0	0		300		2300		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604818A - Army Tactical Command & Control
Hardware & Softwar**

323

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 Office Management	In house	PM ATCCS, Fort Monmouth, NJ	0	710	1-4Q	676	1-4Q	706	1-4Q	Continue	Continue	0
Subtotal:			0	710		676		706		Continue	Continue	0
Project Total Cost:			81751	12035		16947		22526		Continue	Continue	12000

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar	PROJECT 334
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COST (In Thousands)	FY 2001 Actual	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	4432	4681	9261	9968	16957	17266	17468	Continuing	Continuing

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. FY03-07 includes work under the Information Dissemination & Data Management-Tactical (IDM-T) which will cover web-based management tools. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 913 Continued 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 Continued the execution of the common software technology and reuse program, continued supporting customer integration and testing, integrated Defense Message System client software into the ABCS baseline, continued the exploration and evaluation of new software technologies in support of the overall CS program and continued developing, upgrading and delivery of DII COE products into Army and Joint Service systems.

Total 4432

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.
- 3822 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 4681

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604818A - Army Tactical Command & Control
Hardware & Softwar**

PROJECT

334**FY 2003 Planned Program**

- 870 Continue the management of the acquisition and delivery of CS and COTS products in support of Army and Joint Service customer requirements.
- 3691 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.
- 4490 Information Dissemination Management - Tactical (IDM-T) effort. IDM-T will be integrated into the Army Battlefield Command and Control Systems (ABCS) version 7.0 and beyond and will be accessed by ABCS user terminals.
- 210 ABCS System Engineering and Integration Efforts.

Total 9261

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.

Software development is performed in accordance with Army Software Blocking Policy. DII COE software product deliveries are made every six (6) months.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
334

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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 of CS Lab, Data Access & JMTK	MIPR	CECOM, Fort Monmouth, NJ	0	362	1-3Q	365	1-3Q	370	1-3Q	Continue	Continue	0
b . Engineering/Software Development	MIPR	Various GSA Contractors / Various Locations	0	3453	1-3Q	3752	1-3Q	8121	1-4Q	Continue	Continue	0
c . ABCS SE&I	MIPR	PEO C3S, Fort Monmouth, NJ	0	0		0		210	1Q	0	210	0
Subtotal:			0	3815		4117		8701		Continue	Continue	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 . Automation Support	GSA / MIPR	PKMM, Oceanport, NJ	0	66	1-3Q	70	1-3Q	60	1-3Q	Continue	Continue	0
Subtotal:			0	66		70		60		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604818A - Army Tactical Command & Control

334

Hardware & Softwar

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 . Not applicable			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

Remarks: DT is performed by development contractors and is covered under the Product Development section of this R-3. OT is funded by the applicable BFA application programs.

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 Office Management	In-House	Fort Monmouth, NJ	0	551	1-3Q	494	1-3Q	500	1-3Q	Continue	Continue	0
Subtotal:			0	551		494		500		Continue	Continue	0

Project Total Cost:			0	4432		4681		9261		Continue	Continue	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar					PROJECT C12			
COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C12 STANDARD INTEGRATED COMMAND POSTS (SICPS)		0	0	2505	2498	3988	2492	2486	0	13969

A. Mission Description and Budget Item Justification: The Standard Integrated Command Post System (SICPS) program procures five (5) command post variants, each designed to accommodate the various Battlefield Functional Areas (BFAs) and Tactical Operations Centers (TOCs) of the Army Battle Command System (ABCS) and other customers. The ABCS customers include the Army Tactical Command and Control System (ATCCS) to include Maneuver Control System (MCS), Effects and Fire Command and Control Systems (EFCCS), the Combat Services Support Control System (CSSCS), the Forward Area Air Defense Command and Control System (FAADC2), the Air and Missile Defense Planning and Control System (AMDPCS), the All Source Analysis System (ASAS), and the Integrated Meteorological System (IMETS). This also supports the First Digitized Corps (FDC), First Digitized Division (FDD), Second Digitized Division (SDD) and Transformation efforts. The seven (7) command post variants are: SICPS Test Command Post (CP), Rigid Wall Shelter (RWS) CP mounted on the High Mobility Multipurpose Wheeled Vehicle (HMMWV), Conversion Kits for the M577 Track Vehicle to make the M1068 Track CP, Installation Kits for the 5-Ton Expansible Van (E-Van), and Installation Kits for the Soft Top HMMWV, Large SICPS Shelter (LSS), and Modular Expandable Rigid Wall Shelter (MERWS). SICPS is essential to the Army's transformation efforts, providing mobile and environmentally protected platforms for the ABCS which is a major part of the Army Chief of Staff's efforts to digitize the battlefield. The RDT&E Program develops and matures the enabling technologies required to meet the ABCS Capstone Requirements Document (CRD) and develops SICPS designs for FDC, FDD, SDD and the transformation force. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

This effort was funded under Logistics & Engineering Equipment (PE 0604804, project 429) FY 2001.

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604818A - Army Tactical Command & Control
Hardware & Softwar**

PROJECT

C12

FY 2002 Planned Program

This effort was funded under PE 64804/429 in FY 2002.

FY 2003 Planned Program

- 250 Large SICPS Tent. PdM Platforms will continue development of an alternate configuration of the SICPS Tent Command Post. This alternate design will include a larger base module than the current SICPS tent along with the required infrastructure to facilitate Tactical Operations Center (TOC) configurations. This Large SICPS Tent will be able to be complexed together by adjoining modules and will also have the capability to interface with existing SICPS.
- 1745 Continuation of Large SICPS Shelter (LSS) Modular Expendable Rigid Wall Shelter (MERWS) development. Infrastructure required to facilitate Tactical Operations Center (TOC) configurations.
- 510 Objective Remote Workstation (RWS) (w/o trailer) development.

Total 2505

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar	PROJECT C12
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<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA 2, BZ9962	57587	32759	29535	36693	28623	44573	32774	Continuing	Continuing

C. Acquisition Strategy: In-house design and development effort transitioning to Depot for production and integration of Installation Kit (IK). Performance specifications and qualification procedures will be developed concurrently with IK development by Government Integrated Product Team (IPT) team.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Testing of Large Tent			1-2Q				
Development of LSS/MERWS IK			2-4Q				
Test & Verification for LSS/MERWS IK			1-2Q				
Development IK for FMTV			2-4Q	1Q			
Test & verification for FMTV IK					1-3Q		
Development of Objective RWS (w/Trailer)			1Q	1Q	1Q	1Q	1Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604818A - Army Tactical Command & Control

C12

Hardware & Softwar

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/Government, LSS/MERWS IK Development	MIPR	Natick, MA	0	0		0		1500	2-4Q	Continue	1500	0
b . RWS follow on concept development		TBD	0	0		0		505	1-2Q	0	505	0
Subtotal:			0	0		0		2005		Continue	2005	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	MIPR	Fort Monmouth, NJ	0	0		0		250	1-2Q	Continue	Continue	0
Subtotal:			0	0		0		250		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604818A - Army Tactical Command & Control

C12

Hardware & Softwar

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 . Tent Testing	MIPR	APG, MD	0	0		0		250		0	250	0
Subtotal:			0	0		0		250		0	250	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 . Not applicable			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			0	0		0		2505		Continue	Continue	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar				PROJECT C29	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C29 CENTRALIZED TECHNICAL SUPPORT FACILITY (CTSF)	0	0	11572	11825	12084	12360	12621	0	60462

A. Mission Description and Budget Item Justification: Project DC29 - Centralized Technical Support Facility: The Central Technical Support Facility (CTSF) is located in Fort Hood, Texas. The CTSF provides a centralized on-the-ground capability to ensure interoperability among various digitized platforms and serves as the final integration and maturation facility for Common Operating Environment (COE). The CTSF is the Warfighters "Edge" that acts as an enabler for rapid integration of dissimilar software and hardware systems through real time, on-site integration of soldiers, contractors, testers, Program Managers and the requirements community. Also the CTSF provides a single technical "center of mass" for software checkout and system integration and provides a controlled environment with connectivity to other C4I systems either on-site or through the Army Interoperability Network (AIN) to support digital integration and fielding. This effort supports the Legacy to Objective transition path to the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

Project not funded in FY 2001.

FY 2002 Planned Program

Project not funded in FY 2002.

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604818A - Army Tactical Command & Control
Hardware & Softwar**

PROJECT

C29

FY 2003 Planned Program

- 2224 Continue test planning/procedures/execution/reporting
- 2029 Continue software engineering.
- 1451 Provide infrastructure (Facilities, upgrades, additions).
- 1287 Continue field engineering.
- 1275 Continue management operations.
- 800 Provide equipment for instrumentation, simulation/stimulation, software evaluation and development tools.
- 785 Continue configuration management.
- 300 Provide networks connections to include DISN, SIPRNET, NIPRNET, GUARDNET.
- 221 Provide logistics support.
- 1200 Provide DA Mandated Intra-Army Digital Certification test and validation.

Total 11572

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

C. Acquisition Strategy: This project provides the technical and programmatic disciplines required for systems engineering and integration, experimentation, acquisition management, testing, software development, interoperability, fielding and sustainment to ensure an interoperable and affordable ATCCS. The Program Executive Officer for Command, Control, Communications, Tactical (PEO C3T) has planned an evolutionary approach to fielding ATCCS as soon as possible.

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
**0604818A - Army Tactical Command & Control
 Hardware & Softwar**

PROJECT
C29

<u>D. Schedule Profile</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>
Prairie Warrior 02 (ABCS 7.0)			2Q				
Roving Sands			3Q				
III Corps UFL 03			4Q				
III Corps UFL 04				4Q			
Prairie Warrior 05					3Q		
III Corps UFL 05					4Q		

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604818A - Army Tactical Command & Control

C29

Hardware & Softwar

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 . MANTECH (Direct Labor)	PWD	Fort Hood, TX	0	0		0		2915	1Q	Continue	Continue	0
b . Computer Science Corp (System Engineering)	PWD	Fort Hood, TX/Fort Monmouth, NJ	0	0		0		1158	2Q	Continue	1158	0
c . MITRE Corp (System Engineering)	PWD	Fort Hood, TX/Eatontown, NJ	0	0		0		1106	1Q	Continue	Continue	0
d . CAMBER (Config Mgt/Testing)	PWD	Fort Hood, TX	0	0		0		1025	1Q	Continue	Continue	0
e . TRW (Field Engineering)	PWD	Fort Hood, TX	0	0		0		965	1Q	Continue	Continue	0
f . Nichols (Logistics Support)	MIPR	Fort Hood, TX	0	0		0		754	2Q	Continue	Continue	0
g . ILEX (Field Engineering)	PWD	Fort Hood, TX	0	0		0		377	1Q	Continue	Continue	0
h . Robbin-Gioia (Data Base Management)	PWD	Fort Hood, TX/Fort Monmouth, NJ	0	0		0		300	1Q	Continue	Continue	0
i . GTE	PWD	Fort Hood, TX	0	0		0		231	1-4Q	Continue	Continue	0
j . EWA	PWD	Fort Hood, TX	0	0		0		140	1-2Q	Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar	PROJECT C29
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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:			0	0		0		8971		Continue	Continue	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 . CECOM Matrix	MIPRs	Fort Hood, TX/Fort Monmouth, NJ	0	0		0		145	1Q	Continue	Continue	0
b . In-House Support	MIPRs	Fort Hood, TX	0	0		0		123	1Q	Continue	Continue	0
c . Other Government Support	MIPRs	Fort Hood, TX	0	0		0		33	1Q	Continue	Continue	0
Subtotal:			0	0		0		301		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
C29

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 . Electronic Proving Grounds (EPG)	MIPRs		0	0		0		2300	1-4Q	Continue	Continue	0
Subtotal:			0	0		0		2300		Continue	Continue	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 . Not applicable			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			0	0		0		11572		Continue	Continue	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar	PROJECT C34
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COST (In Thousands)	FY 2001 Actual	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	15588	27719	13541	14052	14027	14014	13984	0	153376

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. This effort supports the Legacy to Objective transition path to the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 1054 Continued ABCS/AWE Integrated Logistics Support/configuration management
- 1098 Continued ABCS/AWE Testing and Evaluation of all BFA fielded software
- 457 Continued ABCS/AWE Fielding/Scheduling
- 1614 Continued ABCS/AWE information engineering
- 523 Conducted and supported system interoperability engineering
- 273 Continued exploring state of the art technology insertion in support of the ABCS program
- 295 Continued development and implementation of the ABCS information assurance
- 1796 Continued ABCS/AWE System Engineering and Integration
- 8478 Central Technical Support Facility Technical Division (CTSF-TD) efforts to meet the Army's digital fielding requirements.

Total 15588

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604818A - Army Tactical Command & Control
Hardware & Softwar**

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
- 4924 Continue ABCS/AWE System Engineering
- 5500 Continue System of Systems 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 27719

FY 2003 Planned Program

- 962 Continue ABCS/AWE Integrated Logistics Support/configuration management
- 798 Continue ABCS/AWE Testing and Evaluation of all BFA fielded software
- 1165 Continue ABCS/AWE Fielding/Scheduling
- 1184 Continue DD2-N Support
- 1369 Continue ABCS/AWE information engineering
- 676 Conduct and support system interoperability engineering
- 485 Continue exploring state of the art technology insertion in support of the ABCS program
- 637 Continue development and implementation of the ABCS information assurance

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604818A - Army Tactical Command & Control
Hardware & Softwar**

PROJECT

C34

FY 2003 Planned Program (Continued)

- 2992 Continue ABCS/AWE System Engineering
- 3273 Continue System of Systems Development

Total 13541

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

C. Acquisition Strategy: This project provides the technical and programmatic disciplines required for systems engineering and integration, experimentation, acquisition management, testing, software development, interoperability, fielding and sustainment to ensure an interoperable and affordable ATCCS. The Program Executive Officer for Command , Control, Communications, Tactical (PEO C3T) has planned an evolutionary approach to fielding ATCCS as soon as possible.

<u>D. Schedule Profile</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>
ABCS 6.2.1	3Q						
PRAIRIE WARRIOR	3Q						
ABCS 7.0 SOFTWARE INTEGRATION		2Q					
NTC 00-05		2Q					
ABCS 7.0 SOFTWARE INTEGRATION		2Q					
2ND IBCT FIELDING		4Q					
ROVING SANDS			2Q				
3RD IBCT FIELDING			3Q				
SECOND DIGITIZED DIVISION (2DD)			4Q				
Second Digitized Division (2DD)			4Q				
Digitized Corps				4Q			
4TH IBCT FIELDING				4Q			
101ST AA (Air Assault)					2Q		
Digitize XVIII Corps					3Q		

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
**0604818A - Army Tactical Command & Control
 Hardware & Softwar**

PROJECT
C34

D. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
5TH IBCT FIELDING					4Q		

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604818A - Army Tactical Command & Control

C34

Hardware & Softwar

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	3518	1Q	1902	2Q	Continue	8039	0
b. CSC	PWD	Fort Monmouth, NJ/Fort Hood, TX	12804	2084	2Q	6478	2Q	3491	2Q	Continue	24857	0
c. MITRE	PWD	Ft Monmouth, NJ/Eatontown, NJ	8099	3402	1Q	2632	1Q	4294	2Q	Continue	Continue	0
d. MANTECH (Direct Labor)	PWD	Fort Monmouth, NJ/Fort Hood, TX	2470	1449	2Q	2627	2Q	0	2Q	Continue	Continue	0
e. EPG	MIPR	Fort Huachuca, AZ	800	628	1Q	785	1Q	0	2Q	Continue	Continue	0
f. CAMBER (Config Mgt/Testing)	PWD	Fort Hood, TX	0	725	1Q	785	2Q	0	2Q	Continue	Continue	0
g. NICHOLS	MIPR	Fort Hood, TX	0	0		554	3Q	0	3Q	Continue	Continue	0
h. ROBBINS-GIOIA	PWD	Fort Monmouth, NJ/Fort Hood, TX	1005	784	1Q	1300	1Q	1025	2Q	Continue	Continue	0
i. RAYTHEON	PWD	Fort Monmouth, NJ/Fort Hood, TX	0	0		250	1Q	197	2Q	Continue	Continue	0
j. LOCKHEED MARTIN	MIPR	Eatontown, NJ	0	732	1Q	2500	1Q	0	1-2Q	Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604818A - Army Tactical Command & Control
Hardware & Softwar**

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	1-4Q	Continue	Continue	0
l . Misc Contracts	PWD	Fort Monmouth, NJ/Fort Hood, TX	3143	501	1-2Q	711	1-2Q	0	1-2Q	Continue	Continue	0
m . Unixpros	PWD	Eatontown, NJ	1045	815	1Q	1851	1Q	0	1-2Q	Continue	Continue	0
n . ATSC	MIPR	Fort Leavenworth, KY	500	390	2Q	350	2Q	300	2Q	Continue	Continue	0
o . IDA	MIPR	Fort Monmouth, NJ	300	234	2Q	400	2Q	390	2Q	Continue	Continue	0
p . ITT	PWD	Eatontown, NJ	1070	0		0		0		Continue	Continue	0
q . SAIC	PWD	Eatontown, NJ	0	96	1Q	96	1Q	77	2Q	Continue	Continue	0
r . ILEX	PWD	Fort Hood, TX	0	0	1Q	333	1Q	0	1-2Q	Continue	Continue	0
s . BOOZ-ALLEN	PWD	Eatontown, NJ	0	0		750	2Q	592	2Q	Continue	Continue	0
Subtotal:			34143	13326		26327		12268		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
C34

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	315	1-2Q	Continue	Continue	0
b . CECOM Matrix	MIPRs	Fort Monmouth, NJ/Fort Hood, TX	615	590	1Q	1052	1Q	925	1-2Q	Continue	Continue	0
c . Other Government Support	MIPRs	Fort Monmouth, NJ/Fort Hood, TX/Fort Belvoir, VA	1778	1273	1Q	40	2Q	33	2Q	Continue	Continue	0
Subtotal:			6782	2262		1392		1273		Continue	Continue	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 . Not applicable			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604818A - Army Tactical Command & Control
Hardware & Softwar**

C34

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 . Not applicable			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			40925	15588		27719		13541		Continue	Continue	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar				PROJECT C39	
COST (In Thousands)	FY 2001 Actual	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)	5794	7869	5265	0	1786	1882	1975	0	36618

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 develop and mature the enabling technologies required to meet the ABCS Capstone Requirements Document (CRD) and 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. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 2648 Sustain Division XXI prototype TOCs
 - 2978 Design and engineering of upgrades to 4th ID TOCs and initial design for 1st CD.
 - 168 ABCS SE&I
- Total 5794

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604818A - Army Tactical Command & Control
Hardware & Softwar**

PROJECT

C39

FY 2002 Planned Program

- 1000 Sustain Division XXI Prototype TOCs
- 5369 System and design engineering for 1st CAV and IBCT (Transformation Forces)
- 1500 Develop enabling technologies and technology insertion to meet ORD requirements

Total 7869

FY 2003 Planned Program

- 3189 Design and engineering for 17 1st CAV TOCs, IBCT-3 (Transformation Forces and III Corps).
- 1988 Develop enabling technologies and technology insertion to meet ORD requirements.
- 88 ABCS SE&I

Total 5265

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar	PROJECT C39
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<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Other Procurement Army 2 - SSN: BZ9865	57127	38653	42332	19940	65074	74356	63065	1839790	2235114

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 SDD, III Corps and IBCTs.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Design Reviews	4Q	4Q	4Q	4Q	4Q	4Q	4Q
Interoperability Demonstration	3Q	1Q	1Q	1Q	1Q	1Q	1Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
C39

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	2036	1Q	2200	1Q	Continue	11448	0
b . Motorola	C/CPFF	Huntsville, AL	4815	2736	1-2Q	4653	1-2Q	2212	1-2Q	Continue	14416	0
c . In-House/Gov't Support	Various	Various	1460	782	2Q	980	1-2Q	565	1-2Q	Continue	Continue	0
d . ABCS SE& I			0	168	1Q	0		88	1Q	0	256	0
Subtotal:			11579	5594		7669		5065		Continue	Continue	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	200	2Q	Continue	Continue	Continue
Subtotal:			200	200		200		200		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604818A - Army Tactical Command & Control
Hardware & Softwar**

C39

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 . Not applicable			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Not applicable			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			11779	5794		7869		5265		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar				PROJECT C3A	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C3A ARMY AIRBORNE COMMAND & CONTROL SYS (A2C2S)	0	0	16002	6998	6127	4541	0	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project funds the development of an avionics system required to horizontally and vertically integrate the battlefield. Tasks in this project support research efforts in the engineering and manufacturing development phase of this system. This system supports 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 and control by hosting the Army Battle Command System (ABCS) such as Maneuver Control Systems (MCS), All Source Analysis System (ASAS), Advanced Field Artillery Data System (AFATDS), and Force XXI Battle Command Brigade and Below (FBCB2). In addition to line-of-sight Combat Net Radios (including Single Channel Ground Airborne Radio System (SINGARS), Advanced System Improvement Program (ASIP) and HAVEQUICK II the A2C2S capabilities supports deep operations with non-line-of-sight radios 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.

A2C2S is not a new start. Previous funding is under 0604201A-Aircraft Avionics.

FY 2001 Accomplishments:

FY 2001 funding was under 0604201A-Aircraft Avionics.

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

**0604818A - Army Tactical Command & Control
Hardware & Softwar**

PROJECT

C3A

FY 2002 Planned Program

FY 2002 funding is under 0604201A-Aircraft Avionics.

FY 2003 Planned Program

- 1688 Continue System Development and Evaluation BLK I
- 4736 Complete Integration of Prototypes 3 to 7
- 217 Complete Integration of TDS
- 3564 Continue Systems Engineering, Logistics and Software Integration
- 270 ABCS System Engineering and Integration Efforts
- 4946 Continue Development Testing and Platform LUT
- 581 Continue Support of Systems 1 and 2

Total 16002

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar	PROJECT C3A
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<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Airborne Command and Control SSN AA0710	0	0	27738	42281	51816	55664	0	Continuing	Continuing

C. Acquisition Strategy: The A2C2S is being developed by the Government with the Aircraft OEM as an consultant. A Competitive contract will be awarded in FY02 with options.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Continue System Development and Evaluation BLK I and BLK II			1-4Q	1-4Q	1-4Q	1-4Q	
Continue/Complete A2C2S Prototype Fabrication and Platform Integration Systems 3 to 7			1-4Q				
Continue System Engineering, Software Integration and Logistics Planning for A2C2S			1-4Q	1-4Q	1-4Q	1-4Q	
Continue Development Testing			1-4Q	1-4Q	1-4Q	1-4Q	
LUT			2Q				

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

**0604818A - Army Tactical Command & Control
Hardware & Softwar**

C3A

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	Various	Various	0	0		0		1486	1Q	Continue	Continue	Continue
b . Prototype Integration (Systems 1-7)	MIPR/CPIF	AATD/Raytheon	0	0		0		4353	1Q	Continue	4353	Continue
c . System Engineering	Various	Various	0	0		0		1769		Continue	Continue	Continue
Subtotal:			0	0		0		7608		Continue	Continue	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 Integration	Various	Various	0	0		0		711	1Q	Continue	Continue	0
b . Systems Logistics Support(ILS,NET,Tech Pubs)	CPIF/MIPR	Raytheon/AMCOM IMMC/CECOM	0	0		0		385	1Q	Continue	Continue	0
c . System 1 and 2 Deployment to 4th ID and 101st	Various	Various	0	0		0		581		Continue	Continue	0
d . ABCS System Engineering and Integration Efforts	MIPR	CECOM	0	0		0		270	1Q	0	270	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Softwar	PROJECT C3A
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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
e . Training Development	CPIF	Raytheon	0	0		0		152		0	152	0
f . Configuration Management	CPIF	Raytheon	0	0		0		209		0	209	0
g . Technical Data	Various	Raytheon	0	0		0		339		0	339	0
Subtotal:			0	0		0		2647		Continue	Continue	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 . Development Test & Evaluation and AWQ	MIPR/CPIF	ATEC/RTTC/AATD/AED/Raytheon	0	0		0		3151	1Q	Continue	Continue	0
b . LUT (FY 03)	Various	Various	0	0		0		1794		0	1794	0
Subtotal:			0	0		0		4945		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control
Hardware & Softwar

PROJECT
C3A

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	Various	Various	0	0		0		802	1Q	Continue	Continue	0
Subtotal:			0	0		0		802		Continue	Continue	0
Project Total Cost:			0	0		0		16002		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604819A - LOSAT						PROJECT 046		
COST (In Thousands)		FY 2001 Actual	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	25364	21416	14463	15183	16160	0	0	0	92586

A. Mission Description and Budget Item Justification: Line-of-Sight Anti-Tank (LOSAT) and the Kinetic Energy Missile (KEM) technology provides the foundation for the Objective Force Kinetic Energy Missile Requirement. This program focuses on the integration of the LOSAT weapon system into a light, early deployable configuration in order to help remedy the urgent need for the early entry force lethality shortfall against heavy armor 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. Once in theatre, LOSAT is extremely mobile, to include air droppable and sling loading under CH-47 and UH-60L aircraft. The performance of the 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 to support entry into Low Rate Initial Production (LRIP) in FY 04. The System Development Demonstration (SDD) effort is funded in this Program Element (PE) and 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 2001 Accomplishments:

- 3380 Updated Performance Specifications to include new Operational Requirements Document.
- 10284 Updated Missile and Fire Unit preliminary designs to incorporate new Performance Specification Requirements.
- 1740 Updated Fire Unit software requirements analysis to incorporate new Performance Specification Requirements.
- 2502 Conducted Reliability, Maintainability, Producibility analyses.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development**0604819A - LOSAT****046****FY 2001 Accomplishments: (Continued)**

- 4560 Began incorporating enhanced Built-in-test/Built-in-test equipment requirements into electronic components of Fire Unit and Missile.
- 2898 Began Supportability analysis to support production/fielding objectives.

Total 25364

FY 2002 Planned Program

- 8095 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.
- 2298 Begin Missile fabrication, assembly, and test of additional qualification test hardware.
- 1001 Finalize design modifications and initiate fabrication of resupply trailer and HMMWV.
- 2385 Finalize software enhancements and BIT/BITE software into Fire Unit software.
- 5492 Continue supportability analysis to support production/fielding objectives.

Total 21416

FY 2003 Planned Program

- 2974 Complete delivery of enhanced Fire Unit designs and perform full environmental qualification tests.
- 2635 Complete delivery of enhanced missile designs and perform full environmental qualification tests and flight tests (PQT).
- 1554 Complete software upgrades and perform system level certification.
- 5909 Finalize Logistics Management Information and perform Supportability demonstration.
- 1391 Deliver enhanced training simulators and conduct soldier training in preparation.

Total 14463

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604819A - LOSAT

PROJECT
046

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002/03 PB)	26555	21596	14176
Appropriated Value	26800	21596	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-180	0
b. SBIR / STTR	-790	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	-400	0	0
e. Rescissions	-246	0	0
Adjustments to Budget Years Since FY2002/03 PB	0	0	287
Current Budget Submit (FY 2003 PB)	25364	21416	14463

<u>C. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
H09100 LOSAT	0	9361	17937	61391	108794	112773	111693	0	421949
0603654A Line-of-Sight Technology Demo	50262	69859	28283	0	0	0	0	0	185730

C. Other Program Funding Summary: *FY02 Advance Procurement and FY03 procurement funds will procure 144 missiles which is the residual inventory of the ACTD effort.

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604819A - LOSAT

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. The ACTD contract awarded in April 1998 was modified in December 2000 to include the SDD effort. A Milestone Decision Review will be conducted in FY04 to assess design maturity and authorize entry into Low Rate Initial Production (LRIP).

<u>E. Schedule Profile</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 Risk Reduction Design and Test	1Q						
Complete Preliminary Design Reviews	4Q						
Critical Design Review		2Q					
Begin Missile and Fire Unit Assembly		3Q					
Complete Component Level Qualifications			1Q				
Begin System Qualification and Flight Tests			2Q				
Begin User Experimentation			3Q				
Limited User Testing				1Q			
Milestone C				1Q			
Complete System Qualification and Flight Tests				2Q			
First Unit Equipped (FUE)				4Q			
IOTE					2Q		
Begin Fielding						2Q	

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604819A - LOSAT

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 . SDD Contract	CPIF	LMMFC, Dallas, TX	0	18515	1Q	11706	1Q	7793	1Q	11747	49761	0
b . Live Fire Hardware	CPFF	Alliant Tech	0	1610	2Q	0		0		0	1610	0
c . RDEC Support	TBD	Huntsville, AL	0	322		2750		1558		760	5390	0
d . Follow-on-Development	TBD	TBD	0	0		0		0		0	0	0
Subtotal:			0	20447		14456		9351		12507	56761	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	2093		3105		3094		6709	15001	0
b . Functional Government Support			0	170		615		261		901	1947	0
c . MISC			0	888		867		20		967	2742	0
d . OGA			0	89		73		20		270	452	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604819A - LOSAT

046

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	3240		4660		3395		8847	20142	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 . Range Support			0	181		432		785		4120	5518	0
b . Other Test			0	339		457		268		4320	5384	0
c . GFE			0	366		0		0		0	366	0
Subtotal:			0	886		889		1053		8440	11268	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604819A - LOSAT

046

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	791		1411		664		1549	4415	0
Subtotal:			0	791		1411		664		1549	4415	0
Project Total Cost:			0	25364		21416		14463		31343	92586	0

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604820A - RADAR DEVELOPMENT				PROJECT E10	
COST (In Thousands)	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	Complete	
E10 SENTINEL	12911	5119	0	0	0	0	0	0	30236

A. Mission Description and Budget Item Justification: 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). The Sentinel Enhanced Target Range and Classification (ETRAC) Modernization program will improve Sentinel's capability against evolving threats. ETRAC provides the capability for Sentinel to detect and classify small radar cross-section targets, such as cruise missiles and unmanned aerial vehicles. The system provides Forward Area Short Range Air Defense (SHORAD) system information dominance via a digital air picture for support of maneuver forces and critical assets. Without ETRAC, Sentinel would not be able to determine aircraft type or to support manned vs. unmanned determinations to fully support precision engagements beyond visual range. In order to engage at ranges beyond visual, the 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 precision engagements beyond visual range. ETRAC Modernization efforts support the Legacy to Objective 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 2001 Accomplishments:

- 3117 Completed Transmitter Prototype Design and Development
- 3213 Conducted ETRAC Prototype Design and Development
- 4837 Bought 2 ETRAC Prototypes to support KPP Demonstration
- 1000 ETRAC Receiver/Exciter Risk Mitigation Efforts
- 497 Initiated Integration and Test of ETRAC

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604820A - RADAR DEVELOPMENT

E10

FY 2001 Accomplishments: (Continued)

- 247 Conducted ETRAC Target Classification Prototype Design and Development

Total 12911

FY 2002 Planned Program

- 1914 Complete ETRAC Prototype Design and Development
- 631 Complete ETRAC Target Classification Prototype Design and Development
- 2574 Complete Integration and Test of ETRAC

Total 5119

FY 2003 Planned Program

Project not funded in FY 2003.

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	13306	5162	0
Appropriated Value	13429	5162	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-43	0
b. SBIR / STTR	-395	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-123	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	0
Current Budget Submit (FY 2003 PB)	12911	5119	0

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604820A - RADAR DEVELOPMENT	PROJECT E10
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<u>C. Other Program Funding Summary</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>
Other Procurement, Army 2 (SSN WK 5053)	23944	1872	31	0	0	0	0	0	74145
Other Procurement, Army 2 (SSN WK 5057)	0	31442	26519	18362	14202	14361	14494	0	119380
Spares (SSN BS 9732)	1595	2036	0	0	0	0	0	0	7472

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. 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.

<u>E. Schedule Profile</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 Waveform/Signal Data Processor Design	1-4Q						
Range Extension SW Design	1-4Q						
Transmitter Integration and Test		1Q					
ETRAC Waveform/Signal Data Processor Integration and Checkout		1-2Q					
Range Extension Integration and Checkout		1-2Q					
Target Classification Design Validation		3-4Q					
ETRAC Key Performance Parameters (KPP) Demonstration		3Q					

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604823A - FIREFINDER						PROJECT L85		
COST (In Thousands)	FY 2001 Actual	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	45466	26732	26122	7249	10714	0	0	0	179511

A. Mission Description and Budget Item Justification: 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. 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 Firefinder 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 transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 2478 Continued development and Validation and Verification (V&V) of the Radar Environmental Simulation System (RESS) and other simulations
- 17447 Completed build of System #1 and began integration and contractor test
- 5763 Completed development and manufacture of Power Amplifier Modules and Sub Array Modules for System #2
- 1673 Began build of System #2
- 14225 Continued development of Joint Technical Architecture-Army (JTA-A) compliant operational and communications software design, coding and unit test
- 3880 Continued development to provide early warning and cueing of Tactical Ballistic Missiles (TBMs)

Total 45466

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development**0604823A - FIREFINDER****L85****FY 2002 Planned Program**

- 300 Continue development and V&V of the RESS and other simulations
- 5006 Continue integration and contractor test of System #1
- 14176 Continue build and begin integration and contractor test of System #2
- 1411 Begin test site surveys and Electromagnetic Compatibility (EMC) studies
- 3703 Continue development of Joint Technical Architecture-Army (JTA -A) compliant operational and communications software design, coding and unit test
- 2136 Continue development to provide early warning and cueing of TBMs

Total 26732

FY 2003 Planned Program

- 200 Complete development and V&V of the RESS and other simulations
- 2650 Complete integration and contractor test of System #1
- 8180 Complete integration and contractor test of System #2
- 10686 Conduct Government Live Ammunition/Verification Testing
- 3194 Begin development of training devices
- 712 Complete development of JTA-A compliant operational and communications software design, coding and unit test
- 500 Complete development to provide early warning and cueing on TBMs

Total 26122

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604823A - FIREFINDER

PROJECT
L85

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	46928	26956	26093
Appropriated Value	47363	26956	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-224	0
b. SBIR / STTR	-1382	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0
d. Below Threshold Reprogramming	-80	0	0
e. Rescissions	-435	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	29
Current Budget Submit (FY 2003 PB)	45546	26732	26122

<u>C. Other Program Funding Summary</u>	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	65655	90454	103111	105458	628410	993088

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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. The systems will be used to support an Initial Operational Test and Evaluation (IOTE) prior to fielding to achieve Initial Operational Capability (IOC).

E. Schedule Profile	<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 and conduct V&V of the RESS	1-4Q	1-4Q	1Q				
Develop, code and test JTA-A compliant operational and communications software	1-4Q	1-4Q	1Q				
Develop capability to provide early warning and cueing of TBMs	1-4Q	1-4Q	1Q				
Fabricate, integrate and conduct contractor test of System #1	1-4Q	1-4Q	1Q				
Fabricate, integrate and conduct contractor test of System #2	4Q	1-4Q	1-4Q				
Conduct Live Ammunition/Verification Test			1-4Q				
Develop Training Devices			3-4Q	1-4Q	1-4Q		
Conduct Limited User Test				1-2Q			
Milestone C for LRIP				3Q			
Award LRIP Contract				3Q			
Incorporate meteorological data for enhanced long range targeting					1-4Q		

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604823A - FIREFINDER

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	50976	40227	1-4Q	22114	1-4Q	14370	1-2Q	1389	129076	129076
b . Ancillary Hardware Dev	TBD	Various	3189	1503	1-4Q	760	1-3Q	1532	1-2Q	4421	11405	11405
c . Trainers Dev	SS/TBD	Raytheon Sys, CA/MS	0	0		0		2060	3Q	8930	10990	10990
d . Sys Engrg (Contractor)	SS/FP	Various	1792	355	2Q	160	2Q	212	2Q	82	2601	2601
e . Sys Engrg (Government)	MIPR	Various	1595	996	1-2Q	585	1-2Q	436	1-2Q	350	3962	3962
f . Software Engineering	C/CPAF	Telos, OK	799	453	1-2Q	237	1-2Q	490	1-2Q	250	2229	2229
g . SSEB	MIPR	Various	227	0		0		0		0	227	227
Subtotal:			58578	43534		23856		19100		15422	160490	160490

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	560	183	1-2Q	185	1-2Q	264	1-2Q	297	1489	1489
b . Integrated Logistics Spt (ILS) - Contractor	TBD	Various	174	327	2Q	167	2Q	150	2Q	75	893	893
c . ILS Support -Government	MIPR	CECOM, Fort Monmouth, NJ	308	80	2Q	56	2Q	154	2Q	250	848	848
d . Configuration Mgmt Spt- Government	MIPR	CECOM, Fort Monmouth, NJ	296	164	1Q	110	1Q	236	1Q	130	936	936
Subtotal:			1338	754		518		804		752	4166	4166

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	0	2Q	0		2150	2Q	0	2150	2150
b . Verification Testing	MIPR	Various	0	50		60	2Q	2275	1-2Q	0	2385	2385
c . Test Support	MIPR	Various	759	270	1-3Q	1216	1-3Q	275	1-2Q	175	2695	2695
d . Limited User Test	MIPR	Various	0	0		0		0		250	250	250
e . Logistics/Training	MIPR	Various	0	0		0		250	3-4Q	0	250	250
Subtotal:			759	320		1276		4950		425	7730	7730

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	315	1-2Q	316	1-2Q	382	1-2Q	249	2226	2226
b . Program Management - Government	MIPR	CECOM, Fort Monmouth, NJ	298	0	1Q	141	1Q	141	1Q	300	880	880
c . Product Manager Office - Internal Support	MIPR/PWD	CECOM, Fort Monmouth, NJ	1291	543	1-4Q	625	1-4Q	745	1-4Q	815	4019	4019

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604823A - FIREFINDER

L85

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:			2553	858		1082		1268		1364	7125	7125
Project Total Cost:			63228	45466		26732		26122		17963	179511	179511

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604854A - Artillery Systems - EMD

COST (In Thousands)	FY 2001 Actual	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	19006	61961	251376	466434	424971	498756	199260	62500	1990447
2KT CRUSADER OPERATIONAL TEST	218	197	397	1188	199	3288	5370	30200	41167
503 CRUSADER-ED	1	39120	228747	452838	424772	495468	193890	32300	1867136
509 LIGHTWEIGHT 155M HOWITZER	16726	18048	22032	12408	0	0	0	0	74839
516 PALADIN/FAASV	2061	4596	200	0	0	0	0	0	7305

A. Mission Description and Budget Item Justification: This program element supports the Joint Light Weight 155mm Howitzer (LW155), the Crusader, and the Paladin/FAASV Improvement programs.

The LW155, a joint program with the Marine Corps, provides the replacement for the current 1970's vintage M198, 155mm Towed Howitzer. The LW155 provides significant improvement in strategic and tactical mobility over the M198. The Army portion of the joint development is the Towed Artillery Digitization (TAD). TAD is the digital fire control system for the LW155. TAD provides increased accuracy, survivability, and lethality for Army and USMC 155mm Towed Artillery. This system supports both the Legacy and Interim transition paths of the Army Transformation Campaign Plan (TCP).

The Crusader system is the Army's next generation self-propelled howitzer (SPH) and artillery resupply vehicles (RSVs) and is the first installment of the Objective Force in the Army Transformation. Crusader will displace the M109A6, Paladin, 155mm Self-Propelled Howitzer and its accompanying resupply vehicle, the M992, Field Artillery Ammunition Support Vehicle (FAASV). Crusader has significantly increased capabilities in the areas of lethality, mobility, survivability, resupply, command and control, and sustainability by capitalizing on mature, state-of-the-art technologies. The combination of Crusader's unique capabilities, including vehicle speed, rate of fire, range, and exploitation of computers and communications yield unparalleled fire support capabilities. The Crusader vehicles have been designed specifically to facilitate air transportability -- combination of any two vehicles air transportable in either a C5 or C17 aircraft. The mix of resupply vehicles (tracked RSV-T and wheeled RSV-W) allows the Commander additional flexibility in responding to the situations presented by the threat by adjusting the employment of the tracked and wheeled resupply vehicles. The Crusader program transitions from Program Definition and Risk Reduction (PDRR) to System Development and Demonstration (SDD) in 3Q FY03. This system supports the Legacy to Objective transition path of the Army Transformation Campaign Plan (TCP).

The Paladin/FAASV project integrates several system improvements that provide for: stowage and automated dispensing of M231/M232, Modular Artillery Charge System (MACS), that is displacing the current propelling charges; replacement of M82 cartridge primer with a laser propellant ignition system; and upgrading components of the Automated Fire Control System to avoid obsolescence. These system improvements provide significantly improved mission effectiveness, increased reliability, maintainability and supportability, as well as reduce life cycle costs. This system supports the Legacy transition path of the Army Transformation Campaign Plan (TCP).

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604854A - Artillery Systems - EMD

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	19920	62481	239689
Appropriated Value	20105	62481	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-520	0
b. SBIR / STTR	-578	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	-338	0	0
e. Rescissions	-183	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	11687
Current Budget Submit (FY 2003 PB)	19006	61961	251376

FY03 LW155 program increased to align Army's portion of the joint program with the United States Marine Corps (USMC) LW155 program.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604854A - Artillery Systems - EMD	PROJECT 503
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COST (In Thousands)	FY 2001 Actual	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	1	39120	228747	452838	424772	495468	193890	32300	1867136

A. Mission Description and Budget Item Justification: This project supports the Crusader Program. The Crusader system is the Army's next generation self-propelled howitzer (SPH) and artillery resupply vehicles (RSVs) and is the first installment of the Objective Force in the Army Transformation. Crusader has significantly increased capabilities in the areas of lethality, mobility, survivability, resupply, command and control, and sustainability by capitalizing on mature, state-of-the-art technologies. The combination of Crusader's unique capabilities, including vehicle speed, rate of fire, range, and exploitation of computers and communications yield unparalleled fire support capabilities for US forces. The Crusader vehicles have been designed specifically to facilitate air transportability - with a minimum of a combination of any two vehicles air transportable in either a C5 or C17 aircraft. The mix of resupply vehicles (tracked RSV-T and wheeled RSV-W) also gives the Commander in theater additional flexibility in responding to the threat, by adapting his Tactics, Techniques and Procedures with the most appropriate utilization and interaction of the tracked and wheeled resupply vehicles. The Crusader program transitions from PDRR to SDD in 3Q FY03. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 1 Project management/support
- Total 1

FY 2002 Planned Program

- 39120 Product Development: Order SDD Long Lead Items for prototype vehicles.
- Total 39120

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604854A - Artillery Systems - EMD

PROJECT

503

FY 2003 Planned Program

- 214642 Product Development: Initiate manufacturing of SDD prototypes (7 SPH, 5 RSV-T, 4 RSV-W). Initiate SDD/Low Rate Initial Production (LRIP) design update.
- 9298 Support and management: Initiate SDD Project Management efforts to include engineering analysis, product development team support and engineering management activities. Initiate coordination and development of Milestone C activities in accordance with approved Acquisition Program Baseline (APB) and Acquisition Strategy.
- 4807 Test and evaluation: Initiate testing of SPH 1 and XM297 Cannon at Yuma Proving Ground (YPG) under SDD contract phase. Test full-up powerpack in propulsion test lab.

Total 228747

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604854A - Artillery Systems - EMD

PROJECT
503

<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE, BA5, Army, PE 0603854, D505	341765	444091	246465	0	0	0	0	0	1594902
Procurement, WTCV, Army, G83500	0	0	0	24702	94221	258300	641564	3347760	4366547
Procurement, WTCV, Army, G83600	0	0	0	13237	52933	116103	250563	1222518	1655354
RDTE, BA5, Army, PE 0604854, D2KT	218	197	397	1188	199	3288	5370	30200	41142
Procurement, Ammo, Army, ER8021	39565	71910	122411	108802	99327	80070	184940	Continuing	Continuing
Procurement, WTCV, Army G83601	0	0	0	5876	23462	53043	115285	585458	783124
Procurement, OPA, Army, D16500*	0	0	0	0	0	3697	10170	80594	94461

*Funding summary represents a portion of the overall funding in D16500, Other Procurement, Army. This funding is associated with the Resupply Vehicle - Wheeled (RSV-W).

C. Acquisition Strategy: There will be a seamless transition from Program Development Risk Reduction (PDRR) to System Development and Demonstration (SDD) that eliminates inefficiencies in ramping down/up during the milestone decision. During the period of Oct-Dec 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. Due to this restructure of both cost and schedule, an adjustment to the Acquisition Program Baseline (APB) was required and approved in December 2000. 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)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604854A - Artillery Systems - EMD

PROJECT
503

<u>D. Schedule Profile</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 the order of SDD Long Lead Items (LLI)		2Q					
Initiate Manufacturing of SDD Prototypes			3Q				
Initiate BH&T Testing				2Q			
Initiate Deliveries of SDD Prototypes					1Q		
Initiate PQT SDD Testing					1Q		
Order LRIP LLI					3Q		
Milestone C IPR						2Q	
FDTE							1Q
Delivery of LRIP Prototypes							2Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604854A - Artillery Systems - EMD

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	1		35548	1Q	190800	1Q	1387787	1614136	0
b . Systems Development Engineering	PO	PM Crusader, Picatinny Arsenal, NJ	0	0		0		4664	1Q	37615	42279	0
c . Systems Development Engineering	PO	ARDEC, Picatinny Arsenal, NJ	0	0		0		6880	1Q	7790	14670	0
d . Systems Development Engineering	PO	TACOM, Warren, MI	0	0		0		345	1Q	2763	3108	0
e . Systems Development Engineering	PO	ARL, Adelphi, MD	0	0		0		478	1-2Q	705	1183	0
f . Systems Development Engineering	PO	Various OGAs	0	0		0		4675	1-2Q	7514	12189	0
g . Systems Development Engineering	Various	Various Contracts	0	0		3572	1-2Q	6800	1-2Q	7800	18172	0
Subtotal:			0	1		39120		214642		1451974	1705737	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604854A - Artillery Systems - EMD

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	ARDEC, Picatinny Arsenal, NJ	0	0		0		5160	1Q	38583	43743	0
b . Integrated Logistics Support	PO	RIA, Rock Island, IL	0	0		0		111	1Q	814	925	0
c . Development Support	PO	TACOM, Warren, MI	0	0		0		1336	1Q	9871	11207	0
d . Development Support	PO	ARL, Adelphi, MD	0	0		0		285	1Q	1582	1867	0
e . Development Support	PO	Various OGAs	0	0		0		628	1-2Q	4431	5059	0
f . Development Support	Various	Various Contracts	0	0		0		206	1-2Q	643	849	0
Subtotal:			0	0		0		7726		55924	63650	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604854A - Artillery Systems - EMD

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		3775	1-2Q	64751	68526	0
b . Ammunition and Propellant	PO	Various sources	0	0		0		1032	1-3Q	16218	17250	0
Subtotal:			0	0		0		4807		80969	85776	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		175	1Q	885	1060	0
b . Project Management Support	SS/FP	System Research & Integration, Inc., VA	0	0		0		74	1Q	479	553	0
c . Project Management Support	SS/FP	PRC, VA	0	0		0		70	1Q	635	705	0
d . Project Management Support	SS/FP	SAIC, VA	0	0		0		401	1Q	2662	3063	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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 . Systems Engineering Support	SS/FP	Camber, Inc, NJ	0	0		0		100	1Q	478	578	0
f . Systems Engineering Support	SS/FP	PRC, VA	0	0		0		93	1Q	857	950	0
g . Systems Engineering Support	SS/FP	LMI, VA	0	0		0		75	1Q	0	75	0
h . Systems Engineering Support	SS/FP	TBD	0	0		0		36	1Q	0	36	0
i . Software Development Support	SS/FP	Camber Inc, NJ	0	0		0		100	1Q	612	712	0
j . Software Development Support	SS/FP	Mitre Corporation, VA	0	0		0		131	1Q	1147	1278	0
k . Software Development Support	SS/FP	High Performance Technology Inc, HPTI, VA	0	0		0		213	1Q	1736	1949	0
l . Software Development Support	SS/FP	Averstar Inc, OK	0	0		0		104	1Q	910	1014	0
Subtotal:			0	0		0		1572		10401	11973	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604854A - Artillery Systems - EMD

503

Project Total Cost:

0

1

39120

228747

1599268

1867136

0

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604854A - Artillery Systems - EMD	PROJECT 509
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COST (In Thousands)	FY 2001 Actual	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	16726	18048	22032	12408	0	0	0	0	74839

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 supports Towed Artillery Digitization (TAD), a digital fire control system for the XM777 Towed Howitzer (base model of LW155), making it an XM777E1. TAD will increase the accuracy, survivability, and lethality of Army and USMC 155mm Towed Artillery. This system supports both the Legacy and Interim transition paths of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 3561 Funded matrix engineering support for various Integrated Product Teams (IPTs), System Requirements Review and System Design Review. Other tasks included work on the Test and Evaluation Master Plan, Software Development Plan, and other program documents. An initial Tri-Service Assessment was also conducted.
- 1003 Funded core program management personnel, facilities, business management, and other technical and administrative tasks.
- 10049 Funded the FY01 increment of the TAD SDD Contract. Efforts included review and refinement of system requirements, system hardware and software baselines, preliminary allocations, component trade studies and preliminary integration analysis. Includes first Award Fee.
- 1545 Funded eight long lead cannon assembly performs for SDD. Also provided partial funding for the manufacture of a pilot production howitzer, which will be used in TAD technical and operational testing.
- 568 Funded trade studies and design work required to integrate the TAD System onto the XM777 lightweight howitzer.

Total 16726

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0604854A - Artillery Systems - EMD

PROJECT

509**FY 2002 Planned Program**

- 5057 Funds matrix engineering support for IPTs; system reviews including System Software Review; Preliminary Design Review; Detailed Design Review; software test planning; and other SDD tasks.
- 8450 Funds FY02 increment of the TAD SDD contract. Includes software development and component level development. Test Articles funded under this contract appear below.
- 2450 Funds the initial fabrication of TAD developmental test articles for component and system level technical testing.
- 500 Funds the remainder of the pilot production gun, to be used in TAD technical and operational testing.
- 500 Funds software reuse for the XM777E1.
- 1091 Funds core program management personnel, facilities, business management, and other technical and administrative tasks.

Total 18048

FY 2003 Planned Program

- 11392 Funds continuation of TAD SDD contract. Includes build and delivery of TAD developmental test articles.
- 1900 Funds continued software development, software test planning and component level tests.
- 3000 Funds Technical Testing.
- 1323 Funds core program management, business management, facilities, and other administrative and technical support.
- 4417 Funds matrix engineering support.

Total 22032

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604854A - Artillery Systems - EMD

PROJECT
509

<u>B. Other Program Funding Summary</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, Navy LW155 Towed How 060363M	14125	13203	11700	6000	0	0	0	0	71373
Procurement, Marine Corps LW155 Towed Howitzer with TAD Prod, BLIN 218500	11004	0	63054	112371	181017	183329	76400	0	627175
Procurement, WTCV, Army, LW155 with TAD G01700	0	1099	0	21011	58327	104038	139142	138500	462117

C. Acquisition Strategy: The overall XM777E1 Acquisition Strategy/Plan is to execute a CPIF contract, where the prime contractor has Total System Performance Responsibility (TSPR). TSPR includes the development and testing of TAD, as well as integrating the final TAD hardware onto the XM777 lightweight howitzer for a final integrated XM77E1 system. The Marine Corps will retrofit their LW155 howitzers with TAD.

<u>D. Schedule Profile</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>
TAD Design	1-4Q	1-4Q	1-2Q				
TAD Technical Testing			2-4Q				
Begin Technical Testing and Conduct Logistics Demonstration				1-2Q			
TAD Multi-service Operational Test				3Q			
TAD Milestone C				4Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604854A - Artillery Systems - EMD

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 . XM777E1 SDD Contract	CPIF	General Dynamics	2906	10049	1Q	8450	3Q	11392	1Q	5000	37797	37797
b . Matrix Engineering Support	MIPR	ARDEC, Picatinny Arsenal, NJ	2127	3561	1-4Q	5057	1-4Q	4417	1-4Q	2432	17594	0
c . Integration of TAD onto XM777 Howitzer (Trade Study and Design Effort)	CPIF	BAE Barrow-in-Furness, UK	0	568	4Q	0		0		0	568	0
d . Software Modification for Reuse	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		500	1-4Q	0		0	500	0
e . Software Development and Software Test Planning	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		0		1900	1-4Q	0	1900	0
Subtotal:			5033	14178		14007		17709		7432	58359	37797

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604854A - Artillery Systems - EMD

PROJECT
509

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	1003	1-4Q	1091	1-4Q	1323	1-4Q	800	4809	0
Subtotal:			592	1003		1091		1323		800	4809	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 . SDD Test Articles	CPIF	General Dynamics	0	1545	1-4Q	2950	1-4Q	0		0	4495	4495
b . Technical Testing	MIPR	Yuma Proving Grounds, AZ	0	0		0		3000	1-4Q	0	3000	0
c . Operational Testing	MIPR	Yuma Proving Grounds, AZ	0	0		0		0		4176	4176	0
Subtotal:			0	1545		2950		3000		4176	11671	4495

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604854A - Artillery Systems - EMD

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
			0	0		0		0		0	0	0
Subtotal:												
Project Total Cost:			5625	16726		18048		22032		12408	74839	42292

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604865A - Patriot PAC-3 Theater Missile Defense Acq - EMD						PROJECT 01C		
COST (In Thousands)	FY 2001 Actual	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	150819	177404	79774	22045	16295	0	446337

A. Mission Description and Budget Item Justification: PATRIOT is a 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 (TBMs), cruise missiles (CMs), unmanned aerial vehicles (UAVs) and other air breathing threats as part of the Ballistic Missile Defense (BMD) systems, a multi-layered Theater Air and Missile Defense Architecture. Funds will ensure PAC-3 will remain interoperable in the BMDS. 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. The Army requirement for PAC-3 supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2003 Planned Program

- 60500 Continue follow-on Block test program with LMMFC and Raytheon.
- 2000 Continue Operational Test & Evaluation.
- 88319 Evolutionary Development.

Total 150819

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604865A - Patriot PAC-3 Theater Missile Defense
Acq - EMD

PROJECT
01C

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY 2002 PB)	0	107100	77200
Congressional Adjustments	0	-107100	0
Appropriated Value	0	0	0
a. Congressional Reductions (FFRDC, Inflation, etc.)	0	0	0
b. OSD Reductions	0	0	0
c. Congressional Reprogramming	0	0	0
d. Emergency Supplemental	0	0	0
e. Below Threshold Reprogramming	0	0	0
Adjustments to Budget Years Since FY 2002 PB	0	0	73619
Current Budget Submit (FY 2003 PB)	0	0	150819

Funding:
 In FY02, the Patriot Advanced Capability (PAC)-3 program (-107.1 million) transferred from Army to the Ballistic Missile Defense Organization (BMDO), now the Missile Defense Agency.
 FY 03 funding increase of (+73.6 million) for Evolutionary Development.

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604865A - Patriot PAC-3 Theater Missile Defense Acq - EMD	PROJECT 01C
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<u>C. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PAC-3, SSNC49200	0	0	471670	450514	501107	502977	501977	0	2428245
PATRIOT MODS, SSN C50700	22718	24942	151307	234600	90198	79431	81634	340100	1024930
Initial Spares, CA0267	2625	726	40655	32692	15206	15622	9811	23337	140674

D. Acquisition Strategy: The design objective of the PATRIOT system is to provide an element of an integrated Ballistic Missile Defense system capable of being modified to cope with the evolving threat. This strategy minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems. The PATRIOT program consists of two interrelated acquisition programs - the PATRIOT PAC-3 Growth Program and the PAC-3 Missile Program. Growth Program modifications are grouped into configurations which are scheduled to be fielded in the same time frame. 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. Funds will ensure PAC-3 will remain interoperable in the BMDS. The missile performance is demonstrated through a series of flight tests and modeling and simulation activities. PAC-3 Block Evolutionary development efforts will further improve system interoperability, commonality, and capabilities against emerging and reactive threats.

<u>E. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
PAC-3 Missile FUE	4Q						
Configuration 3 Initial Operational Test & Evaluation (IOT&E)		1-4Q					
PAC-3 Missile MS III		4Q					
PAC-3 Missile FOT			1-4Q	1-4Q			
PAC-3 Missile FRP			1Q				
PAC-3 Missile IOC					4Q		
Initiate PAC-3 Evolutionary Block Upgrades		1Q					
Evolutionary Block Upgrades earliest Transition to Production					2Q		

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604865A - Patriot PAC-3 Theater Missile Defense

01C

Acq - EMD

E. Schedule Profile (continued)

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

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604865A - Patriot PAC-3 Theater Missile Defense Acq - EMD

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		0		0		0	0	0
b . PAC-3 Missile Integration	SS-CPIF	Raytheon, MA	0	0		0		0		0	0	0
c . RDEC	MIPR	MRDEC, AL	0	0		0		2298	1Q	0	2298	0
d . PAC-3 Missile FOT	SS-CPIF	LMMFC, TX	0	0		0		18000	1Q	0	18000	0
e . RSC Integration	SS-CPIF	Raytheon, MA	0	0		0		11000	1Q	0	11000	0
f . PAC-3 Evolutionary Development	CPIF		0	0		0		70319	1Q	0	70319	0
Subtotal:			0	0		0		101617		0	101617	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604865A - Patriot PAC-3 Theater Missile Defense Acq -

01C

EMD

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		0		4100	1Q	0	4100	0
b . OGA/In-House	PO		0	0		0		22902	1Q	0	22902	0
c . Engineering Support	SS-CPIF	Raytheon, MA	0	0		0		2300	2Q	0	2300	0
Subtotal:			0	0		0		29302		0	29302	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		0		12900	1Q	0	12900	0
b . Operational Test Support	MIPR		0	0		0		2000	1Q	0	2000	0
c . Targets	MIPR	SMDC/AL	0	0		0		5000	1Q	0	5000	0
Subtotal:			0	0		0		19900		0	19900	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0604865A - Patriot PAC-3 Theater Missile Defense Acq -

01C

EMD

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		150819		0	150819	0
Project Total Cost:			0	0		0		150819		0	150819	0

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0605013A - Information Technology Development

COST (In Thousands)	FY 2001 Actual	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	100179	108490	50865	35810	40313	49313	50026	0	436376
087 ARMY DISTANCE LEARNING PROGRAM	4582	2144	0	0	0	0	0	0	6726
099 ARMY HUMAN RESOURCE SYSTEM (AHRS)	8501	8546	11230	5023	4728	7058	6847	0	51933
137 TRANS COORDINATORS' AUTO INFO FOR MOVEMENT SYS II	16803	9809	10263	7286	7920	12484	12735	0	77300
184 INSTALLATION SUPPORT MODULES (ISM)	3808	4656	1740	291	292	339	391	0	11517
185 ARMY RECRUITING INFORMATION SUPPORT SYSTEM (ARISS)	7069	18778	10843	2299	2340	2382	2423	0	46134
193 MEDICAL COMMUNICATIONS FOR COMBAT CASUALTY CARE	3202	4650	3707	3645	0	0	0	0	15204
196 CHIEF INFORMATION OFFICE (CIO)	3760	2054	1809	5336	10801	12475	12760	0	48995
252 TACMIS	5080	5493	5838	5846	6050	6194	6331	0	40832
286 PM GCSS-ARMY CORE	1020	0	0	0	0	0	0	0	2400
299 JOINT COMPUTER-AIDED ACQUISITION & LOG SPT (JCALS)	44065	47965	2653	2220	4275	4342	4405	0	109925
316 STACOMP	2289	4395	2782	3864	3907	4039	4134	0	25410

A. Mission Description and Budget Item Justification: Supports efforts to plan, design, develop, and test information technology solutions to fulfill the Army's Warfighter Support Mission and accommodate changing Army requirements while fulfilling future Army needs. Provides for development and acquisition of Combat Service Support (CSS) and business information technology solutions to help arm, sustain, fix, move, train and man the force. Completed development/acquisition efforts will also enhance sustaining base functions and power projection capabilities and facilitate global messaging and electronic data interchange (EDI). Ongoing development efforts support multiple functional areas including logistics, personnel, transportation, training, medical/health protection, and sustaining base.

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0605013A - Information Technology Development

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	94886	98178	34403
Appropriated Value	98170	109378	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions		-888	0
b. SBIR / STTR	-2634	0	0
c. Omnibus or Other Above Threshold Reductions	5200	0	0
d. Below Threshold Reprogramming	344	0	0
e. Rescissions	-901	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	16462
Current Budget Submit (FY 2003 PB)	100179	108490	50865

FY 01 OMNIBUS reprogramming for TC AIMS.
 FY 02 Congressional increase of \$10.2M for the JCALS program and \$1.0M for Electronics Commodity Pilot Program.
 FY 03 funding increase due to \$10.9M plus-up for the ARISS program and an increase of \$5.6M for the AHRS program..

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0605013A - Information Technology Development						PROJECT 099		
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
099 ARMY HUMAN RESOURCE SYSTEM (AHRS)	8501	8546	11230	5023	4728	7058	6847	0	51933

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 now the Army Human Resource System (AHRS). The implementation of AHRS, a subset of the Defense Integrated Military Human Resource System (DIMHRS), requires the development of an authoritative Army Corporate database as a part of DIMHRS. The corporate database will require supporting information/data management processes, reporting, Human Resources (HR) applications, systems, and worldwide access. AHRS is a major contributor to the Total Army Personnel Database (TAPDB) and will be the cornerstone of the Army Personnel Transformation effort.

FY 2001 Accomplishments:

- 2301 Post Deployment Software Support (PDSS) - Engineering Change Packages (ECPs)/System Change Packages (SCPs)/Interim Change Packages (ICPs)
 - 3000 Integrated Total Army Personnel Database (ITAPDB) migration analysis and interface development
 - 3200 Continue PERSTEMPO (Personnel TEMPO) Development
- Total 8501

FY 2002 Planned Program

- 3535 PDSS - ECPs/SCPs/ICPs for SIDPERS-3 and PERSTEMPO
 - 1000 Integrate Total Army Personnel Database (ITAPDB) Migration
 - 4011 Begin Army Human Resource System (AHRS) analysis/development
- Total 8546

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0605013A - Information Technology Development

PROJECT

099**FY 2003 Planned Program**

- 2943 PDSS - ECPs/SCPs/ICPs
- 1000 AHRS Development
- 420 Program Management Office (PMO) Operations
- 802 Engineering and Technical Support
- 6065 Personnel Transformation analysis/development

Total 11230

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
099

<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
W00800, STACOMP	4025	3842	6054	6037	4044	4251	7248	Continuing	Continuing
OMA APE: 432612/432615	1620	1130	2789	3149	2121	2549	2247	Continuing	Continuing

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. The SIDPERS-3 Title 10 functionality is transferring to the Army Human Resource System (AHRS). Additionally, as the Personnel community manages their migration to the Defense Integrated Military Human Resource System (DIMHRS), the functionality resident in the 320+ external interface legacy systems will migrate to AHRS. This migration will begin in FY03, and will ensure the personnel community retains functionality necessary to meet operational requirements, while addressing Transformation requirements.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Post Deployment Software Support (PDSS)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
099

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	2301	1Q	3535	1Q	2943	1Q	Continue	Continue	Continue
b . Software Development	C/FP	Electronic Data Systems, Herndon, VA	0	3000	1Q	5011	1-4Q	1000	1-2Q	Continue	Continue	Continue
c . Software Development	MIPR	PERSCOM, Alexandria, VA	0	3200	2Q	0		6065	1-2Q	0	9265	0
Subtotal:			0	8501		8546		10008		Continue	Continue	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 Services	MIPR	USAISEC, Ft Detrick, MD	0	0		0		802	1Q	0	802	0
Subtotal:			0	0		0		802		0	802	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0605013A - Information Technology Development

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
			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
a . PMO Operations		Ft. Belvoir, VA	0	0		0		420	1-4Q	0	420	0
Subtotal:			0	0		0		420		0	420	0

Project Total Cost:			0	8501		8546		11230		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0605013A - Information Technology Development				PROJECT 137	
COST (In Thousands)	FY 2001 Actual	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	16803	9809	10263	7286	7920	12484	12735	0	77300

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.

FY 2001 Accomplishments:

- 3125 Continue support of Joint Program Management Office Civilian Pay, matrix support and contract services for the software development effort.
 - 184 Provides facilities, supplies, and equipment needed to support continued development.
 - 11894 Release 3.01 (Unit Movement) Software Development
 - 1600 Release 3.01 (Unit Movement) Software Development Test and Evaluation
- Total 16803

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0605013A - Information Technology Development

PROJECT

137**FY 2002 Planned Program**

- 4170 Continue support of Joint Program Management Office Civilian Pay, matrix support and contract services for the software development effort.

 - 1209 Provides facilities, supplies, and equipment needed to support continued development
 - 3230 Block 2 (Enhanced Unit Movement/Web Capabilities) Software Development
 - 1200 Block 2 (Enhanced Unit Movement/Web Capabilities) Software Development Test and Evaluation
- Total 9809

FY 2003 Planned Program

- 4576 Continue support of Joint Program Management Office Civilian Pay, matrix support and contract services for the software development effort.

 - 1570 Provides facilities, supplies, and equipment needed to support continued development
 - 2917 Block 3 (Movements Control & Planning) Software development
 - 1200 Block 3 (Movements Control & Planning) Software Development Test and Evaluation
- Total 10263

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
137

<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA - SSN: BZ8900 TC AIMS II	12348	25316	11496	15066	14501	30631	20179	Continuing	Continuing
OMA - APE: 432612/432615	2194	7577	7641	7630	7624	10330	9559	Continuing	Continuing

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 P3I which was designed to provide a Theater Operations transportation management capability. In August 2001, however, the CMB approved a new Block 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. TC-AIMS II infrastructure requirements are being satisfied through the deployment of Service-procured commercial-off-the-shelf hardware. Funding for Army hardware is included in the TC-AIMS II procurement program.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Milestone III (Release 3.01)		2Q					
Block 2 Milestone III IDPs 0-1			2Q				
Block 3 Milestone III IDPs 2-3				2Q			
Block 4 Milestone III IDPs 4-5					2Q		
Block 5 Milestone III IDPs 6-7						2Q	
Block 6 Milestone III IDPs 8-10							2Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	DynCorp, Springfield, VA	0	11894	4Q	3230	2Q	2917	1Q	Continue	Continue	Continue
Subtotal:			0	11894		3230		2917		Continue	Continue	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 . Rents/Leases	C/FFP	SMART TECH, Springfield, VA	0	184	1Q	1209	2Q	1570	1Q	Continue	Continue	Continue
b . JPMO Contractor Support	C/FFP	Various	0	2094	1-4Q	3003	1-4Q	3374	1-4Q	Continue	Continue	Continue
c . JPMO Operations	In House	JPMO, VA	0	1031	1-4Q	1167	1-4Q	1202	1-4Q	Continue	Continue	Continue
Subtotal:			0	3309		5379		6146		Continue	Continue	Continue

Remarks: JPMO Operations includes contractor support, direct pay of government employees, TDY, training, supplies, etc.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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
a . OT & DT	MIPR	Various	0	1600	1Q	1200	1Q	1200	1Q	0	4000	0
Subtotal:			0	1600		1200		1200		0	4000	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	16803		9809		10263		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0605013A - Information Technology Development						PROJECT 184		
COST (In Thousands)		FY 2001 Actual	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)	3808	4656	1740	291	292	339	391	0	11517

A. Mission Description and Budget Item Justification: Migrates fielded Installation Support Modules (ISM) software to a graphical user interface and supports Web based user access. 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. ISM consists of ten standard, automated software applications packaged into functional modules that integrate day-to-day Army installation business practices and processes. The ISM modules are Central Issue Facility (CIF), Drug and Alcohol Management Information Human Resources System - Field System (DAMIS-FS), Dental Readiness System (DENTRAD), Education Management Information System (EDMIS), In-Processing/Record Utility Update (INPROC/RUU), Out-Processing/Record Utility Update (OUTPROC/RUU), Personnel Locator (PERSLOC), Transition Processing (TRANSPROC II), Automated Instructional Management System-PC (AIMS-PC), and Range Facility Management Support System - Converged (RFMSS-C). The ISM systems supports 52 Army installations located throughout the United States and overseas. It is used extensively by the Army's power projection/power support platforms to enhance soldier readiness processing.

FY 2001 Accomplishments:

- 574 Independent Validation Verification (IVV) Testing
- 3234 Post Deployment Software Support (PDSS) - Emergency Change Packages (ECPs)/System Change Packages (SCPs)

Total 3808

FY 2002 Planned Program

- 574 IVV Testing
- 4082 PDSS - ECPs/SCPs

Total 4656

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0605013A - Information Technology Development	PROJECT 184
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FY 2003 Planned Program

- 500 IVV Testing
- 1240 PDSS - ECPs/SCPs

Total 1740

<u>B. Other Program Funding Summary</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	9487	9389	11226	11976	12324	12640	12996	Continuing	Continuing
BE4162 MACOM AUTOMATION SYSTEMS	0	0	278	795	793	791	789	Continuing	Continuing

C. Acquisition Strategy: This system is in Post Deployment Software Support (PDSS). The present concept calls for the use of full and open competition to implement enhancements as defined by the Functional Proponent (Director of Information Systems for Command, Control, Communications, and Computers (DISC4)).

<u>D. Schedule Profile</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	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
184

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/FPL	SRA, Fairfax, VA	0	3234	1Q	4082	3Q	1240	3Q	Continue	Continue	Continue
Subtotal:			0	3234		4082		1240		Continue	Continue	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

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	C/TM	ANTEON Corp, Fairfax, VA	0	574	2Q	574	2Q	500	2Q	Continue	Continue	Continue
Subtotal:			0	574		574		500		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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
			0	0		0		0		0	0	0
Subtotal:												

Project Total Cost:			0	3808		4656		1740		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0605013A - Information Technology Development				PROJECT 185	
COST (In Thousands)	FY 2001 Actual	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)	7069	18778	10843	2299	2340	2382	2423	0	46134

A. Mission Description and Budget Item Justification: The Army Recruiting Information Support System (ARISS) provides a robust integrated automation capability to enhance Army recruiting business processes. ARISS helps Army attract highly qualified, capable recruits while reducing individual recruiter workload. Army used 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. 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.

FY 2001 Accomplishments:

- 1384 Program Management
 - 767 Engineering and Technical Support
 - 340 Testing
 - 2808 Headquarters Support System (HSS)/Guidance Counselor Redesign Development
 - 1770 System integration
- Total 7069

FY 2002 Planned Program

- 4673 Personnel Module, recruiting Impropriety Module, Data Warehouse Module Enhancements
- 5198 Guidance Counselor Re-Design to support Points of Sale Enhancements
- 5086 RWS Web Based Enhancements to Support Point of Sale
- 1660 Integration of Enhanced Software
- 1800 Testing

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0605013A - Information Technology Development

PROJECT

185

FY 2002 Planned Program (Continued)

- 101 Software Engineering
- 260 User Review

Total 18778

FY 2003 Planned Program

- 4200 Begin development to transition LEADS and MPA to Web-Based
- 1250 Begin development of Point of Sale and ERM
- 1825 Complete and Field Guidance Counselor Re-design
- 825 Continue Data Warehouse/BI Portal/Common Portal project
- 1700 Continue Integration of Enhanced Software
- 810 Testing
- 101 Continue Software Engineering
- 132 Continue User Review

Total 10843

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0605013A - Information Technology Development

185

B. Other Program Funding Summary

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
BE4164, Personnel Automation System	6312	7949	17104	15452	13578	15760	19399	0	104492
331715	5092	12537	23220	28426	30994	53197	53410	0	222845

The funding outlined above supports the entire automation support structure of USAREC. It is not purely dedicated to the ARISS capabilities, but supports all aspects of the infrastructure, including copiers, personnel salaries, IT maintenance, and office automation lifecycle costs.

C. Acquisition Strategy: ARISS Incremental Implementation: 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) was deployed to all recruiters in FY99. Fielding in FY01 includes: Leads/Reports - which provides applicant data projection; Force Structure, Address and Zip Code Realignment (FAZR) - which provides timely, automated leads data from multiple sources to appropriate individual recruiters, links counties/zip codes to Recruiting Station IDs (RSIDs) for market assignment, and automates the Recruiting Market Analysis process; Mission, Product and Awards (MPA) - which automates the processing of mission assignments, mission accomplishments, and the recruiter awards system. Data Warehouse (DW) is the integrated historical repository and Business Intelligence Portal for recruiting. It retains organizational and production data which is used by the Program Analysis and Evaluation staff to assist in mission assignment and market placement of the recruiting force. Guidance Counselor-Redesign (GC-R) is the re-engineering of Guidance Counselor processes to allow for simplification of functions, movement toward web-based processing, and set the foundation for "paperless processing" of enlistment documents. Point of Sale (POS) builds upon the GS-R effort and moves recruiting functions toward a web-based environment (where possible). The intent of POS is to provide qualified recruiters with enlistment capabilities and authority (similar to those of the Guidance Counselor) for use at the applicant's location. Over time, limited applicant self-processing or qualification will be supported over the Internet.

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
185

<u>D. Schedule Profile</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>
Milestone III Final Increment	3Q						
Complete and Field PER Module, RI Module		3Q					
Complete and Field Guidance Counselor Redesign (GC-R)			1Q				
Complete and Field GC-R ERM			3Q				
Complete and Field Point of Sale				1Q			
Complete MPA to Web				3Q			
Complete Data Warehouse and FAZR to Web					1Q		

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0605013A - Information Technology Development

185

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	2808	2Q	16717	2Q	9201	1Q	0	28726	0
b . EDS - System Integration	SS/Time & Material	Fort Knox, KY	0	1770	2Q	1700	2Q	1409	1Q	0	4879	0
Subtotal:			0	4578		18417		10610		0	33605	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, KY	0	804	1Q	0		0		0	804	0
b . PM Support	C/FFP	Various	0	380	1Q	0		0		0	380	0
c . Engineering/Tech Spt	MIPR	ISEC, NJ	0	767	1Q	101	1Q	101	1Q	0	969	0
Subtotal:			0	1951		101		101		0	2153	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
185

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 - User Review	MIPR	ATEC, VA	0	340	2Q	260	2Q	132	1Q	0	732	0
Subtotal:			0	340		260		132		0	732	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	In House	Ft Knox, KY	0	200	1Q	0		0		0	200	0
Subtotal:			0	200		0		0		0	200	0

Project Total Cost:			0	7069		18778		10843		0	36690	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0605013A - Information Technology Development				PROJECT 193	
COST (In Thousands)	FY 2001 Actual	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	3202	4650	3707	3645	0	0	0	0	15204

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 link Medical Information Systems to 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. FY03 funding supports engineering, integration and testing of information management/information technology to enhance combat casualty care within the First Digitized Division/Corps and Army Transformation Brigade Combat Teams (BCT) as well as overall MC4 project management.

FY 2001 Accomplishments:

- 1015 Program Management
 - 396 Logistics Support Planning for Block 1
 - 425 Engineering and Technical Support for Block 1
 - 949 MC4 Testing for Block 1
 - 417 MC4/TMIP Integration and Testing for Block 1
- Total 3202

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0605013A - Information Technology Development

PROJECT

193

FY 2002 Planned Program

- 1135 Program Management
- 842 Logistics Support Planning
- 783 Engineering and Technical Support for Block 1
- 1240 MC4 Testing for Block 1
- 650 MC4/TMIP Integration and Testing for Block 1

Total 4650

FY 2003 Planned Program

- 885 Program Management
- 730 Logistics Support Planning for Block 1
- 613 Engineering and Technical Support for Block 1
- 969 MC4 Testing for Block 1
- 510 MC4/TMIP Integration and Testing for Block 1

Total 3707

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
193

<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
MA8046 MEDICAL C4	1608	7644	4975	7217	12628	13242	10934	Continuing	Continuing
OMA APE 432612	494	868	1272	1961	1105	1584	1800	Continuing	Continuing

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, supporting the DoD standard Theater Medical Information Program (TMIP) integrated software application suite and other Army requirements. Program schedule is closely tied to the development and release of TMIP software applications. Hardware being procured as infrastructure is Commercial-off-the-Shelf (COTS).

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Limited User Test (LUT)	2Q						
MC4 Milestone B/MC4 Block 1 Milestone C		2Q					
MC4 Block 1 IOTE		4Q					
MC4 Block 1 Full Rate Production Decision Review (FRPDR)			2Q				
MC4 Block 2 Milestone C				2Q			

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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
			0	0		0		0		0	0	0
Subtotal:												

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	470	2Q	365	2Q	Continue	Continue	Continue
b . Logistics Planning	MIPR	Various	0	90	1-4Q	206	1-4Q	161	1-4Q	Continue	Continue	Continue
c . Logistics Planning Spt	C/CPFF	CACI Inc-Federal, Arlington, VA	0	306	2Q	636	2Q	569	2Q	Continue	Continue	Continue
d . Engineering & Technical Spt	MIPR	Various	0	110	1-4Q	233	1-4Q	183	1-4Q	Continue	Continue	Continue
e . Engineering & Tech Spt	C/CPFF	Validity/Titan, Largo, MD	0	315	2Q	550	2Q	430	2Q	Continue	Continue	Continue
Subtotal:			0	1328		2095		1708		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
193

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	640	2Q	498	2Q	Continue	Continue	Continue
b . PM Testing Spt	MIPR	Various	0	491	1-4Q	600	1-4Q	471	1-4Q	Continue	Continue	Continue
c . MC4/TMIP Integration and Testing	C/CPFF	JHU Applied Physics Lab, Laurel, MD	0	417	3Q	650	3Q	510	3Q	Continue	Continue	Continue
Subtotal:			0	1366		1890		1479		Continue	Continue	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 Operations	In House	PM, MD	0	508	1-4Q	665	1-4Q	520	1-4Q	0	1693	0
Subtotal:			0	508		665		520		0	1693	0

Remarks: Program Management Operations includes direct pay of PMO government employees, TDY, training, supplies, etc.

Project Total Cost:			0	3202		4650		3707		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0605013A - Information Technology Development				PROJECT 196	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
196 CHIEF INFORMATION OFFICE (CIO)	3760	2054	1809	5336	10801	12475	12760	0	48995

A. Mission Description and Budget Item Justification: Chief Information Office (CIO) (formerly HTI) establishes interoperability, standardization and integration across PEO 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. CIO sets the common framework for Program Executive Office level guidance and support in the Army's Installation Information Infrastructure and Architecture.

FY 2001 Accomplishments:

- 3332 Provided engineering/technical support and information assurance to support PEO programs.
 - 428 CIO Operations
- Total 3760

FY 2002 Planned Program

- 1614 Continue engineering/technical support and information assurance to support PEO programs.
 - 440 CIO Operations
- Total 2054

FY 2003 Planned Program

- 1362 Continue engineering/technical support and information assurance to support PEO programs.
 - 447 CIO Operations
- Total 1809

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
196

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

C. Acquisition Strategy: This funding line supports interoperability, standardization, and integration across PEO systems by capitalizing on a common approach to software development through introduction of new technologies and methodologies.

<u>D. Schedule Profile</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	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	2612	2Q	874	2Q	598	2Q	Continue	Continue	Continue
b . Technical Support	C/FP	FC Business, Falls Church, VA	0	720	1Q	66	1Q	0		Continue	Continue	Continue
c . Technical Support	C/TM	Titan Sys Corp, Billerida, MA	0	0		674	1Q	764	1Q	Continue	Continue	Continue
Subtotal:			0	3332		1614		1362		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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
			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
a . CIO Operations	In House	CIO, VA	0	428	1-4Q	440	1-4Q	447	1-4Q	Continue	Continue	Continue
Subtotal:			0	428		440		447		Continue	Continue	Continue

Project Total Cost:			0	3760		2054		1809		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0605013A - Information Technology Development				PROJECT 252	
COST (In Thousands)	FY 2001 Actual	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	5080	5493	5838	5846	6050	6194	6331	0	40832

A. Mission Description and Budget Item Justification: This line funds the Tactical Management Information Systems Project Office that provides acquisition support to all PEO managed Combat Service Support programs to include hardware acquisition, fielding, logistics, and contract support. Funding supports civilian pay for 34 civilians, transportation, communications, contract and matrix support for logistics, training, contract administration, and ordering/tracking. Centralization of these functions assures that critical deployment and logistics related tasks are accomplished in a consistent manner for all PEO managed CSS programs.

FY 2001 Accomplishments:

- 3228 PO operations.
 - 1852 Provided contract and matrix support.
- Total 5080

FY 2002 Planned Program

- 4349 Continue PO operations.
 - 1144 Continue contract and matrix support.
- Total 5493

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0605013A - Information Technology Development

252

FY 2003 Planned Program

- 4281 Continue PO operations.
- 1557 Continue contract and matrix support.

Total 5838

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.

D. Schedule Profile

	<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	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0605013A - Information Technology Development	PROJECT 252
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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
			0	0		0		0		0	0	0
Subtotal:												

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	Titan Corp, Billerida, MA	0	1409	2Q	1095	2Q	1302	2Q	Continue	Continue	Continue
b . Engineering/Logistics Matrix Support	MIPR	Various	0	443	1Q	49	1Q	255	1Q	Continue	Continue	Continue
Subtotal:			0	1852		1144		1557		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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
			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
a . Project Office Operations	In House	PO, VA	0	3228	1-4Q	4349	1-4Q	4281	1-4Q	Continue	Continue	Continue
Subtotal:			0	3228		4349		4281		Continue	Continue	Continue

Project Total Cost:			0	5080		5493		5838		Continue	Continue	Continue
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0605013A - Information Technology Development				PROJECT 299	
COST (In Thousands)	FY 2001 Actual	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)	44065	47965	2653	2220	4275	4342	4405	0	109925

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 independent automated information systems architecture. JCALS will automate 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.

FY 2001 Accomplishments:

- 3771 Government Project Management
- 5122 Prime Contractor Project Management
- 18235 Engineering and Technical Services (GOTS to COTS Convert, Regionalization, SWP 2.6.0, SWP 2.6.1, SWP 3.1, SWP 3.3)
- 8610 Testing and System/Security Engineering (DT/OT for 2.6.0 and 2.6.1, SQT and OTRR2 for SWP 3.1)
- 8327 Developed Software Enhancements (SWP 2.6.0, SWP 2.6.1, SWP 3.1, SWP 3.3 (started))

Total 44065

FY 2002 Planned Program

- 3817 Government Project Management
- 5006 Prime Contractor Project Management
- 16792 Engineering and Technical Services for SWP 3.1 and SWP 3.3
- 10348 Testing and System/Security Engineering for SWP 3.1 and SWP 3.3

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)**February 2002**

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0605013A - Information Technology Development

PROJECT

299**FY 2002 Planned Program (Continued)**

- 12002 Develop Software Enhancements for SWP 3.1 and SWP 3.3

Total 47965

FY 2003 Planned Program

- 2653 Testing and Evaluation for full JTM capability

Total 2653

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
299

<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA JCALS SSN - WA1000	64908	24774	2406	2472	42611	60985	62736	Continuing	Continuing
OMA APE - 432612/432672	16741	29309	32313	30702	32244	32194	32332	Continuing	Continuing

C. Acquisition Strategy: PM JCALS will incrementally develop, test, and field three software packages (SWP) and implement user desired changes or enhancements through a system improvement process. SWP1 and SWP2 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, SWP3.1 and SWP3.3. Following each increment, tests will be conducted prior to fielding. Full Milestone III will be achieved following completion of SWP3.3. By using this approach, critical functional requirements will be satisfied incrementally prior to a final Milestone III decision and will expedite shutdown of legacy systems and cut-over of supported business processes to JCALS.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
IPR/Fielding Decision - SWP2 to Air Force							
JCALs Milestone III- SWP3.1		2Q					
SWP3 .1 Fielding		2-4Q					
JCALs Milestone III SWP3.3			1Q				
System Fielding			1Q				
Maintenance			2Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
299

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	8327	2-4Q	12002	2Q	0		0	20329	0
Subtotal:			0	8327		12002		0		0	20329	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 Project Management	C/CPAF	CSC, Marlton, NJ	0	5122	1Q	5006	1Q	0		0	10128	0
b . Engineering & Technical Services	C/Time & Materials	Titan Corp, Shrewsbury, NJ	0	5889	1-4Q	5307	1Q	0		0	11196	0
c . Engineering & Technical Services	C/CPAF	CSC, Marlton, NJ	0	12346	1-4Q	11485	1-4Q	0		0	23831	0
Subtotal:			0	23357		21798		0		0	45155	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	Artic Slope Regional Corp, NM	0	4033	1Q	4905	1Q	1974	1Q	0	10912	0
b . Testing and Implementation	C/Time & Materials	Merdan Group, Inc, San Diego, CA	0	735	1Q	1149	1Q	353	1Q	0	2237	0
c . Testing and Implementation	C/Time & Materials	TELOS Corp, Ashburn, VA	0	600	2Q	1595	2Q	0		0	2195	0
d . Testing and Implementation	C/Time & Materials	Averstar, Burlington, MA	0	526	1Q	1152	1Q	326	1Q	0	2004	0
e . Govt (PM) Testing Efforts	MIPR	Various	0	2716	1-4Q	1547	1-4Q	0		0	4263	0
Subtotal:			0	8610		10348		2653		0	21611	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0605013A - Information Technology Development

299

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 Mgmt Operations	In House	PM, VA	0	3771	1-4Q	3817	1-4Q	0		0	7588	0
Subtotal:			0	3771		3817		0		0	7588	0

Remarks: Program Management Operations includes direct pay of PMO government employees, TDY, training, supplies, etc.

Project Total Cost:			0	44065		47965		2653		0	94683	0
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0605013A - Information Technology Development						PROJECT 316		
COST (In Thousands)		FY 2001 Actual	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	2289	4395	2782	3864	3907	4039	4134	0	25410

A. Mission Description and Budget Item Justification: The STAMIS Tactical Computers (STACOMP) line provides acquisition, logistics, and integration support to numerous tactical logistics programs (i.e.; GCSS-Army, JCALS, etc) through in-house, matrix and contract support. This support includes managing the PEO warranty program for hardware and software products; developing and managing the PEO Integrated Logistics System (SS) program for all systems and serving as the policy advisor on related matters; maintaining liaison with the HQDA SS Steering Committee and other members of the Acquisition Logistics community across the Army and DOD. Support also includes managing contract negotiations and legal reviews; software/hardware evaluation testing in support of the STAMIS Computer Contract II (SCC II); and contractor customer support for 24 hour hotline, technical upgrades, order processing/tracking reports, and World Wide Web (WWW) site. SCC II is an Indefinite Delivery/Indefinite Quantity (IDIQ) contractual vehicle to acquire hardware components in a standard configuration.

FY 2001 Accomplishments:

- 273 Project Office Operations
- 713 Provided sustained support in the areas of Integrated Logistics Support maintenance, configuration management, and test and evaluation.
- 1303 Provided engineering and acquisition of 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 Delivery/Indefinite Quantity (IDIQ) microcomputer contracts are used for this purpose.

Total 2289

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

February 2002

BUDGET ACTIVITY

5 - Engineering and manufacturing development

PE NUMBER AND TITLE

0605013A - Information Technology Development

PROJECT

316

FY 2002 Planned Program

- 284 Project Office Operations
- 1042 Continue providing sustained support in the areas of Integrated Logistics Support maintenance, configuration management, and test and evaluation.
- 3069 Continue engineering and 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 used for this purpose.

Total 4395

FY 2003 Planned Program

- 291 Project Office Operations
- 684 Continue providing sustained support in the areas of Integrated Logistics Support maintenance, configuration management, and test and evaluation.
- 1807 Continue engineering and 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 used for this purpose.

Total 2782

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

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
316

<u>B. Other Program Funding Summary</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>
W00800, STACOMP	1804	3531	3323	3538	3803	3917	4000	Continuing	Continuing

C. Acquisition Strategy: STACOMP supports acquisition and deployment of PEO logistics personnel systems.

<u>D. Schedule Profile</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>
Acquisition Support	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Test & Evaluation	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

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	1151	1Q	2804	1Q	1531	2Q	Continue	Continue	Continue
b . Logistics/Contract Support	MIPR	CECOM, Fort Monmouth, NJ	0	388	1-4Q	653	1-4Q	420	1-4Q	Continue	Continue	Continue
c . SCC II Support	C/FP	GTSI, Chantilly, VA	0	222	1Q	389	1Q	264	1Q	Continue	Continue	Continue
d . Executive System SW Development	MIPR	ESSD, Fort Belvoir, VA	0	255	1-4Q	265	1-4Q	276	1-4Q	Continue	Continue	Continue
Subtotal:			0	2016		4111		2491		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - Engineering and manufacturing development

0605013A - Information Technology Development

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
			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
a . Project Office Operations	In House	PM, NJ	0	273	1-4Q	284	1-4Q	291	1-4Q	Continue	Continue	Continue
Subtotal:			0	273		284		291		Continue	Continue	Continue

Project Total Cost:			0	2289		4395		2782		Continue	Continue	Continue
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- * Commander, US Army Aviation and Troop Command, ATTN: AMSAT-D-C, 4300 Goodfellow Blvd, St. Louis, MO 63120-1798
- * Program Manager, Instrumentation, Targets and Threat Simulators, ATTN: AMCPM-ITTS, 12350 Research Parkway, Orlando, FL 32826-3276
- * Program Manager, Tank Main Armament Systems, ATTN: AMCPM-TMD PMD, Picatinny Arsenal, NJ 07805-5000
- * Program Executive Officer, Missile Defense, ATTN: SFAE-MD-HSV-R, Building 5250, Redstone Arsenal, Alabama 35898-5750
- * Program Executive Officer, Field Artillery Systems, ATTN: SFAE-FAS, Building 171, Picatinny Arsenal, Picatinny, NJ

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