TOC

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

DESCRIPTIVE SUMMARIES OF THE

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

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

VOLUME III

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

VOLUME II
Budget Activities 4 and 5

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

Return to Main TOC

Unit Set Fielding

Notification

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

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

Unit Set Fielding Definition

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

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

FY 2000 Footnote

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

FY 2002/2003 RDT&E, ARMY
PROGRAM ELEMENT DESCRIPTIVE SUMMARIES

INTRODUCTION AND EXPLANATION OF CONTENTS

1. General. The purpose of this document is to provide summary information concerning the Army Research, Development, Test and Evaluation, Army program. The Descriptive Summaries are comprised of R-2 (Army RDT&E Budget Item Justification – Program Element level), R-2A (Army RDT&E Budget Item Justification – project level) and R-3 (Army RDT&E Cost Analysis) Exhibits, which provide narrative information on all RDT&E program elements and projects for the FY 2000, 2001, 2002 and 2003 time period.

2. Relationship of the FY 2002/2003 Budget Submission to the FY 2001 Budget Approved to Congress. This paragraph provides a list of program elements restructured, transitioned, or established to provide specific program identification.

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

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

B. FY 2002/2003 Developmental Transitions.

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

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

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

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

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

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

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

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

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

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

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

Exhibit R-1

Summary

02-Jul-2001

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

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02-Jul-2001

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

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

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

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

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

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

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02-Jul-2001

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

Unit Set Fielding

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1	DOD Compt, Management Improvement, Pentagon, Room 1A658, Washington, DC 20301-1100
1	DOD(C)(CFO), Pentagon, Room 1B728, Washington, DC 20301-1100
1	USD (Policy), Pentagon, Room 4B926, Washington, DC 20301-2100
1	USD(A&T), Mailroom, Pentagon, Room 3D139, Washington, DC 20310
1	OSD, ATTN: DOT&E, Pentagon, Room 3E318, Washington, DC 20301
1	ASD(C3I), Pentagon, Room 3E209, Washington, DC 20301
1	ASD(ISA), Pentagon, Room 4B938, Washington, DC 20301
1	ASD(LA), Pentagon, Room 3D918, Washington, DC 20301
1	USD(P&R), Room 3C980, Washington, DC 20301-4000
1	ASD(RA), Pentagon, Room 2D528, Washington, DC 20301
1	ASD (PA&E), Pentagon, Room 2D278, Washington, DC 20301
1	ASD(PA), Pentagon, Room 2D278, Washington, DC 20301
1	JCS(J-8), Pentagon, Room 1E963, Washington, DC 20301
*	HQDA, (SAUS-OR), Pentagon, Room 2E600, Washington, DC 20310
*	HQDA (SAILE), Pentagon, Room 2E614, Washington, DC 20310
1	HQDA (SAFM-BUI), Pentagon, Room 3C652, Washington, DC 20310-0109
12	HQDA (SAFM-BUI-A), Suite 11500, 2511 South Jefferson Davis Highway, Arlington, VA 22202-3925

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*	HQDA (SARD-DEP), Pentagon, Room 2E673, Washington, DC 20310
1	HQDA (SARD-TS), Suite 9000, 2511 South Jefferson Davis Highway, Arlington, VA 22202
*	HQDA (SAFM-CAZ-A), 5611 Columbia Pike, Falls Church, VA 22041-5050
*	HQDA (SFIS-API), Hoffman 1, Room 1012, Alexandria, VA 22331-0302
*	HQDA (DACS-DPD), Pentagon, Room 3C738, Washington, DC 20310
*	HQDA (DACS-DPA), Pentagon, Room 1C460, Washington, DC 20310
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*	HQDA (DASG-ZA), 5111 Leesburg Pike , Room 638, Falls Church, VA 22041-3258
*	HQDA (DASG-RMZ), 5111 Leesburg Pike, Room 554, Falls Church, VA 22041-3258
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*	HQDA (DAIM) Pentagon, Room 1E665, Washington, DC 20310
*	HQDA (SAPA), Pentagon, Room 2E641, Washington, DC 20310
*	HQDA (CSSD-RM-W), P.O. Box 15280, Arlington, VA 22215-0150
*	HQDA (SAAG-PRP), Room 1309, 3101 Park Center Drive, Alexandria, VA 22302-1596
*	HQDA (DAMH-ZB), Pulaski Bldg, Room 4229, 20 Massachusetts Avenue, Washington, DC 20314
*	US Army Cost And Economic Analysis Center, ATTN: SFFM-CA-PI, 5611 Columbia Pike, Falls Church, VA 22041-5050
*	BMDO/RM, Pentagon, Room 1E1037, Washington, DC 20310
*	HQDA, (JDRS-PBD), Pentagon, Room 1E610, Washington, DC 20310
*	HQ, PACOM, R&D Requirements (J531), BOX 15, USPACOM Staff, Camp H.M. Smith, HI, 96861
*	Commander, US Army Intelligence and Security Command, ATTN: IARM-PB, Fort Belvoir, VA 22060-5370
*	Commander, US Army Nuclear and Chemical Agency, ATTN: MONA-OPS, Bldg 2073, Backlick Road, Springfield, VA 22150
*	Commander, US Army Medical R&D Command, ATTN: SGRD-RMC, Fort Detrick, Frederick, MD 21701-5012
*	Commander, US Army Medical R&D Command, ATTN: SGRD-PR, Fort Detrick, Frederick, MD 21701-5012

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*	CDR, Army Aviation Ctr & Ft. Rucker, ATTN: ATZS-CDI, Ft. Rucker, AL 36362-5000
*	CDR, Army Intelligence Ctr and FT. Huachucha, ATTN: ATZS-CDI-I, ATZS-CDT, Ft. Huachucha, AZ 85613-7000
*	CMDT, U.S. Army Signal Ctr, ATTN: ATZH-CDM, ATZH-BLT, Ft. Gordan, GA 30905-5000
*	Force Design Directorate, ATTN: ATCD-F, 415 Sherman Ave., Ft. Leavenworth, KS 66027-5000
*	CDR, USACHCS, ATTN: ATSC-CD, Ft. Monmouth, NJ 07703-5612
*	CDR, U.S. Army Medical Center & School, ATTN: HSMC-FCM, Ft. Sam Houston, TX 78234
*	CMDT, U.S. Army Air Defense Artillery School, ATTN; ATSA-CDM, Ft. Bliss , TX 79916
*	CMDT, U.S. Army Infantry School, ATTN: ATSH-IWC, ATSH-MLS, Ft. Benning, GA 31905-5400
*	CMDT, U.S. Army Armor School, ATTN: ATZK-CD-ML, ATZK-MW, Ft. Knox, KY 40121-5200
*	CMDT, U.S. Army Engineer School, ATTN: ATSE-CD-M, Ft. Leonard Wood, MO 65473-5000
*	CMDT, U.S. Army Chemical School, ATTN: ATZN-CM-CS, Ft. McClellan, AL 36205-5020
*	CMDT, U.S. Army Military Police School, ATTN: ATZN-MP-CM, Ft. McClellan, AL 36205-5020
*	Commander, US Army Research Institute for the Behavioral and Social Sciences, ATTN: PERI-MB, 5001 Eisenhower Avenue, Alexandria, VA 22333-5600
*	Commander, US Army Operational Test and Evaluation Command, ATTN: CSTE-RMZ, Park Center IV, 4501 Ford Avenue, Alexandria, VA 22302-1458
*	Commander, US Army Materiel Command, ATTN: AMCRD-AB, 5001 Eisenhower Avenue, Alexandria, VA 22333-0001
*	Commander, US Army Materiel Command, ATTN: AMCAE-P, 5001 Eisenhower Avenue, Alexandria, VA 22333
*	Commander, US Army Materiel Command, ATTN: AMCAQ-B-TILO, 5001 Eisenhower Avenue, Alexandria, VA 22333

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*	Commander, US Army Missile Command, ATTN: AMSMI-AS (Library), Bldg 5250, RMC-147, Redstone Arsenal, AL 35898-5000
*	Commander, US Army Test and Evaluation Command, ATTN: AMSTE-RM, Aberdeen Proving Ground, MD 21005-5055
*	Commander, US Army CECOM, Technical Industrial Liaison Office, ATTN: AMSEL-AC-SP-BL (Sandra Vermont), Ft. Monmouth, NJ 07703-5008
*	Commander, US Army Tank-Automotive Command, ATTN: AMSTA-CG, Warren, MI 48397-5000
*	Commander, US Army Laboratory Command, ATTN: AMSLC-CG, Adelphi, MD 20783-1145
*	Commander, US Army Armament Research, Development and Engineering Center, ATTN: SMCAR-CO, Dover, NJ 07806-5000
*	Commander, Environmental Center, ATTN: SFIM-AEC-RM, Edgewood Area, Aberdeen Proving Ground, MD 21010-5055
*	Commander, US Army Materiel Systems Analysis Activity, ATTN: AMXSY-PB, Aberdeen Proving Ground, MD 21005-5071
*	Commander, US Army Chemical, Biological and Defense Command, ATTN: AMSCB-RR, Aberdeen Proving Ground, MD 21010-5423
*	Commander, US Army Chemical, Biological and Defense Command, ATTN: SCBRD-ASA, Aberdeen Proving Ground, MD 21010-5423
*	Commander, US Army Chemical, Biological and Defense Command, ATTN: AMSCB-EO, Aberdeen Proving Ground, MD 21010-5423
*	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
*	Program Manager, Tank Main Armament Systems, ATTN: AMCPM-TMD PMD, Picatinny Arsenal NJ 07806-5000
*	Program Executive Officer, Missile Defense, ATTN: SFAE-MD-DP-P, Building 5250, Redstone Arsenal, Alabama 35898-5750
*	Program Executive Officer, Field Artillery Systems, ATTN: SFAE-FAS, Building 171, Picatinny Arsenal, Picatinny, NJ 07806-5000
*	Program Executive Officer, Armored Systems Modernization, ATTN: SFAE-HFM-P, Warren, MI 48397-5000
*	Program Executive Officer, Aviation, ATTN: SFAE-AV, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798

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*	Program Executive Officer, Communication Systems, ATTN: SFAE-COM, Ft. Monmouth, NJ 07703-5000
*	Program Executive Officer, Tactical Missiles, ATTN: SFAE-MSL, Redstone Arsenal, AL 35898-8000
*	Program Executive Officer, Intelligence and Electronic Warfare, ATTN: SFAE-IEW-BM, Ft. Monmouth, NJ 07703
*	Commander, US Army Space and Strategic Defense Command, ATTN: CSSD-RM-BP, P.O. Box 1500, Huntsville, AL 35807-3801
*	Commander, US Army Corps of Engineers, ATTN: CERD-L, Washington, DC 20314
*	Commander, US Army Force Integration Support Agency, ATTN: MOFI-TRED-O, Building 2588, Fort Belvoir, VA 22060-5587
*	Commander, 902d MI Group, ATTN: IAGPA-OPOP, Ft. Meade, MD 20755-5910
*	Commander, HQ US Army Missile & Space Intelligence Center, ATTN: AIAMS-YCC, Redstone Arsenal, AL 35898-5000
*	Commander, US Army Countermeasures/Counter Counter Measures Center, ATTN: AMX-CM-RF, 2800 Powder Mill Rd, Adelpi, MD 20783
*	Commander, US Army Belvoir Research, Development & Engineering Center, ATTN: STRBE-Z, Ft. Belvoir, VA 22060-5606
*	Commander, US Army Research Office, ATTN: SLCRO-AO (Security Officer), P.O. Box 12211, Research Triangle Park, NC 27709
*	Inspector General, ATTN: A&IM/FMD, 400 Army-Navy Drive Arlington, VA 22202-2884
*	HQ USAF/FMBMC, Pentagon, Room 5C129, Washington, DC 20330-5012
*	HQ US Marine Corps, Deputy Chief of Staff for RD&S, Code (MC-RDP-30), Washington, DC 20380
*	Commandant, US Army War College, ATTN: Library, Carlisle Barracks, PA 17013-5050
*	Defense Advanced Research Projects Agency, ATTN: Comptroller, 3701 North Fairfax Drive, Arlington, VA 22203-1714
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*	Defense Technical Information Center (DTIC), ATTN: OCC, Ft. Belvoir Headquarters Complex (FBHC), Suite 0928, 8725 John J. Kingman Road, Ft. Belvoir, VA 22060-6220
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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0604256A - Threat Simulator Development**	**976**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
976	ARMY THREAT SIM (ATS)	19239	20808	16011	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This program supports the design, development, integration and fielding of realistic mobile threat simulators and realistic threat simulation products utilized in Army training, developmental tests and operational tests. Army Threat Simulator and Threat Simulation products are utilized to populate test battlefields for US Army Test and Evaluation Command (ATEC)-conducted operational tests, and to support Program Executive Officer (PEO) required user testing in System Integration Laboratories and hardware/simulation in-the-loop facilities. Army threat simulator and threat simulation products developed or fielded under this program support Army wide requirements defined in the AMC chartered Threat Simulator and Simulation Program Plan (TSPP) and identified as nonsystem specific threat product requirements. Each capability is pursued in concert and coordination with existing Army and tri-service capabilities to eliminate duplication of products and services while providing the proper mix of resources needed to support Army testing and training. These battlefield simulators represent systems (e.g. missile systems; command, control and communications systems; electronic warfare systems; helicopters; etc.) that are used to portray a realistic threat environment during testing of US weapon systems. Simulator development is responsive to Office of the Secretary of Defense and General Accounting Office concerns that the Army conduct operational testing in a realistic threat environment. While this project originally funded simulators representing Soviet equipment, the changing world order has expanded the scope of this program to address Rest Of World (ROW) threats. Actual threat equipment is acquired when appropriate in lieu of development. Total package fielding will still be required (i.e., instrumentation, operations and maintenance, manuals, new equipment training, etc.). Threat simulator development is accomplished under the auspices of the Project Manager for Instrumentation, Targets, and Threat Simulators (PM ITTS) and the Director, Operational Test and Evaluation, Threat Simulator Investment Working Group. These affiliations minimize any development duplication within the U.S. Army or Department of Defense (DoD). FY 2002 program continues the development of regimental elements of XMC3S for the Battle Management Network; continues the development of the XMAPS threat system; develops product improvements for the XM11S threat system; develops the Threat IR system; develops the Information Operations/Information Warfare (IO/IW) Threat system; completes instrumentation and fielding of the XM70A threat systems; and completes the development and instrumentation of the Threat Mines Simulator. This project supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 1735 Initiated development of the Global Positioning System (XMGPS) receiver jammer.
- 3336 Continued development of Distributed Electronic Warfare Simulation (XMDEWS) Advanced Land Combat System.

FY 2000 Accomplishments (Continued)

- 3546 Initiated instrumentation and fielding of XM70A threat systems.
- 2478 Continued development of regimental elements of XMC3S for the Battle Management Network.
- 482 Completed initial product improvement design for XM11S threat system.
- 257 Completed initial design for active protective system (XMAPS) threat system.
- 1205 Completed development of Advanced Distributed Electronic Warfare Simulation (XMADEWS).
- 1200 Completed initial design of Threat Mine Simulator.
- 3000 Completed initial design of Virtual Threat Simulator.
- 2000 Completed initial design of Threat EO/IR Simulator.

Total 19239

FY 2001 Planned Program

- 1694 Finalize development and fielding of XMGPS receiver jammer.
- 1828 Complete development of XMDEWS Advanced Land Combat System.
- 2869 Continue instrumentation and fielding of XM70A threat systems.
- 1296 Continue development of regimental elements of XMC3S for the Battle Management Network.
- 2806 Continue detailed design and development of XMAPS threat system.
- 2200 Develop Next Generation Anti-Tank Guided Missile Program (XMATGM).
- 2500 Develop Threat Mine Simulator.
- 2100 Develop Threat Information Operations Simulator.
- 3000 Develop Millimeter Wave Jammer threat simulator.
- 515 Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR).

Total 20808

FY 2002 Planned Program

- 1192 Continue development of regimental elements of XMC3S for the Battle Management Network.
- 2115 Continue development of XMAPS threat system.
- 4187 Develop product improvements for XM11S threat system.
- 2385 Complete instrumentation and fielding of XM70A threat systems.
- 1203 Develop Threat IR system.
- 2544 Complete development and instrument Threat Mines Simulator.
- 2385 Develop Information Operations/Information Warfare (IO/IW) Threat system.

Total 16011

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	19683	13901	15929	0
Appropriated Value	19880	21001	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-444	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0	0
d. Below Threshold Reprogramming	-68	0	0	0
e. Rescissions	-129	-193	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	82	0
Current Budget Submit (FY 2002/2003 PB)	19239	20808	16011	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE
6 - MANAGEMENT SUPPORT	**0604258A - Target Systems Development**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	12950	15252	25212	0	0	0	0	0	0	0
238 AERIAL TARGETS	6250	2889	6365	0	0	0	0	0	0	0
459 GROUND TARGETS	6700	12363	18847	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

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

The FY 2002 funding continues the management and sustainment of the Army Rotary Wing Target program and the MQM-107 program, completes the redesign and testing of the upgraded Target Tracking and Control System, completes the development and testing of the Tandem Tow Target, resumes development of aerial virtual targets and develops additional ground virtual targets, initiates a six-year Integrated Avionics Program, continues the Mobile Ground Target Primary Operating Center function, completes fabrication and deployment of the Next Mobile Ground Target Surrogate, completes deployment of the BMP3-S, begins development of a Russian Transporter Erector Launcher Surrogate, and acquires up to seven T80U's per OSD guidance.

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

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

June 2001

BUDGET ACTIVITY
6 - MANAGEMENT SUPPORT

PE NUMBER AND TITLE
0604258A - Target Systems Development

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	13298	13346	15101	0
Appropriated Value	13397	10346	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-348	0	0	
c. Omnibus or Other Above Threshold Reductions	-54	0	0	
d. Above Threshold Reprogramming	0	5000	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	-45	-94	0	
Adjustments to Budget Years Since FY2001 PB	0	0	10111	
Current Budget Submit (FY 2002/2003 PB)	12950	15252	25212	0

Change Summary Explanation: Funding - FY 2001/2002 funding increase in Ground Targets (D459) to procure Ukrainian Tanks/Armored Vehicles for the purpose of replicating Threat Target Sets as part of the Department of the Army's Testing Program (FY 2001 +5000 and FY 2002 +10000).

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0604258A - Target Systems Development**	**238**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
238 AERIAL TARGETS	6250	2889	6365	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Supports Army Transformation by providing for development, acquisition, operation, storage, update, and maintenance of realistic surrogate or acquired threat high-performance, multi-spectral aerial targets and development of virtual target computer models of aerial targets. These computer models are compatible with Distributed Interactive Simulation (DIS) and will be Higher Level Architecture (HLA) compliant. Modern weapons require test, evaluation, and training using threat representative aerial targets to assess their effectiveness on the battlefield. This program encompasses a family of rotary and fixed-wing targets, full-scale, miniature and subscale targets, tactical ballistic targets, virtual targets, ancillary devices, and remote control systems. These products are required to adequately stress weapon systems undergoing test and evaluation. To stress systems under test, aerial targets must have flight characteristics, signatures, and other performance factors, which emulate the modern threat. This tasking includes long-range planning to determine future target needs and development of coordinated requirement documents; the management of target research, development, test and evaluation process; execution of the validation process to ensure that surrogate targets adequately represent the threat; development and acquisition of surrogate and acquired targets; and continuing maintenance, storage, and development/enhancements/update via engineering services of the developed and acquired threat targets to ensure availability for the Test and Evaluation (T&E) customer. The US Army is the Reliance lead for rotary wing targets and the Tri-Service lead for procurement and enhancement of the MQM-107 Fixed Wing Target.

The FY02 funding continues the management and sustainment of the Army Rotary Wing Target program and the MQM-107 program, completes the redesign and testing of the upgraded Target Tracking and Control System, completes the development and testing of the Tandem Tow Target, resumes development of aerial virtual targets, and initiates a six-year Integrated Avionics program.

FY 2000 Accomplishments

- 1161 Managed the Army Rotary Wing target program (e.g., QAH-1, QUH-1, QH-50, etc.), including updates for obsolescence, maintenance, and safety to support T&E programs such as Stinger and Medium Extended Air Defense System (MEADS). Continued maintenance and storage of Hokum-X Rotary Wing Target (Canadian Cooperative Program) and completed integration of UDS into the Hokum-X target.
- 1457 Continued enhancement of the MQM-107 Target system, including updating obsolete parts to maintain producibility and supportability, manage fabrication and improve airframe maneuverability to meet the aerodynamic performance and payload capability needed by the Army and Tri-Service customers.
- 183 Continued management of Universal Drone System (UDS) and update of system for obsolescence, maintenance and safety.

FY 2000 Accomplishments (Continued)

- 1939 Continued redesign and began testing of redesigned Target Tracking and Control System (TTCS). Continued to support current TTCS to maintain operations until upgraded systems are available. Began integration of Common Drone Control Avionics into aerial targets (integrates Targets Management Initiative developed Common Digital Architecture, which will improve performance and reduce operating costs). Delivered two Updated TTCS test articles.
- 985 Continued development, enhancement, maintenance and storage for all RDT&E aerial targets, towed targets, and ancillary devices. Includes management of Targets Management Initiative to develop enhanced infrared augmentation for the Remotely Piloted Vehicle Target for Stinger. Includes development of Cruise Missile Towed Target for Patriot (12 test articles).
- 288 Continued development of aerial virtual targets (e.g., UH-60, BQM-34, EXDRONE) to support test and evaluation. Target models will be utilized in Virtual Proving Ground and other weapon systems T&E and M&S activities.
- 237 Suspended (due to change in customers' programs) design and development of Unmanned Aerial Vehicle Surrogate (UAV-S) Target to support Stinger (FY01-02 baselining and FY04-06 T&E) and Medium Extended Air Defense System (MEADS) T&E.

Total 6250

FY 2001 Planned Program

- 367 Continue management and sustainment of Army Rotary Wing target program (e.g., QAH-1, QUH-1, QH-50, and Hokum-X with drone kits), including updates for obsolescence, maintenance, and safety to support T&E programs such as Stinger and Medium Extended Air Defense System (MEADS).
- 749 Provides RDT&E portion of funds needed to update aging MQM-107 equipment to overcome obsolescence for spare and repair parts, and to maintain equipment and documentation for safe operations supporting T&E programs such as Patriot, Stinger, JLENS, MEADS, HUMRAM, etc. Army and Tri-Service customers.
- 543 Continue redesign and testing of the Target Tracking and Control System (TTCS). Develop and test system test set compliance with upgraded TTCS design. Continue to support current TTCS to maintain operations until all TTCSs are upgraded. Continue management of the Targets Management Initiative, which develops and integrates a set of Common Digital Architecture control equipment into aerial targets, improving performance and reducing operating costs.
- 1151 Continue development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets and ancillary devices. Includes resolution of Lance Missile Target performance shortfalls and re-certification for use; development of Tandem Tow Target under cooperative initiative with British, Australian, and Canadian Governments (The Technical Cooperative Program). Delivers two test articles.
- 79 Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR).

Total 2889

FY 2002 Planned Program

•	480	Continue management and sustainment of Army Rotary Wing Target program (e.g., QAH-1, QUH-1, QH-50, and HOKUM-X with drone kits), including updates for obsolescence, maintenance, and safety to support T&E programs such as Comanche, Stinger and Medium Extended Air Defense System (MEADS).
•	889	Provides RDT&E portion of funds needed to update aging MQM-107 equipment to overcome obsolescence for spare and repair parts, and to maintain equipment and documentation for safe operations supporting T&E programs such as Patriot, Stinger, JLENS, MEADS, HUMRAM, etc. Army and Tri-Service customers.
•	2487	Complete redesign and testing of upgraded TTCS to new design. Integrate and test BQM-34 target control capability into updated TTCS design. Continue to support current TTCS to maintain operations until all TTCSs are upgraded. Continue management of Targets Management Initiative developing and integrating a set of Common Digital Architecture control equipment into aerial targets, improving performance and reducing operating costs.
•	992	Continue development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets and ancillary devices. Includes completion of development and testing of Tandem Tow Target under cooperative initiative with British, Australian, and Canadian Governments (The Technical Cooperative Program). Delivers three test articles.
•	864	Resume development of aerial virtual targets, (e.g., POTA-TOW, QUH-1, 1/5 scale HIND-D, and LANCE) to support test and evaluation. Target models will be utilized in Virtual Proving Ground and other weapon systems (i.e., Comanche, Patriot, Stinger, Hellfire, Longbow Apache) T&E and M&S activities and made available online to over 300 DoD users through the Virtual Targets Center.
•	653	Initiates six-year Integrated Avionics Program which integrates CTEIP Common Digital Architecture into aerial targets controlled by TTCS, improving reliability, maintainability, and target performance while reducing operational cost.
Total	6365	

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0604258A - Target Systems Development**	**459**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
459 GROUND TARGETS	6700	12363	18847	0	0	0	0	0	0	0

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

The FY 2002 funding continues the Mobile Ground Target Primary Operating Center operations, develops additional ground virtual targets, completes fabrication and deployment of the Next Mobile Ground Target Surrogate, completes deployment of the BMP3-S, begins development of a Russian Transporter Erector Launcher Surrogate, and acquires up to seven T80U's per OSD guidance.

FY 2000 Accomplishments

- 1550 Managed and provided oversight for Primary Operating Centers operation, storage, maintenance, and configuration management for the repair of existing ground target assets to include the acquisition of new material and spare parts.
- 1499 Developed additional virtual ground targets (e.g., Straight Flush, Russian BMP-1, 2S-6, etc.) to support test and evaluation. Updated current models to add/improve infrared (IR) characteristics and improved visual representation. Target models were utilized in Virtual Proving Ground and other weapon systems T&E and Modeling & Simulation (M&S) activities and made available on-line through the Virtual Targets Center.
- 1965 Began development of the Next Mobile Ground Target Surrogate Russian Smerch (Multiple Rocket Launcher (MRL)).
- 878 Began development of family of New Generation Army Targetry System (NGATS) programs to include: initiation of Digital Multi-Purpose Range Complex (DMPRC) acquisition (for First Digitized Division, the 4th ID at Fort Hood); prototyping and testing of All Targetry Scoring System (ATSS) to include Doppler Scoring Subsystem; and requirements analysis and program planning for Tank Thermal Target and Evasive Targetry.

FY 2000 Accomplishments (Continued)

- 808 Continued fabrication and began deployment into the operational fleet, of ten (10) Infantry Fighting Vehicle Russian Name BMP3-S Ground Target Surrogates to maintain up-to-date threat representative targets that are required to support Comanche and BAT T&E in the FY 2000 and FY 2002 timeframe.

Total 6700

FY 2001 Planned Program

- 2267 As directed, provide approximately one third of the funding to manage and provide oversight for five (5) Primary Operating Centers operation, storage, maintenance, and configuration management for the repair of greater than 300 Mobile Ground Target vehicles; including acquisition of new material and spare parts.
- 2216 Develop additional virtual ground targets (e.g., Russian Names SA-8, T-55, T-90, BRM Lynx, etc.) to support test and evaluation. Update current models, add/improve Infrared (IR) characteristics and improve visual representation. Target models will be utilized in Virtual Proving Ground and other weapon systems (i.e., Comanche, Patriot, Stinger, Hellfire, Longbow Apache) T&E and Modeling & Simulation (M&S) activities and made available online to over 300 DoD users through the Virtual Targets Center.
- 1942 Complete initial development and begin testing of the Next Mobile Ground Target Surrogate (Russian Smerch Multiple Rocket Launcher) and begin fabrication of units for deployment into the operational fleet to maintain up-to-date threat representative targets to support T&E testing (e.g., Comanche, BAT, etc.). Delivers two (2) test articles.
- 742 Complete fabrication of Infantry Fighting Vehicle Russian Name BMP3-S for the operational fleet and update system configuration to maintain up-to-date threat representative targets that are required to support Comanche and BAT T&E in the FY 2002 timeframe.
- 4984 As directed, acquire up to three T-80 UD main battle tanks from the government of the Ukraine, to be placed in the Mobile Ground Targets vehicles fleet to be used for T&E by programs such as Comanche, BAT P3I, Land/Air Warrior, Apache and others
- 212 Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR).

Total 12363

FY 2002 Planned Program

- 2335 As directed, provide approximately one third of the funding to manage and provide oversight for five (5) Primary Operating Centers operation, storage, maintenance, and configuration management for the repair of greater than 300 Mobile Ground Target vehicles; including acquisition of new material and spare parts.
- 2304 Develop additional virtual ground targets (e.g., Russian Names URAL-375G, BM21 MRL, SA-17, 2S-19, etc.) to support test and evaluation. Update current models, add/improve IR characteristics and improve visual representation. Target models will be utilized in Comanche, Joint Strike Fighter and other weapon systems T&E and M&S activities, and made available on-line to over 300 DoD users through the Virtual Targets Center.
- 1723 Complete fabrication and deployment of the Next Mobile Ground Target Surrogate (Russian Smerch Multiple Rocket Launcher) units for deployment into the operational fleet to maintain up-to-date threat representative targets to support T&E testing (e.g., Comanche, BAT, etc.). Delivers four (4) articles.
- 343 Complete deployment of Infantry Fighting Vehicle Russian Name BMP3-S into the operational fleet and update system configuration to maintain up-to-date threat representative targets that are required to support Comanche and BAT T&E in the FY 2002 timeframe.
- 2069 Begin development of the Russian Transporter Erector Launcher Surrogate to support T&E (e.g., Comanche, BAT, etc.). Delivers three (3) test articles.
- 10073 As directed, acquire up to seven T80UD main battle tanks from the government of the Ukraine, to be placed in the Mobile Ground Targets vehicles fleet to be used for T&E programs such as Comanche, BAT P3I, Land/Air Warrior, Apache, and others.

Total 18847

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

June 2001

BUDGET ACTIVITY
6 - MANAGEMENT SUPPORT

PE NUMBER AND TITLE
0604759A - Major Test & Evaluation Investment

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	38089	43616	49897	0	0	0	0	0	0	0
983 MAJOR T&E INVEST-USAKA	7236	8121	7771	0	0	0	0	0	0	0
984 MAJOR TECH TEST INSTR	26303	29007	33817	0	0	0	0	0	0	0
986 MAJ USER TEST INST	4550	6488	8309	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This program funds development and acquisition of major developmental test instrumentation for the U.S. Army Test and Evaluation Command (ATEC) and Developmental Test Command (DTC) test activities: White Sands Missile Range (WSMR), NM; Yuma Proving Ground, (YPG), AZ; Aberdeen Test Center (ATC), MD; Dugway Proving Ground (DPG), UT; Redstone Technical Test Center (RTTC), AL; Aviation Technical Test Center (ATTC), AL; and for the US Army Kwajalein Atoll (USAKA), which is managed by the U.S. Army Space and Missile Defense Command. Program also funds development and acquisition of Operational Test Command (OTC) major field instrumentation. Requirements for instrumentation are identified through a long range survey of project managers, Research Development and Engineering Centers (RDECs), and Battle Laboratories developing future weapon systems and the test programs that require these systems. Army testing facilities are also surveyed to determine major testing capability shortfalls.

FY 2002 funding will continue development of Kwajalein Missile Range Modernization and Remoting (KMAR), Test Support Network (TSN), Range Digital Transmission System (RDTS), Hardened Subminiature Telemetry and Sensor System (HSTSS), Phase II Objective Mobile Infrared Scene Projector (MIRSP), Mobile Automated Instrumentation Suite (MAIS) Pre-Planned Product Improvement (P3I), completes installation of Automotive Communication Network (ACN) instrumentation, and initiates development of Subsystem Test and Evaluation with Virtual Application (STEWVAC), and Versatile Information Systems Integrated Online (VISION).

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	39095	44019	49594	0
Appropriated Value	39380	44019	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR/STTR	-1006	0	0	
c. Omnibus or Other Above Threshold Reductions	-155	0	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	-130	-403	0	
Adjustments to Budget Years Since FY2001 PB	0	0	303	
Current Budget Submit (FY 2002/2003 PB)	38089	43616	49897	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0604759A - Major Test & Evaluation Investment**	**983**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
983	MAJOR T&E INVEST-USAKA	7236	8121	7771	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project funds the purchase of major Improvement and Modernization (I&M) equipment for the US Army Kwajalein Atoll/Kwajalein Missile Range (USAKA/KMR) in the Marshall Islands. USAKA/KMR is a national test range supporting Army, Ballistic Missile Defense Organization (BMDO), US Air Force, National Aeronautics and Space Administration (NASA), and other customers. Program upgrades radars, telemetry, optics, command/control and other equipment required to maintain USAKA as a national test range. The Kwajalein Missile Range (KMR) Modernization and Remoting (KMAR) project which is a concurrent, range-wide modernization effort to maximize the use of common, standardized commercial off-the-shelf (COTS) technology to replace obsolete components; implement common hardware/software architectures and automation; and "remote" the operation of range sensors and instrumentation to the island of Kwajalein. This effort will upgrade range capabilities that are critical to the success of Theater Missile Defense (TMD) and National Missile Defense (NMD) test missions as well as reduce USAKA/KMR annual operating costs by $18M per year beginning in FY 2003. Army has recouped savings from USAKA PE 0605301A.

FY 2000 Accomplishments

- 7236 Continued KMR Modernization and Remoting (KMAR) - Installed remaining Intermediate Frequency (IF) receiver, digital pulse compression, computer and recording system equipment for ARPA-Lincoln C-Band Observable Radar (ALCOR). ALCOR radar modernization was completed in October 2000. Completed three T3 circuits from Kwajalein to the Kiernan Re-entry Measurement Site (KREMS) radars on Roi-Namur in addition to mission voice circuit upgrades to allow full automation of KREMS radar complex at Roi-Namur as each radar system completes modernization. Relocated Gagan Island 3m antenna to Roi-Namur. Began installation of Millimeter Wave (MMW) modernized radar transmit control, antenna control and radiation monitor interface equipment. Upgraded MMW system shipped to Kwajalein. Completed mission planning workstation and simulation capabilities to allow for automated mission planning. Updated Recording Automatic Digital Optical Tracker (RADOT) optics computers.

Total 7236

FY 2001 Planned Program

•	7879	Continue KMR Modernization and Remoting (KMAR) - Complete installation of IF receiver, computer, digital pulse compression and recording equipment for MMW Radar. After validation and verification, MMW radar modernization will be complete on 1 June 2001. Begin installation of ARPA Long Range Tracking and Instrumentation Radar (ALTAIR) modernization transmit control, antenna control, radiation monitor interface subsystems. Construct the KMR Space Surveillance Center addition to the KMR Mission Control Center and install, verify and validate operation of computer and consoles prior to relocating spacetrack operators from Roi-Namur Island to Kwajalein Island. Install three Telemetry (TM) antennas at Roi TM Site and procure four antennas for Kwajalein and Roi. Install one SuperRADOT servo system and procure four additional servo systems. Complete pre-siting development of ALTAIR KMAR systems; initiate on-site installation. Initiate pre-siting development of Target Resolution and Discrimination Experiment (TRADEX) KMAR systems.
•	242	Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
Total	8121	

FY 2002 Planned Program

•	5171	Continue KMR Modernization and Remoting (KMAR) - Complete installation of IF receiver, computer, digital pulse compression and recording equipment for ALTAIR Radar. After validation and verification, ALTAIR radar modernization will be complete on 1 May 2002. Complete pre-siting development of TRADEX KMAR systems; begin installation of TRADEX transmit control, antenna control, radiation monitor interface subsystems. Complete installation of four TM antenna systems at Kwajalein TM site.
•	2100	Common Range Visualization - Prepare for Systems Integration Test (SIT)/family of systems/live-fire tests by creating ground truth situational awareness facilities in the KMR Mission Control Center.
•	500	Initiate TM recording, processing, and distribution equipment upgrade.
Total	7771	

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0604759A - Major Test & Evaluation Investment**	**984**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
984 MAJOR TECH TEST INSTR	26303	29007	33817	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project develops and acquires major test instrumentation to perform developmental testing of weapon systems at U. S. Army Test and Evaluation Command (ATEC) Developmental Test Command (DTC) activities which include: Yuma Proving Ground (YPG), AZ; Aberdeen Test Center (ATC), MD; Dugway Proving Ground (DPG), UT; White Sands Missile Range (WSMR), NM; Redstone Technical Test Center (RTTC), AL; and Aviation Technical Test Center (ATTC), AL. Projects are designated as a major program based on their visibility, assessed relative technical risk (medium-high), schedule risk, cost (generally greater than $1M/yr or $5M for the total project) and applicability to other mission areas or services. These projects are technically demanding, pushing the state-of-the-art, unique instrumentation assets or suites to meet the technology shortfalls, and generally result from development programs managed by a professional project management team. The Test Support Network (TSN) at WSMR provides complete secure coverage of voice, data and video in a single integrated, transport system. The TSN will provide advanced encryption capabilities and remote control of switching capabilities for test configuration and total network data arrangement control. The Land Combat Instrumentation (LCI) provides for upgrade and expansion for ATC's suite of instrumentation required for performance testing of combat and tactical vehicles, advanced armor, and advanced munitions. The Frequency Surveillance System (FSS) provides remote capabilities to daily operations of radio frequency spectrum surveillance at WSMR in support of all Service and non-DoD agency tests. The Dynamic Infrared Scene Projector (DIRSP) conducts performance testing of night vision sensors and infrared (IR) imaging seekers at RTTC, and will provide the capability to fully simulate and synthesize present and future battlefields with a mix of real and simulated objects. The Hardened Subminiature Telemetry and Sensor System (HSTSS) is developing, miniaturizing, and hardening an instrumentation/telemetry package at YPG that will provide continuous direct measurement of internal functioning and flight data for cannon-launched munitions, smart submunitions, and small missiles/rockets. The Range Digital Transmission System (RDTS) will improve test operations and will reduce test costs allowing for efficient data collection and remote operations at YPG. The Mobile Infrared Scene Projector (MIRSP) project will conduct performance testing of imaging infrared and FLIR sensors while installed on the weapon system under test at ATTC.

FY 2002 funding will continue development of TSN, RDTS, HSTSS, Phase II Objective MIRS, completes installation ACN instrumentation, and initiates development of STEWVAC, and VISION.

FY 2000 Accomplishments

- 13190 Completed WSMR TSN Phase II installation effort to include fiber optic service extension and additional network/sub-network capability. Completed Phase I and achieved IOC.
- 754 Continued installation of Automotive Communication Network (ACN) instrumentation at the Perryman and Churchville test areas of ATC.
- 381 Completed integration and final system acceptance test of FSS equipment at WSMR.
- 735 Completed Dynamic Infrared Scene Projector (DIRSP) system integration and factory acceptance testing at contractor's facility. Completed site acceptance testing at Redstone Technical Test Center (RTTC).
- 6135 Awarded GPS Sensor Contract for HSTSS. Incorporated HSTSS into Tank Extended Range Munition Kinetic Energy (TERM-KE) tactical configuration. Test flights of HSTSS telemetry for MLRS stockpile reliability were successful.
- 2147 RDTS initiated installation plan and system engineering for all outside digital fiber optic cable and inside plant electronics for the YPG West Kofa test ranges supporting telecommunications systems.
- 2961 Completed Phase I pathfinder MIRSP system fabrication, integration and testing at RTTC. Completed Phase I installation and testing at ATC. Initiated requirements definition and concept development for Phase II objective MIRSP.

Total 26303

FY 2001 Planned Program

- 16431 Combine WSMR TSN Phase II/III into single TSN build-out phase for extension of fiber optic service to additional WSMR test sites.
- 933 Continue installation of ACN instrumentation at Perryman and Churchville test areas of ATC.
- 4096 Continue development and acceptance testing of HSTSS components. Continue work in TERM-KE and MLRS integration.
- 5068 Continue installation of digital fiber optic cable to support YPG RDTS Phase I.
- 1388 Continue development and acquisition of Phase II objective MIRSP.
- 185 Final system acceptance test of FSS equipment at WSMR.
- 81 DIRSP system integration and factory acceptance testing at contractor's facility. Finalize site acceptance testing at Redstone Technical Test Center (RTTC).
- 825 Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) Programs.

Total 29007

FY 2002 Planned Program

- 13040 Complete Test Support Network (TSN) build-out for fiber optic cable installation. Continue transmission electronics and system integration and testing efforts.
- 11644 Range Data Transmission System (RDTS): Will complete installation of digital fiber optic cable for the West Kofa test ranges. Initiate installation of digital fiber optic cable for the South Cibola and East Kofa test ranges.
- 4379 Hardened Subminiature Telemetry and Sensor System (HSTSS) component deliveries complete, continue prototype system testing.
- 1085 Complete the installation of ACN Instrumentation at the Perryman and Churchville test areas of ATC.
- 1240 Continue the development and acquisition of Phase II objective MIRSP.
- 1029 Initiate development of the high fidelity and low fidelity simulation/test acceptance chambers for the Subsystem Test and Evaluation With Virtual Applications Capabilities (STEWVAC).
- 1400 Initiate test items to data center and database systems development of Versatile Information Systems Integrated Online (VISION) project at ATC.

Total 33817

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0604759A - Major Test & Evaluation Investment**	**986**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
986 MAJ USER TEST INST	4550	6488	8309	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project supports the development of major field instrumentation for Operational Testing (OT), Force Development Testing and Experimentation (FDTE), and Army Warfighting Experiments (AWE) for the U.S Army Test and Evaluation Command (ATEC) which includes operational test directorates at Fort Hood, TX, Fort Bragg, NC, Fort Sill, OK, Fort Bliss, TX and Fort Huachuca, AZ. Each initiative set forth in this program is directly tied to tactical systems that support each of the five Army Modernization Objectives: Project and Sustain; Protect The Force; Win Information War; Conduct Precision Strikes; and Dominate The Maneuver Battle.

Cornerstone of this effort is the Mobile Automated Instrumentation Suite (MAIS) which provides users a high fidelity, realistic, real-time capability to measure the performance of hardware and personnel under tactical conditions for small and large-scale operations (up to 1,830 players). MAIS is the US Army's only Real Time Casualty Assessment (RTCA) capability and is used to test all current and future U.S. Army weapons and weapon systems in a force-on-force operational environment. This project includes two major thrust areas: MAIS Pre-Planned Product Improvements (P3I) and Instrumentation XXI. Without these capabilities, the Operational Test community will encounter shortcomings in its ability to adequately assess the Interim Brigade Combat Team and Army Transformation developments.

MAIS P3I RDTE develops the instrumentation required, but not funded, under the basic MAIS program. MAIS P3I RDTE develops performance enhancements and technology upgrades to the MAIS Command, Control and Communications (C3) Center, Communications Network, weapons system interfaces, and miniaturization of the vest peripherals, GPS System, and encryption components. These improvements will enable MAIS to measure and record accrued damage, levels of exposure, effects of countermeasures, evasive action, and instrument threat vehicles, while significantly reducing system intrusiveness and increase the safety of current instrumentation for both vehicle and dismounted instrumentation. MAIS P3I provides insertion of enhancements to the RTCA algorithms; simulation of Opposing Force (OPFOR) weapon systems and player units for newly acquired weapon systems; and development of player units for new weapon systems.

These core system enhancements are required as part of the basic program enabling the operational test community to effectively emulate current and future battlefield weapons in a high fidelity environment. Weapon system unique MAIS components are funded by the weapon system program. The Instrumentation XXI thrust area of MAIS develops instrumentation that does not presently exist to monitor, record, stress, and analyze the effects of the digital information battlefield in a realistic operational scenarios.

Instrumentation XXI is required by the operational test community to integrate digital battlefield data collection and analysis tools into the MAIS. These tools will collect, store and analyze data from this new dimension of digital battlefield warfare. Instrumentation XXI ensures Army Transformation communications can be captured and analyzed at various echelons from the tactical vehicle to the command center, in realistic operational scenarios. Additionally, Instrumentation XXI provides MAIS the opportunity to interface the Live component "weapons systems" into the synthetic environment and leverage live tests with simulations. The ability to fully stress the entire battlefield with numerous simulated entities present opportunities for significant cost savings and greater realism than would otherwise be achievable. This effort responds to the current OPTEMPO and PERSTEMPO demands to force the US Army to conduct more realistic, more accurate, and comprehensive evaluations at reduced costs by virtually

replicating a greater number of troop resources in force-on-force testing and training exercises. Personnel and resources cuts have already been taken in the test community predicated upon data reduction/analysis streamlining provided by this MAIS capability.
During FY 2002, this effort continues the development of MAIS P3I in support of Army Transformation.

FY 2000 Accomplishments

•	4550	Completed the design and development of the MAIS Weapons Performance Module (WPM) and the Micro-programmable Electronics (MPE) initiative. Continued MAIS miniaturization, specifically the design, development, and testing of system algorithms. Initiated studies, implementation concepts, and conducted preliminary testing of a new programmable encryption device mandated by the National Security Agency. Initiated the development of core system algorithms and interfaces for existing and emerging weapon systems. Initiated development of a reconfigurable interface/controller that allows MAIS to use the training community's surrogate weapons. Initiated development of player unit bus architecture for player unit instrumentation kits to improve performance, safety, and eliminate bulky cabling. Initiated C3 Center upgrade and performance improvement studies. Evaluated and prototyped a multi-spectral laser receiver that receives both simulated engagement pairing and tactical laser messages.
Total	4550	

FY 2001 Planned Program

•	6319	Complete development of the player unit bus architecture. Continue MAIS P3I core weapon system interface development for existing and emerging weapon systems. Continue development of the MAIS reconfigurable surrogate interface/controller. Continue MAIS miniaturization, specifically design, develop and test system algorithms. Initiate the development of core system algorithms and interfaces for existing and emerging weapon systems to include vest peripherals, GPS System and encryption components. Continue development of a reconfigurable interface/controller that allows MAIS to use the training community's surrogate weapons. Initiate development of the MAIS Weapons Performance Module upgrade. Initiate After Action Review, Test Officer's Training Station, Combat Identification for Dismounted Soldiers (CIDDS) and the Land Warrior Interface. Implement development of the Weapon System Software Compatibility Upgrade. Initiate design and development of the MAIS P3I Wearable Computer. Implement C3 Center upgrade and performance improvements. Implement new encryption device in conjunction with MPE.
•	169	Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) Programs.
Total	6488	

FY 2002 Planned Program

•	8309	Complete C3 Center upgrade. Complete Combat Identification for Dismounted Soldiers (CIDDS), the Land Warrior Interface and new Micro-Programmable Electronic (MPE) encryption device. Initiate development of Multi-Frequency and See-Through Obscurants. Initiate development of Pairing Improvements, specifically the development and testing of system algorithms. Implement development of Artillery Fire Support Interface to incorporate Area Weapons Effects (AWE). Initiate the design and development of Threat Interfaces, to emulate threat weapons systems. Continue development of MAIS P3I core weapons system interface and the MAIS reconfigurable surrogate interface/controller. Continue MAIS miniaturization. Continue the development of core system algorithms and interfaces for existing and emerging weapons systems to include vest peripherals, GPS System, and encryption components. Continue development of a reconfigurable interface/controller, which allows use of the training community's surrogate weapons. Continue development of the After Action Review and Test Officer's Training Station. Continue development of the Weapon System Software Compatibility Upgrade and the design and development of MAIS P3I Wearable Computer.
Total	8309	

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605103A - Rand Arroyo Center**	**732**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
732 ARROYO CENTER SPT	17051	19689	19972	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This program funds the RAND Arroyo Center, the Department of the Army's Federally Funded Research and Development Center (FFRDC) for studies and analysis, which has operated at RAND since 1985. The Arroyo Center draws its researchers from RAND's staff of nearly 700 professionals trained in a broad range of disciplines. Most staff members work in RAND's two principal locations-Santa Monica, California, and Arlington, Virginia. The RAND Arroyo Center provides for continuing analytical research across a broad spectrum of issues and concerns, which are grouped in four major research areas: Strategy, Doctrine, and Resources; Military Logistics; Manpower and Training; and Force Development and Technology. The RAND Arroyo Center research agenda is primarily focused on mid/long-term concerns. Results and analytical findings directly impact senior leadership deliberations on major issues. Arroyo Center research is sponsored by the Chief of Staff, Vice Chief, and Assistant Vice Chief of the Army; the Deputy Chiefs of Staff of the Army; the Assistant Army Secretaries; and most of the Army's major commands. The Arroyo Center is provided guidance from the Army through the Arroyo Center Policy Committee (ACPC), which is co-chaired by the Vice Chief of Staff of the Army and the Assistant Secretary of the Army (Acquisition, Logistics and Technology). The ACPC reviews, monitors, and approves the annual Arroyo Center research plan as well as all individual research projects. Each project requires General Officer (or SES equivalent) sponsorship and involvement on a continuing basis. RAND Arroyo provides the Army with a unique multidisciplinary capability for independent analysis. Although the Arroyo Center staff work with analysts in the Army's internal study program, the Arroyo Center is an independent organization that provides analysis for both the Army and the broader national security community. Work in this program element is consistent with the resource constrained Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and Project Reliance.

FY 2000 Accomplishments

- 3111 Conducted research addressing the Army's role in national security, to include assisting the Army leadership to prepare for high-level strategy, force structure, and resource reviews; assessed the Army's current role in space and how it can be enhanced in the future; examined new concepts, technologies, and doctrine to enhance Army capabilities to conduct operations in urban environments; sought to explain what did not take place (and why) as well as what did and the way in which diplomatic factors and coalition and physical constraints affected operations in the Kosovo campaign; and provided a framework for monitoring the emergence of "peer competitors."

FY 2000 Accomplishments (Continued)

- 4085 Conducted research addressing the creation of a more agile, responsive force, to include a quantitative assessment of new rapid-reaction capabilities; determined the effects of deployment policies on personnel readiness; identified ways to support SSC missions while minimizing impacts on the Army's ability to execute its time-phased force deployment list for a Multi-Theater War (MTW); developed and supported the implementation of process improvement initiatives that will help the Army improve the order and ship process; helped the Army size and configure the stocks at the retail echelons to improve supply performance and reduce inventory investment; extended the Velocity Management (VM) methodology to the "quality" aspect of Army processes to help understand the sources of quality problems, measure their impact on the logistics system, and help generate corrective solutions; examined alternative unit resource priority-setting methodologies and new concepts for resourcing units to maintain a readiness posture that supports the full range of operational missions; and provided analytic planning and execution support to five Army After Next franchises.
- 2249 Conducted research addressing recapitalization and modernization strategies, to include developing measures of effectiveness for evaluating contributions to future capabilities provided by Army modernization programs; used high-resolution simulation to quantify characteristics of future-force concepts and determined their military utility in a system-of-systems context; examined Army programs and investment strategies and recommended alternative strategies that might result in quicker fielding of force capabilities; provided a long-term vision of how spiral development, as applied to information systems, should be incorporated within the Army acquisition, test and evaluation, and training environment; and analyzed the necessary tradeoffs in meeting increasing demands on current forces while preparing to modernize with no or little increases in the acquisition budget.
- 674 Provided analytic support to the QDR effort, to included helping the Army leadership evaluate how to best develop and demonstrate capabilities to support domestic authorities in peace and war; and forecasted active duty personnel costs in order to assess whether out-year personnel budget amounts are sufficient to attract and retain the quantity and quality of personnel sought by the Army.
- 3148 Conducted research addressing staffing and shaping the force, to include developing designs and plans for conducting Army recruiting market research and evaluating the cost-effectiveness of advertising and marketing programs; addressed the frequency of ARNG rotations to CTCs; analyzed personnel policy issues that arise as the Army implements distance learning; tested and evaluated alternative ROTC staffing programs that could reduce demands for active personnel; and assessed how the Army's new Officer Personnel Management System is affecting long-standing problems in the officer force.
- 3035 Conducted research addressing reshaping support functions, to include developing concepts to improve Army depot maintenance processes and provide improved weapon-system maintenance support across all echelons for existing equipment and new technologies; analyzed single stock fund policies to identify implementation issues and recommended policy refinements; helped the Army improve its strategic responsiveness in small- and mid-size operations; applied the VM define-measure-improve methodology to the procurement process in lead times and order quantities to reduce administrative and production lead times; and developed a blueprint to guide the Army toward its future (2005-2015 and beyond) logistics system.

FY 2000 Accomplishments (Continued)

- 749 Conducted research addressing maintaining the technological edge, to include identifying ways the Army can better collaborate and partner with industry by exploiting acquisition reform initiatives to improve the Army's acquisition system; and determined if there are better organizational models for the Army laboratories.

Total 17051

FY 2001 Planned Program

- 4821 Research addressing the Army's transformation including technological and programmatic assessment of the Future Combat Systems; full spectrum land force capabilities assessment; objective force analysis; technical feasibility of proposed tactical airlift systems; effectiveness of medium forces in past conflicts; human resource implications of Army transformation; joint rapid decisive operations; support to Army transformation wargaming and analysis; and supporting small and mid-sized operations.
- 4427 Research on issues being raised by the administration in its major defense review including Army capabilities to respond to future engagement requirements; globalization of multinational force compatibility programs; installation planning for weapons of mass destruction preparedness; force deployment cost comparison; modeling costs of Army force structure changes; cost effectiveness tradeoffs between Apache and Comanche; military operations on urbanized terrain; integrated modernization analysis process; alternatives to two MTWs as force-planning constructs; force management and readiness to support multiple missions; and personnel management in support of multiple missions.
- 4217 Research on reshaping support functions including improving the Army's fulfillment process; establishing better links in the supply chain; improving the Army's stockage determination process; managing training ammunition; improving Army maintenance processes; strategic actions for the Combat Support/Combat Service Support transformation; diagnosing equipment serviceability; and facilitating implementation of the single stock fund.
- 1554 Research on shaping and staffing the force including structuring U.S. combat capability for early conflict termination; keeping future Army pay competitive; collective training resources and unit readiness; officer accession and retention; assessing the Officer Personnel Management System; manning the Army Special Operations Forces; and determining training proficiency at CTCs.
- 3500 Research aimed at maintaining the Army's technological edge including improving the Army's procurement process; understanding how to do a better job in outsourcing science and technology; portfolio planning for Army programs; and expanded acquisition development strategy.
- 585 Support a study on Army acquisition practices at the Center for Naval Analysis.
- 585 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 19689

FY 2002 Planned Program

- 6990 Research addressing the national security debate
- 5792 Research addressing shaping and staffing the force
- 5992 Research addressing reshaping support functions and infrastructure.
- 1198 Research addressing exploring technology alternatives

Total 19972

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	17523	19872	20183	0
Appropriated Value	17656	19872	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-472	0	0	0
c. Omnibus or Other Above Threshold Reductions	-72	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-61	-183	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	-211	0
Current Budget Submit (FY 2002/2003 PB)	17051	19689	19972	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605301A - Army Kwajalein Atoll**	**614**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
614	ARMY KWAJALEIN ATOLL	135702	151920	150071	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The U.S. Army Kwajalein Atoll/Kwajalein Missile Range (USAKA/KMR), located in the Republic of the Marshall Islands, is a remote, secure activity of the Major Range and Test Facility Base as constituted by DoD Directive 3200.11. Its function is to support test and evaluation of major Army and DoD missile systems, Army Space surveillance and object identification, and National Aeronautics and Space Administration (NASA) scientific and space programs. Programs supported include Army missile defense, Ballistic Missile Defense Organization (BMDO) demonstration/validation tests, Air Force Intercontinental Ballistic Missile (ICBM) development and operational tests, U.S. Space Surveillance Network, and NASA Space Transportation System (Shuttle) and orbital debris experiments. USAKA/KMR supports the Missile Defense Act of 1991 to put in place a Ground Based Defense System by 2006 or the earliest date possible. The technical element of USAKA/KMR is the Kwajalein Missile Range, which consists of a number of sophisticated, one-of-a-kind, radar, optical, telemetry, command/control/ communications, and data reduction systems. These systems include the four unique radar of the Kiernan Reentry Measurement Site (KREMS); super Recording Automatic Digital Optical Tracker (RADOT) long range video-metric tracking systems, high density data recorders for high data-rate telemetry, and underwater acoustic impact location system data analysis and reduction hardware and software. USAKA/KMR is contractor operated and is therefore totally dependent upon its associated support contractors. Program also provides funds for the contractors to accomplish installation operation and maintenance (O&M). Noted funding for FY 2002 and 2003 is required to maintain minimal O&M support, while accepting moderate risk of continued degradation of USAKA/KMR infrastructure (housing, offices, facilities), higher future repair costs, and reduced logistical support capability, as well as completion of the KMR Modernization and Remoting (KMAR) Program. The KMAR program is a concurrent, range-wide modernization effort to maximize the use of common, standardized commercial off-the-shelf (COTS) technology to replace obsolete components; implement common hardware/software architectures and automation; and "remote" the operation of range sensors and instrumentation to the island of Kwajalein. This effort will upgrade range capabilities that are critical to the success of upcoming Theater Missile Defense (TMD) and National Missile Defense (NMD) test missions as well as reduce USAKA/KMR annual operating costs by $18M per year beginning in FY 2003 as reflected in FY 2003-2007 funding levels above. The Army, Air Force, Navy and BMDO have programs planned, which have significant test and data gathering requirements at USAKA/KMR. Air Force programs require firing at full range with complete data collection during late mid-course and terminal trajectory. BMDO programs require range sensors to collect technical data in support of National Missile and Theater Missile Defense programs being conducted at USAKA/KMR. These test data cannot be obtained except through the use of technical facilities available on and in the vicinity of USAKA/KMR. Data collection on objects in space remains significant because the Advanced Research Project Agency (ARPA) Long-Range Tracking and Instrumentation Radar (ALTAIR), located at USAKA/KMR, is one of only three sensors world-wide that has deep-space tracking capability. Program supports Air Force's Peacekeeper, Minuteman III, and Delta; Army/BMDO's NMD (Ground Based Interceptor (GBI), Ground Based Radar (GBR), Battle Management/Command, Control and Communications (BMC3), In-Flight Interceptor Communication System (IFICS)), TMD (THAAD, PAC-3, System Integration of Tests, Family of Systems) Theater Missile Defense Critical Measurements Program, Theater High Altitude Air Defense (THAAD), Patriot, and ground-based radar; NASA's Space Transportation System

(STS), Orbital Debris Measurement Program, Small Expendable Deployer System and Orbital Debris Radar Calibration Spheres, along with the Air Force Space and Missile Center's associated programs.
This activity supports the Legacy to Objective transition path of the Transformation Campaign Plan.

FY 2000 Accomplishments

- 8628 Provided management support (salaries, training, travel, SMDC matrix, etc.)
- 5750 Accomplished major maintenance and repair projects, including design, executed by Corps of Engineers (COE).
- 14957 Procured petroleum, oils and lubricants (POL) and Military Standard Requisitioning and Issue Procedure (MILSTRIP) items.
- 3080 Procured other mission operating supplies, equipment, and services.
- 7209 Provided air and sea transportation (cargo to and from continental United States).
- 35096 Continued to support Army, BMDO, NASA and Air Force development and operational missile testing. Continued support to KMR Modernization and Remoting (KMAR).
- 60982 Provided logistical support (facilities maintenance and repair, aviation, automotive, marine, medical, food services, education, information management, etc.) to self contained islands of USAKA.

Total 135702

FY 2001 Planned Program

- 9406 Provide management support (salaries, training, travel, SMDC matrix, etc.).
- 3523 Accomplish major maintenance and repair projects, including design, executed by Corps of Engineers (COE).
- 17739 Procure POL and MILSTRIP.
- 3886 Procure other mission operating supplies, equipment, and services.
- 7475 Provide air and sea transportation (cargo to and from continental United States).
- 32953 Continue to support Army, BMDO, NASA and Air Force development and operational missile testing. Continue support to KMR Modernization and Remoting (KMAR).
- 72460 Provide logistical support (facilities maintenance and repair, aviation, automotive, marine, medical, food services, education, information management, etc.) to self contained islands of USAKA.

FY 2001 Planned Program (Continued)

- 4478 Small Business Innovative Research/Small Business Technology Transfer Programs

Total 151920

FY 2002 Planned Program

- 9657 Provide management support (salaries, training, travel, SMDC matrix, etc).
- 450 Accomplish major maintenance and repair projects, including design, executed by Corps of Engineers (COE).
- 18557 Procure POL and MILSTRIP.
- 4120 Procure other mission operating supplies, equipment and services.
- 8468 Provide air and sea transportation (cargo to and from continental United States).
- 34948 Continue to support Army, BMDO, NASA and Air Force development and operational missile testing. Continue support to KMAR program.
- 73871 Provide logistical support (facilities maintenance and repair, aviation, automotive, marine, medical, food services, education, information management, etc.) to self contained islands of USAKA.

Total 150071

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	139322	153326	144715	0
Appropriated Value	140344	153326	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-3620	0	0	0
c. Omnibus or Other Above Threshold Reduction	-554	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-468	-1406	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	5356	0
Current Budget Submit (FY 2002/2003 PB)	135702	151920	150071	0

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

June 2001

BUDGET ACTIVITY
6 - MANAGEMENT SUPPORT

PE NUMBER AND TITLE
0605326A - Concepts Experimentation

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	21361	18738	33067	0	0	0	0	0	0	0
308 CONCEPTS EXPERIMENTATION	19452	12317	9414	0	0	0	0	0	0	0
309 DIGITAL INFORMATION TECHNOLOGY TESTBED	1909	0	0	0	0	0	0	0	0	0
312 ARMY/JOINT EXPERIMENTATION	0	6421	23653	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The Concept Experimentation Program (project 308) enables the U.S. Army Training and Doctrine Command (TRADOC) battle labs and schools to evaluate emerging concepts, technologies and other equipment to help define Army mission needs and operational requirements. Projects selected for funding are relatively low cost conceptual evaluations, with high potential for warfighting return on investment. The program provides direct support to Battle Lab Warfighting Experiments (BLWE). The program is also a first look at emerging technologies that have the potential to support the Army's Transformation design needs. The Digital Information Technology Testbed (project 309), is a functional test bed and model for the DOD and Federal Government to test and integrate new digital technologies for collecting, disseminating and managing information globally. It is also operational multimedia records (management and archives) that enable DOD to meet its Title 10 responsibilities under the Goldwater-Nichols Act through collecting, managing and disseminating information worldwide to achieve knowledge dominance. Continued service experimentation in the form of Advanced Warfighting Experiments (AWE), limited objective experiments (LOE), and events supporting major Joint experiments is key to determine the Doctrine, Training, Leader Development, Organization, Materiel and Soldiers (DTLOMS) insights on how the Army fights as a force in transition from Legacy to Objective Force. Army Experimentation (project 312) funds the Army Experimentation Campaign Plan (AECP) in support of Army Transformation. Congressional language mandates service participation in Joint experimentation. Army participation in Joint experiments is key to determine the interoperability requirements and how the force contributes to the Joint experimental concepts supporting Joint Vision (JV) 2020 and most importantly, Joint operations at the operational level of war.

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

June 2001

BUDGET ACTIVITY
6 - MANAGEMENT SUPPORT

PE NUMBER AND TITLE
0605326A - Concepts Experimentation

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	20785	15410	91943	0
Appropriated Value	20990	18910	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reduction	0	0	0	
b. SBIR/STTR	-560	0	0	
c. Omnibus or Other Above Threshold Reductions	-86	0	0	
d. Below Threshold Reprogramming	1136	0	0	
c. Rescission	-119	-172	0	
Adjustments to Budget Years Since FY2001 PB	0	0	-58876	
Current Budget Submit (FY 2002/2003 PB)	21361	18738	33067	0

Change Summary Explanation: Funding - FY 2002: Funds were realigned in support of the Army Transformation (-56046) and the Joint Experiment Millennium Challenge 02 (-2830). FY 2003: Funds were realigned in support of the Army Transformation(-32914).

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605326A - Concepts Experimentation**	**308**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
308 CONCEPTS EXPERIMENTATION	19452	12317	9414	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The Concept Experimentation Program (CEP) is a key innovative tool which provides TRADOC battle labs and schools the ability to capitalize on emerging technologies, emerging warfighting concepts, and new materiel initiatives. Program growth reflects increased emphasis on Warfighter Rapid Acquisition Program (WRAP) initiatives and accelerated acquisition methods. Funds are used to acquire, lease or fabricate equipment to conduct experiments to determine military utility or potential to satisfy Army Doctrine, Training, Leader Development, Organization, Materiel and Soldiers (DTLOMS) needs. TRADOC battle labs build on initiatives with greatest potential payoff. Program is also used as a first look at emerging technologies and emerging warfighting concepts that have the potential to support the Army's design needs. As the Army moves toward the Objective Force, the critical task of designing the force around information requires major investment in information-age capabilities. Constructive, virtual, and live simulations are used to examine warfighting concepts across DTLOMS domains. They cover all aspects of command and control, lethality, survivability, and tempo and are essential to technology insertion in future Army systems and force structure.

FY 2000 Accomplishments

- 323 Air and Missile Defense Maneuver Operations Capabilities
- 110 Smart Marker I
- 185 Feature Extraction Evaluation
- 133 Military Police/Engineer Urban Robot CEP
- 197 Nearly Autonomous Real-Time Alarm Security System (NARTASS)
- 355 Battle Staff Trainer for IBCT
- 470 Common Reconfigurable Sensor System (CRSS) and Communications for Long Range Fire Support
- 115 Soldier Power
- 114 Under Barrel Tactical Payloader
- 50 Evaluation of Alternative Voice Switching Technology in Support of the Initial Brigade Tactical Operations Center

FY 2000 Accomplishments (Continued)

- 145 Enhanced Information Assurance Support
- 386 Information Dissemination Management Tactical IDM-T Enhancement for Initial Brigade and Supporting ARFOR
- 625 Beyond Line-of-Sight Communications Support
- 677 Battle Command Reengineering (Phase IV)
- 70 Audible Aversion Acoustic Device
- 295 Intelligence, Surveillance and Reconnaissance Planning Support Tool
- 101 Forward Looking Infrared Mission Planning Performance Enhancer
- 401 Army Command and Control Space Enhanced Program (AC2SEP)
- 497 Integrated Course of Action Critiquing and Elaboration System (ICCES) Experiment
- 250 Concept of Employment for HEMTT LHS Water Tank Racks for support of Water Distribution within the IBCT
- 245 Employment of the Helicopter External Lift Enhancer (HELE) to Support the IBCT
- 1600 Anticipatory Logistics
- 73 Swing Thru System
- 100 Palletized Load System Shoe
- 100 Roller Platform for Air Deployment
- 845 Battle Lab Discretionary Concept Experimentation
- 55 Battlefield Ministrations Tracking System
- 50 Handheld Command and Control Wireless Communications (HC2WC)
- 1909 Mounted Maneuver Battle Lab (MMBL) Experimentation
- 300 AECP - System Linkages - Close Combat Tactical Trainer (Division Capstone Exercise)
- 500 AECP - System Linkages (Division Capstone Exercise)
- 2125 AECP - C4I After Action Report Integration (Division Capstone Exercise)
- 405 AECP - Operational Architecture/Digital Command Post Support (Joint Contingency Force Advanced Warfighting Experiment)
- 250 AECP - Information for Global Reach

FY 2000 Accomplishments (Continued)

- 1935 AECP - Enroute Mission Planning and Rehearsal System (EMPRS) (Joint Contingency Force Advanced Warfighting Experiment)
- 1125 AECP - Land Warrior (Joint Contingency Force Advanced Warfighting Experiment)
- 1200 AECP - Data Collection (Joint Contingency Force Advanced Warfighting Experiment)
- 1136 AECP - Enroute Mission Planning and Rehearsal System (EMPRS) (Joint Contingency Force Advanced Warfighting Experiment)

Total 19452

FY 2001 Planned Program

- 3473 Mounted Maneuver Battle Lab (MMBL) Experimentation (Congressional Add)
- 445 Objective Communications Support for RSTA
- 375 Mobility Enhancement to Support Interim Brigade Combat Teams Communications and Tactical Operations Center Networks
- 130 Secure Wireless Local Area Network (LAN) for Brigade Combat Teams
- 500 Future Combat Command and Control Reengineering
- 550 Information Support COP Overlay - Information Operations and Management Information
- 113 Anticipatory Logistics (FY 00 Close Out)
- 300 Advanced Planning System
- 450 Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Aviation Sensors and Communications Relay Mix Study
- 249 Concept of Employment for HEMTT LHS Petroleum Tank Racks
- 100 Ordnance skill Consolidation
- 730 Chemical And Biological Cooperation Detection
- 330 Multi-purpose Aerial Delivery System (M-PADS) Analysis
- 450 Future Fires Command and Control
- 475 Striker II Sensor System Concept
- 2569 Discretionary funding for Battle Lab Directors to quickly evaluate emerging technology.

FY 2001 Planned Program (Continued)

- 815 Support for Joint Warfighting Exercise Millennium Challenge 02 (Reprogram to PE 0605326.312)
- 135 Urban Future Infantry Combat Command and Control
- 128 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 12317

FY 2002 Planned Program

- 9414 Concept experimentation to be determined by September 2001 CEP Schedule and Review Committee.

Total 9414

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605326A - Concepts Experimentation**	**312**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
312 ARMY/JOINT EXPERIMENTATION	0	6421	23653	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The Army Experimentation Campaign Plan (AECP) mission is to experiment with forces enabled with information based command and control, advances in training and leader development, technology enhancements, and Joint interoperability to realize improvements in warfighting capability and strategic responsiveness. Service participation in Joint experiments is Congressionally mandated with each service funding its own participation. The objective of experimentation is to increase the Army's strategic responsiveness for an expanded range of missions while preserving our core warfighting capability.
FY 2002 funds are to be divided in support of Army Transformation between Army and Joint Experimentation. Operational guidelines require new concepts to meet Army Transformation and Joint force requirements. Concepts will be subject to rigorous experimentation and analysis for informed senior Army leadership decisions. Additionally, experimentation is required "to support development of Objective Force operational and organizational plans and future operational capabilities" (Army Transformation Campaign Plan). Initiatives include developing system of systems linkages; exploring and developing new training support packages, digital after action report (AAR) capabilities, system engineering and architecture development, and simulation/stimulation development.

FY 2000 Accomplishments

Funded in Project 308

FY 2001 Planned Program

- 500 System Linkages - Run Time Manager Support
- 300 Digital Combined Arms Tactical Trainer Training Support Packages
- 100 Digital Combined Arms Tactical Trainer System Linkages
- 150 Digital Combined Arms Tactical Trainer After Action Report Capability
- 520 Command, Control, Communications and Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Testbed upgrade to support Joint Experiment Millennium Challenge 02 (MC 02)

FY 2001 Planned Program (Continued)

- 739 Army Battle Command System (ABCS) integration in support of ABCS Battlefield Functional Area (BFA) systems - Joint Experiment Millennium Challenge 02 (MC02)
- 2290 Development, integration and implementation of the systems architecture for Joint Experiment Millennium Challenge 02 (MC 02).
- 1300 Purchase of ABCS hardware for Millennium Challenge 02
- 331 Investigation of new wireless local area network/Tactical Fast Lane (WLAN/TACLANE) software; tactical internet testing with new ABCS software; investigate TOC routing configuration for architectures
- 191 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 6421

FY 2002 Planned Program

- 23653 Force XXI Experimentation / Advanced Warfighting Experiments to be prioritized by the Army Experimentation Campaign Plan (AECP) Funding Integrated Processing Team.

Total 23653

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605601A - Army Test Ranges and Facilities**	**F30**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
F30	ARMY TEST RANGES & FACILITIES	144670	121532	114411	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This program provides the institutional funding required to assure a developmental test capability is available for Department of Defense (DoD) Program Executive Officers, Program and Product Managers, and Research, Development, and Engineering Centers. All functions and resources associated with this program are managed by the U.S. Army Developmental Test Command (DTC), a subordinate command of the Army Test and Evaluation Command (ATEC) established in October 1999. DTC manages three Major Range and Test Facility Bases:

Yuma Proving Ground (YPG), Arizona (to include management of Army natural environmental testing)
Aberdeen Test Center, Aberdeen Proving Ground, Maryland
White Sands Missile Range, New Mexico (including the Electronic Proving Ground (EPG), Fort Huachuca, Arizona).

This program also provides the required developmental test capability at:

Aviation Technical Test Center, Fort Rucker, Alabama
Redstone Technical Test Center, Redstone Arsenal, Alabama
Cold Regions Test Center, Fort Greely and Fort Wainwright, Alaska (subordinate of YPG)
Tropic Test Site at Schofield Barracks, Hawaii (subordinate of YPG)

In addition, it provides for the capability for integrated test planning plus safety verification/confirmation at HQ, DTC located at Aberdeen Proving Ground, Maryland. HQ, DTC also conducts test mission management for Dugway Proving Ground, Utah, but the institutional test mission operations funds for this major range are not included in this program element; they are in the Chemical Biological Defense Program (CBDP) PE 0605384BP/DW6.

Developmental test capabilities at each test range have been uniquely established, are in place to support test and evaluation (T&E) requirements of funded weapons programs, and are required to assure technical performance, adherence to safety requirements, reliability, logistics supportability, and quality of materiel in development and in production. Program funding includes efforts toward leveraging technologies to include procurement of essential equipment, personnel training and test facility modernization to support the warfighter's weapons and equipment. Current testing capabilities are not duplicated within DoD and they represent test capabilities needed to assure acceptable risk to the soldier as new technologies emerge into fielded weapons systems.

This program finances indirect test operating costs not billable to test customers, replacement of test equipment and test facility modernization projects to maintain current testing capabilities and improvements to safety, environmental protection, efficiency of test operations, and technological advances. This program does not finance reimbursable costs directly identified to a user of these ranges. Direct costs are borne by materiel developers and project/product managers in accordance with DoD Directive 7000.14R, October 1999. This program sustains the developmental test and evaluation capability to support all transition paths, Objective S&T, Legacy, Legacy to Objective, Interim, and Objective, of the Army Transformation

Campaign Plan (TCP).

Some of the major systems tested during FY 2000 include: Legacy Systems - Joint Services Lightweight Howitzer, ABRAMS, and BRADELY; Legacy to Objective Systems - PATRIOT and PAC3, JAVELIN and LOGBOW HELLFIRE; Interim System - Interim Armored Vehicle: Objective Systems - COMANCHE and ATACMS/BAT, ATACMS 2020; support of Object Force S&T; as well as other service systems such as Navy STANDARD missile and Air Force AMRAAM missile. Some of the programs currently projected for future testing include: Legacy System - Joint Services Lightweight Howitzer; Legacy to Objective Systems - Theater High Altitude Area Defense (THAAD), Land Warrior, and Force Battle Command Brigade and Below (FBCB2); Interim System - Interim Armored Vehicle/Brigade Combat Teams; Objective Systems - COMANCHE, Future Combat System (FCS), HIMARS/Future Rocket System and Joint Transport Rotocraft/CH47/ICH; Support of Objective Force S&T - Army Warfighting Experiments, and Advanced Concept Technology Demonstrations; as well as support of numerous Joint Service, Air Force, and Navy programs.

FY 2000 Accomplishments

- 81652 Provided for test center civilian labor and other support costs which cannot be directly identified to a specific test customer or program. These civilian personnel perform administrative and staff/management support for DTC's mission to provide developmental and other acquisition related testing of DoD materiel, weapons, and weapons systems within the acquisition cycle to include resource management, safety, surety operations, range control, Contracting Officer's Representative (COR) duties, and environmental oversight/compliance of testing activities.
- 47356 Provided for labor and supporting costs for test center contractor personnel performing administration and management of DTC's test mission contracts. This is the indirect portion of the total cost of providing contractual effort including range operations, automotive testing, radar operations and maintenance, aerial cable operations, warehousing support, data collection, data reduction, project management, aircraft maintenance, and Automated Data Processing (ADP) support.
- 5662 Provided for civilian and contractor labor and other support costs at DTC HQ for the integrated test planning, safety verification/confirmation function, and DTC/ATEC test mission management.
- 10000 Congressional increase for modernization of test facilities at White Sands Missile Range. Projects included Cox Range Control Center Non-Instrumentation Transition, National Range Telemetry Systems Upgrade, and Electronic Proving Ground Distributed Command, Control, Communications, Computers, Intelligence (C4I) Test Capability.

Total 144670

FY 2001 Planned Program

- 69869 Provides for test center civilian labor and other support costs which cannot be directly identified to a specific test customer or program. These civilian personnel perform administrative and staff/management support for DTC's mission to provide developmental and other acquisition related testing of DoD materiel, weapons, and weapons systems within the acquisition cycle to include resource management, safety, surety operations, range control, COR duties, and environmental oversight/compliance of testing activities.
- 35283 Provides for labor and supporting costs for test center contractor personnel performing administration and management of DTC's test mission contracts. This is the indirect portion of the total cost of providing contractual effort including range operations, automotive testing, radar operations and maintenance, aerial cable operations, warehousing support, data collection, data reduction, project management, aircraft maintenance, and ADP support.
- 6436 Provides for civilian and contractor labor and other support costs at DTC HQ for the integrated test planning, safety verification/confirmation function, and DTC/ATEC HQ test mission management.
- 8000 Congressional increase for White Sands Missile Range Test Facility and Instrumentation Modernization for aging radar, telemetry optics, data reduction, and communications test capabilities; and develop, test, and implement the software interfaces required to connect range facilities and resources to the newly constructed Cox Range Control Center and the range-wide fiber optics based test support network (TSN).
- 1944 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs

Total 121532

FY 2002 Planned Program

- 68872 Provides for test center civilian labor and other support costs which cannot be directly identified to a specific test customer or program. These civilian personnel perform administrative and staff/management support for DTC's mission to provide developmental and other acquisition related testing of DoD materiel, weapons, and weapons systems within the acquisition cycle to include resource management, safety, surety operations, range control, COR duties, and environmental oversight/compliance of testing activities.
- 39778 Provides for labor and supporting costs for test center contractor personnel performing administration and management of DTC's test mission contracts. This is the indirect portion of the total cost of providing contractual effort including range operations, automotive testing, radar operations and maintenance, aerial cable operations, warehousing support, data collection, data reduction, project management, aircraft maintenance, and ADP support.
- 5579 Provides for civilian and contractor labor and other support costs at DTC HQ for the integrated test planning, safety verification/confirmation function, and DTC/ATEC HQ test mission management.

FY 2002 Planned Program (Continued)

- 182 Provides for two civilians' salaries in the Big Crow Project Office

Total 114411

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	146485	119657	116666	0
Appropriated Value	147193	122657	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR/STTR	-2097	0	0	0
c. Omnibus or Other Above Threshold Reductions	-321	0	0	0
d. Below Threshold Reprogramming	282	0	0	0
e. Rescissions	-387	-1125	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	-2255	0
Current Budget Submit (FY 2002/2003 PB)	144670	121532	114411	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605602A - Army Technical Test Instrumentation & Targets**	**628**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
628	TEST TECH & SUST INSTR	32943	36915	34259	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This program provides critical front-end investments for development of new test methodologies, test standards, advanced test technology concepts for long range requirements, future test capabilities, and advanced instrumentation prototypes for the United States Army Developmental Test Command (DTC), which includes: Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; White Sands Missile Range (WSMR), New Mexico (including the Electronic Proving Ground (EPG), Fort Huachuca, Arizona); Yuma Proving Ground (YPG), Arizona (including the Cold Regions Test Center (CRTC), Fort Greely, Alaska); Aviation Technical Test Center (ATTC), Fort Rucker, Alabama; Redstone Technical Test Center (RTTC), Redstone Arsenal, Alabama; and Dugway Proving Ground (DPG), Utah. These capabilities support the development and fielding cycle of the Army Transformation as well as Joint Vision 2020 initiatives. Within this program, a major initiative called Virtual Proving Ground (VPG) is directed towards integrating Modeling, Simulation, and Internetting technologies into the test and evaluation process to support acquisition streamlining and to offset prior manpower and budget reductions. The Virtual Proving Ground will significantly improve the ability of the Army to provide early influence on system design, reduce test costs and time, and extend the envelope of information to reduce risk and acquisition costs. This initiative is critical to achieving long-term efficiencies within the acquisition process by conforming to the Simulation and Modeling for Acquisition, Requirements, and Training (SMART) and Simulation Based Acquisition (SBA) processes. Sustaining instrumentation maintains existing testing capabilities at DTC test facilities by replacing unreliable, uneconomical and irreparable instrumentation, as well as incremental upgrades of instrumentation and software, to assure adequate test data collection capabilities. This data supports acquisition milestone decisions for projects such as Interim Armored Vehicle (IAV), Future Combat System (FCS), Theater High Altitude Area Defense (THAAD), Comanche, Patriot Advanced Capability Phase 3 (PAC 3), High Mobility Artillery Rocket System (HIMARS), M1A2 Main Battle Tank, Joint Service Lightweight Integrated Suit Technology (JSLIST), Army Battle Command System (ABCS), Force XXI Battle Command Brigade and Below (FBCB2) and Land Warrior. This Program Element develops and sustains developmental test capabilities that provide key support to the Army's Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

FY 2000 Accomplishments (Continued)

- 11330 CONTINUED SUPPORT OF VIRTUAL PROVING GROUND (VPG):Developed and integrated a DTC-wide High Level Architecture (HLA) compliant architecture to integrate internal and external models, software algorithms, databases and synthetic environments. Continued funding of the cooperative Technology Program Annexes (TPA) with the Army Research Lab to support development and integration of fire control and ground vehicle simulations. Completed development of a bridge-crossing simulator to perform bridge performance and endurance testing by simulating heavy vehicle crossings. Continued development of a physics-based helicopter simulation for Comanche to conduct test and evaluation of the potential flight hazards associated with integration of new components into the aircraft. Initiated development of a standardization process to integrate various software components (synthetic environments, databases, data repositories, models, and interfaces) to support virtual testing. Developed a system to merge telemetry, optics, radar, Global Positioning Systems (GPS), and Time-Space-Position Information (TSPI) data to support mission analysis of large missile and air defense system test data. Initiated development of an architecture to rehost existing C4I legacy test tools to support Army testing and training requirements. Initiated development of a test control simulation tool which integrates actual field instrumentation data with existing simulations and models to conduct test range management, test setup, simulation model validation and test result validation. Initiated development of validated model to replicate a chemical/biological point detection system. Developed databases and models and simulations supporting virtual testing of weapons systems, drive hardware-in-the-loop simulators, and provide range efficiencies and enhanced range safety. Developed 2-D visible and IR scenes to drive the scene projectors and signal injection interfaces in the Electro-Optics Target Acquisition,
  Electro-Optics Sensor Flight Evaluation and IR Simulation Test Acceptance test facilities. Procured computer hardware and software to conduct virtual testing.
- 15805 INITIATED/CONTINUED DEVELOPMENT, ACQUISITION AND SUSTAINMENT OF CRITICAL TEST INSTRUMENTATION AND EQUIPMENT. Completed upgrade of the real-time x-ray system, acquisition of airborne recorder interface units, upgrade of a suite of optical tracking instrumentation with high-resolution video cameras and development of software that predicts missile debris dispersion and analyzes the impact to commercial aircraft traversing the range. Corrected tornado damage to Redstone Technical Test Center electromagnetic radiation effects and lightning suite, laser target scoring system, gun chamber/gun pointing measurement system, aircraft icing spray system, and six degree of freedom missile motion simulator. Initiated acquisition of robotic chemical agent application system, airdrop test instrumentation, data collection and analysis instrumentation and data transmission equipment for extreme cold environments. Continued integration of instrumentation across autonomous vehicle control and test range traffic monitoring systems, acquisition of computer workstations for data processing and analysis, development of enhanced DT/OT on-board vehicle instrumentation, development of vehicle endurance/performance test data analyzers and development of a remote arming and detonating capability to support live fire vulnerability testing. Continued acquisition of electromagnetic radiation effects power amplifiers, fiber optic network links, digital data recorders, laser tracker, C4I instrumentation platform, target control software, range control instrumentation, range radios and radar upgrades. Initiated development of a high speed/high capacity wireless data communication network for C4I testing, development of an acoustic soldier-system instrumentation suite, laser target scoring system, gun chamber/gun pointing measurement system, aircraft icing spray system, and six degree of freedom missile motion simulator.
  Continued integration of instrumentation across test sites for centralized monitoring and control.

FY 2000 Accomplishments (Continued)

- 700 PROTOTYPE INSTRUMENTATION AND ADVANCED CONCEPTS. Provided quick reaction capability to respond to emergency requirements. Provided support for technical committees forging future instrumentation technology developments. Continued to develop Test Operations Procedures (TOPs) and International Test Operations Procedures (ITOPs) to ensure quality and consistency of test results throughout the Army and for international cooperative applications.
- 5108 HQ DTC/ATEC: Provided management support for VPG across the command. Conducted strategic planning and developed roadmaps to guide current and future programs. Provided command-level oversight and management support for the DTC and ATEC instrumentation programs. Technical support included requirements development, project prioritization, and execution of investment accounts for Small Business Innovative Research, Production Base Support, Army Test Technology and Sustaining Instrumentation, Major Test and Evaluation Investment, and the Central Test and Evaluation Investment Program. Provided management and support costs for direct interface with the T&E Executive Agent, management of needs and solutions calls for T&E Reliance oversight, and support to the Army principal of the Test Resources Advisory Group (TRAG). Provided administrative support for Local Area Network and TECNET, contracts, patents, symposia and conferences, exhibits and printing. Continued funding support to the Joint Program Office (JPO) as the Tri-Service Executive Agent for Test and Evaluation.

Total 32943

FY 2001 Planned Program

- 10987 CONTINUE SUPPORT OF VIRTUAL PROVING GROUND (VPG): Complete development of the physics-based helicopter simulation for Comanche to conduct T&E of the potential flight hazards associated with integration of new components into the aircraft. Complete development of 2-D visible and IR scenes to drive the scene projectors and signal injection interfaces in the Electro-Optics Target Acquisition, Electro-Optics Sensor Flight Evaluation and IR Simulation Test Acceptance test facilities. Complete acquisition and integration of computer workstations and software to conduct virtual testing. Initiate DTC-wide integration of terrain features, characteristics and functionality into system level models and simulations. Initiate DTC-wide integration of databases and common synthetic environment signatures into system level models and simulation. Initiate development of a simulation model to accurately measure shock and vibration characteristics of ammunition stored on-board howitzers. Continue development and integration of a DTC-wide HLA compliant architecture to integrate internal and external models, software algorithms, databases and synthetic environments. Continue funding of the cooperative Technology Program Annexes (TPA) with the Army Research Lab to support development and integration of fire control and ground vehicle simulations. Continue development of a standardization process to integrate various software components (synthetic environments, databases, data repositories, models, and interfaces) to support virtual testing. Continue development of system to merge telemetry, optics, radar, GPS, and TSPI data to support mission analysis of large missile and air defense system test data. Continue development of an architecture to rehost existing C4I legacy test tools to support Army testing and training requirements. Continue development of a test control simulation tool which integrates actual field instrumentation data with existing simulations and models to
conduct test range management, test setup, simulation model validation and test result validation. Continue development of validated model to replicate a chemical/biological point detection system.

FY 2001 Planned Program (Continued)

- 19619 INITIATE/CONTINUE DEVELOPMENT, ACQUISITION AND SUSTAINMENT OF CRITICAL TEST INSTRUMENTATION AND EQUIPMENT. Complete integration of a robotic agent application system into two existing test fixtures that support chemical testing on protective clothing fabrics. Complete acquisition of data loggers, radios, modems and sensor test equipment for extreme cold environment testing. Complete conversion of an optical tracker system to single station laser tracker. Complete development of instrumentation platform to remotely collect, analyze, transmit and log C4I message traffic. Continue development of the high speed/high capacity wireless data communication network to support data collection, analysis and reduction of C4I test data. Complete software upgrade of the Drone Formation Control System autopilot, control, navigation and guidance systems. Complete upgrade of the MPS-36 radars to control other down range instrumentation (such as Kineto Tracking Mounts and other short-range radars) near the impact point for artillery and smart munitions testing. Congressional Plus-up received to fund the Advanced Comprehensive Engineering Simulator (ACES) which upgrades the missile debris dispersion and analysis software. Initiate acquisition of aircraft high-speed digital camera, airborne video recorders, video cameras, telemetry link, signal

  conditioning equipment, ground control data processing equipment; replacement of obsolete chemical equipment used to conduct safety air monitoring, hazardous waste characterization, and sample analysis; and acquisition of test control and upgrade of portable Weibel tracking radars. Replace obsolete micro-organism fermentor/containment chamber. Acquire smoke density detectors for the fire extinguisher testing, aircraft icing instrumentation, analysis workstations at missile launch complexes and rocket motor digital real-time imaging system. Develop a prototype air-to-air munitions scoring system that supports helicopter turreted gun accuracy testing. Continue development of a high speed/high capacity wireless data communication network for C4I testing, development of an acoustic soldier-system instrumentation suite, laser target scoring system, gun chamber/gun pointing measurement system, aircraft icing spray system, and six degree of freedom missile motion simulator and airdrop test instrumentation. Continue integration of instrumentation across test sites for centralized monitoring and control, development of autonomous vehicle control and test range traffic monitoring systems,acquisition of computer workstations for data processing and analysis,

  development of enhanced DT/OT on-board vehicle instrumentation, development of vehicle endurance/performance test data analyzers and development of a remote arming and detonating capability to support live fire vulnerability testing. Continue acquisition of electromagnetic radiation effects power amplifiers, fiber optic network links, digital data recorders, laser tracker, C4I instrumentation platform, target control software, range control instrumentation and range radios.
- 1353 PROTOTYPE INSTRUMENTATION AND ADVANCED CONCEPTS. Provide quick reaction capability to respond to emergency requirements. Provide support for technical committees forging future instrumentation technology developments. Conduct methodology studies to improve test processes and determine future test capability requirements. Continue to develop TOPs and ITOPs to ensure quality and consistency of test results throughout Army and for international cooperative applications.

FY 2001 Planned Program (Continued)

- 3938 HQ DTC/ATEC: Provide management support for VPG across the command. Conduct strategic planning and develop roadmaps to guide current and future programs. Provide command-level oversight and management support for the DTC instrumentation program. Technical support includes requirements development, project prioritization, and execution of investment accounts for Small Business Innovative Research, Production Base Support, Army Test Technology and Sustaining Instrumentation, Major Test and Evaluation Investment, and the Central Test and Evaluation Investment Program. Provide management and support costs for direct interface with the T&E Executive Agent, management of needs and solutions calls for T&E Reliance oversight, and support to the Army principal of the TRAG. Provide administrative support for the Local Area Network, contracts, patents, symposia and conferences, exhibits and printing. Continue funding support to the JPO for Test and Evaluation as the tri-service Executive Agent for Test and Evaluation.

- 1018 Small Business Innovative Research/Small Business Technology Transfer Programs

Total 36915

FY 2002 Planned Program

- 10967 CONTINUE SUPPORT OF VIRTUAL PROVING GROUND (VPG): Complete development of a test control simulation tool which integrates actual field instrumentation data with existing simulations and models to conduct test range management, test setup, simulation model validation and test result validation. Develop DTC-wide requirements for visualization tools to collect and portray real-time simulations as well as support after action reviews. Initiate development of a general physics-based helicopter simulation to conduct test and evaluation of the potential flight hazards associated with integration of new components into the aircraft. Initiate development of a validated model to replicate remote detection systems. Initiate development of a range operations and control capability for integrated testing. Continue development and integration of a DTC-wide HLA compliant architecture to integrate internal and external models, software algorithms, databases and synthetic environments. Continue funding of the cooperative Technology Program Annexes (TPA) with the Army Research Lab to support development and integration of fire control and ground vehicle simulations. Continue development of a standardization process to integrate various software components (synthetic environments, databases, data repositories, models, and interfaces) to support virtual testing. Continue development of a system to merge telemetry, optics, radar, GPS, and TSPI data to support mission analysis of large missile and air defense system test data. Continue development of an architecture to rehost existing C4I legacy test tools to support Army testing and training requirements. Continue development of a validated model to replicate a chemical/biological point detection system. Continue DTC-wide integration of terrain features, characteristics and functionality into system level models and simulations. Continue DTC-wide integration of databases and synthetic environment signatures into
system level models and simulation. Continue development of a simulation model to accurately measure shock and vibration characteristics of ammunition stored on-board howitzers.
- 17471 INITIATE/CONTINUE DEVELOPMENT, ACQUISITION AND SUSTAINMENT OF CRITICAL TEST INSTRUMENTATION AND EQUIPMENT.

FY 2002 Planned Program (Continued)

Complete upgrade of the helicopter icing spray system to ensure that the spray level characteristics are identical to natural clouds. Complete development of a remote arming and detonating capability to support live fire vulnerability testing. Complete development of a six degree of freedom motion simulator to perform non-destructive missile testing. Complete acquisition of range control instrumentation. Initiate acquisition of chemical/biological data collection workstations; environmental simulation equipment for missile testing; a digital microwave communications system and network routers, switches, direct current power systems, and rectifiers to support range telecommunications and interface hardware and software between instrumentation systems and data transport systems. Initiate development of an optical data measurement system to analyze missile flight position data. Procure a six-degree of freedom control system that is capable of performing close loop vibration control testing for missiles. Upgrade existing video instrumentation control systems with improved data display, data logging, high-speed interface equipment and software to support multi-target missile testing. Acquire electro-mechanical components and antennas to replace obsolete equipment at the electromagnetic radiation effects test range. Acquire semiconductor test laboratory test equipment to support semiconductor testing. Continue acquisition of aircraft high-speed digital camera, airborne video recorders, video cameras, telemetry link, signal conditioning equipment, ground control data processing equipment; replacement of obsolete chemical equipment used to conduct safety air monitoring, hazardous waste characterization, and sample analysis; and upgrade of portable Weibel tracking radars. Continue development of a high speed/high capacity wireless data communication network for C4I testing, development of an acoustic soldier-system instrumentation suite, laser target scoring
system and gun chamber/gun pointing measurement system. Continue integration of instrumentation across test sites for centralized monitoring and control, development of autonomous vehicle control and test range traffic monitoring systems, acquisition of computer workstations for data processing and analysis, development of enhanced DT/OT on-board vehicle instrumentation and development of vehicle endurance/performance test data. Continue acquisition of electromagnetic radiation effects power amplifiers.

- 685 PROTOTYPE INSTRUMENTATION AND ADVANCED CONCEPTS. Provide quick reaction capability to respond to emergency requirements. Provide support for technical committees forging future instrumentation technology developments. Continue to develop TOPs and ITOPs to ensure quality and consistency of test results throughout Army and for international cooperative applications.
- 5136 HQ DTC/ATEC: Provide management support for VPG across the command. Conduct strategic planning and develop roadmaps to guide current and future programs. Provide command-level oversight and management support for the DTC instrumentation program. Technical support includes requirements development, project prioritization, and execution of investment accounts for Small Business Innovative Research, Production Base Support, Army Test Technology and Sustaining Instrumentation, Major Test and Evaluation Investment, and the Central Test and Evaluation Investment Program. Provide management and support costs for direct interface with the T&E Executive Agent, management of needs and solutions calls for T&E Reliance oversight, and support to the Army principal of the TRAG. Provide support for the Local Area Network, contracts, patents, symposia and conferences, exhibits and printing. Continue funding support to the JPO for Test and Evaluation under the tri-service Executive Agent for Test and Evaluation.

Total 34259

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	31439	33156	34678	0
Appropriated Value	31670	37256	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR/STTR	-769	0	0	0
c. Omnibus or Other Above Threshold Reduction	-118	0	0	0
d. Below Threshold Reprogramming	2273	0	0	0
e. Rescissions	-113	-341	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	-419	0
Current Budget Submit (FY 2002/2003 PB)	32943	36915	34259	0

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

June 2001

BUDGET ACTIVITY
6 - MANAGEMENT SUPPORT

PE NUMBER AND TITLE
0605604A - Survivability/Lethality Analysis

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		37153	36905	27794	0	0	0	0	0	0	0
670	EMERGING TECH SYSTEMS	5301	6272	4540	0	0	0	0	0	0	0
671	AIR DEF/MSL DEF SYSTEM	5224	5888	5369	0	0	0	0	0	0	0
672	AVIATION SYSTEMS	2528	2789	3002	0	0	0	0	0	0	0
675	ARMY SURVIVABILITY ANALYSIS & EVALUATION SUPPORT	14331	12240	4553	0	0	0	0	0	0	0
677	GROUND COMBAT SYSTEMS	5154	4449	4737	0	0	0	0	0	0	0
678	MUNITIONS SYSTEMS	4208	4810	5107	0	0	0	0	0	0	0
679	SOLDIER SYSTEMS	407	457	486	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This Program Element (PE) funds activities and functions to conduct objective and integrated survivability and lethality analyses (SLA) on systems of the Interim and Objective Forces of Army Transformation and other major and designated non-major Army systems as appropriate. The analyses quantify the effects of electronic warfare (EW) and ballistic battlefield threats and meteorological conditions on Army individual soldiers and systems. This PE also funds vulnerability assessments of digitized systems for Force XXI. The work is accomplished through threat research, theoretical and engineering analyses, signature measurements, modeling, simulations, laboratory experiments, and field investigations. Activities in progress include assessment of the effects of atmospherics, passive countermeasures, tactics, lasers, high-power microwave, electro-optical/radio frequency (EO/RF) jammers, electromagnetic environment effects (E3), information warfare (IW), decoys, and conventional ballistics on Army soldiers and systems. The PE work efforts provide U.S. Army decision makers, materiel and combat developers, system users, and independent evaluators critical soldier and system survivability analyses that quantify the soldier/system's survivability effectiveness in battlefield threat environments. Recommendations are provided to the materiel and combat developers on how to mitigate soldier/system deficiencies and enhance their survivability. This survivability/lethality engineering analyses is required to support the Army's vision to move to lighter more deployable systems while maintaining effectiveness. The analysis is required to properly down-select the appropriate mix of technologies for future platforms of the Transformed Forces. The proper mix of lethality and survivability provides the required force effectiveness for the Transformation Force. This PE funds civilian salaries, travel, development and maintenance of equipment and facilities, general management, administrative and contractor support required for program execution. The U.S. Army Research Laboratory (ARL) Survivability/Lethality Analysis Directorate (SLAD) conducts this effort.

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	34892	27248	27406	0
Appropriated Value	35138	37248	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-659	0	0	
c. Omnibus or Other Above Threshold Reductions	-103	0	0	
d. Below Threshold Reprogramming	2920	0	0	
e. Rescissions	-143	-343	0	
Adjustments to Budget Years Since FY2001 PB	0	0	388	
Current Budget Submit (FY 2002/2003 PB)	37153	36905	27794	0

Change Summary Explanation: Funding - FY 2001 Funds (+10000) - Congressional funding increase provides information operations vulnerability assessments and methodology testbed.

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605604A - Survivability/Lethality Analysis**	**670**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
670 EMERGING TECH SYSTEMS	5301	6272	4540	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project performs integrated survivability/lethality analyses for the category of systems which include Horizontal Technology Integration systems, Advanced Technology Demonstration initiatives, and proposed survivability enhancements to weapon platforms. Survivability deficiencies are identified, and recommendations are made to Program Executive Officers and Program Managers (PEOs/PMs) to provide hardening fixes early in program development. Work is accomplished through threat research, theoretical and engineering analyses, laboratory experiments, models, simulations, and field investigations. This effort also supports HQDA, independent evaluators, and PEOs/PMs with technical expertise in electronic warfare (EW), ballistics, and meteorology to conduct special studies and to support Test Integration Working Groups (TIWGs), weapon system program reviews, acquisition documentation reviews, and Government testers. This project also provides oversight of the Army's Electromagnetic Environmental Effects (E3) Program. Horizontal Technology Integration systems include Second Generation FLIR (2nd GEN FLIR), Battlefield Combat Identification System (BCIS), Global Positioning System (GPS), and Enhanced Position Location Reporting System (EPLRS). Advanced Technology Demonstration initiatives include Precision Guided Mortar Munition, Tactical Command and Control Protect (TCCP), and Direct Fire Lethality. Proposed survivability enhancements to weapon platforms include advanced armament technologies, defensive aide suites (DAS), missile countermeasure devices (MCD), emerging propellant technologies, advanced propulsion systems, advanced electronics, and improved spall liners in combat vehicles. To ensure survivability of the Army's Transformation force survivability analyses will be required that can address the new technologies for the Interim and Objective Forces and allow the optimum contribution of technologies that reduce signature, countermeasure threats, combinations of active and passive protection systems and protect the situation awareness and communications for a functionally dispersed set of systems to survive cooperatively. The system of systems (distributed functionality) for the Interim Force and Future Combat Systems and the notion of cooperative survivability adds complexity to these engineering level analyses required for the trade-offs.

FY 2000 Accomplishments

- 1431 Continued EW vulnerability investigations and analyses in support of integrated survivability and lethality analyses of advanced 2nd and 3rd generation emerging technology and horizontal technology applications. Prepared survivability analysis reports.
- 1400 Performed ballistic effects investigations and survivability/lethality analyses of candidate emerging technologies most influential on future system designs, including advanced armors (active protection systems), advanced armaments (electric armaments and electro-thermal chemical), advanced propellants, and advanced vehicle propulsion. Investigated Advanced Kinetic Energy Cartridge and Precision Guided Mortar Munition.
- 850 Continued vulnerability analysis of Army's digitized battlefield systems to radio frequency (RF) weapons. Identified possible countermeasure to threat RF weapons. Supported Army E3 program.

FY 2000 Accomplishments (Continued)

- 1620 Prepared a technical report that assessed the potential utility to Army users of the Joint Modeling and Simulation System (JMASS) objective systems as described in the JMASS "to be" technical reference architecture and prepared an assessment of the Army's stake in JMASS. Supported the Initial Operational Capability (IOC) Scenario Development effort. Developed a technical plan for the Army's IOC effort that demonstrates the functionality of JMASS to support Army needs.

Total 5301

FY 2001 Planned Program

- 1632 Perform ballistic effects investigations and survivability/lethality analyses of emerging technologies and support ballistic vulnerability and lethality studies of Armor and Munition ATDs.
- 869 Support analysis of Army's ability to protect modern commercial based tactical information networks, components and data though TCCP. Analyze digitized battlefield systems to radio frequency (RF) weapons. Support Army E3 program.
- 1636 Perform integrated EW survivability and lethality investigations and analyses of emerging technology systems, including performance predictions of new hit avoidance concepts.
- 314 Formulate initial design of an Information Operations Vulnerability Survivability Assessment (IOVSA) test bed. Demonstrate how an IOVSA test bed provides the Army with the capability to conduct rigorous and comprehensive IO vulnerability assessments.
- 1700 Construct an engineering model that can be used with Combined Arms and Support Task Force Evaluation Model (CASTFOREM) to demonstrate the Decision Related Structure (DRS) concept. The structure of how information is passed and used on the battlefield can be referred to as DRS and is inherent in every information infrastructure. The DRS represents an open, complex system whose dynamics must be understood to assess vulnerabilities of the IO threat.
- 121 Small Business Innovative Research/Small Business Technology Transfer Programs

Total 6272

FY 2002 Planned Program

•	900	Expand E3 predictive capabilities for new materials and out year threats. Continuously identify possible countermeasure to threat RF weapons. Support Army E3 program.
•	1874	Perform ballistic effects investigations and survivability/lethality analyses of emerging technologies and support ballistic vulnerability and lethality studies of Armor and Munition ATDs.
•	766	Perform integrated EW survivability and lethality investigations and analyses of emerging technology systems, including performance predictions of new hit avoidance concepts.
•	1000	Continue to support the Future Combat System (FCS) through IPT structure with focus on evaluation of the survivability of concepts. Provide analyses supporting technology development (APS, Advanced Armaments, Advanced Vehicle Propulsion Systems, Advanced Armor).
Total	4540	

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605604A - Survivability/Lethality Analysis**	**671**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
671 AIR DEF/MSL DEF SYSTEM	5224	5888	5369	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project provides the survivability/lethality analysis of U.S. Army air defense and missile defense systems to battlefield threats and recommends fixes to improve their battlefield survivability. The results are used: by each Project Manager (PM) and the Program Executive Officer (PEO) to direct weapon system development efforts and structure product improvement programs; by the independent evaluator when they provide system evaluations in support of milestone decisions; by the user to develop survivability/lethality requirements, doctrine and tactics; and by decision makers in formulating program/production decisions. Anti-Radiation Missile (ARM) Counter-Arm efforts assess threat technologies against Theater High Altitude Air Defense (THAAD) and National Missile Defense (NMD), PATRIOT, Medium Extended Air Defense System (MEADS), and Forward Area Air Defense - C21 (FAAD -C21) ground based sensors. Also funds salaries, travel, equipment/facilities, and management/administrative support needed to execute the program.

FY 2000 Accomplishments

- 2400 Conducted integrated survivability, lethality, vulnerability analyses for developmental U.S. Army air defense and missile defense systems, pre-planned product improvements of current systems, and recently fielded systems. Provided interim survivability reports. Recommended survivability enhancements. Supported NMD electronic countermeasures (ECM) analysis. Supported THAAD Radar ECM Field Investigations.
- 500 Conducted ballistic survivability/lethality analysis for U.S. Army air defense and missile defense systems.
- 1500 Supported Sentinel P3I program. Developed NMD integrated survivability/lethality assessment for deployment review.
- 500 Focal Plane Array Countermeasures (FPACM) (Partner: United Kingdom): Characterized and assessed advanced focal plane array missile seekers and developed ECM to defeat them through simulation, modeling and lab testing.
- 324 Electronic Countermeasures (ECM) Simulation - Common Set (Partner: Australia): Developed a common set of ECM simulations for investigating the EW effects on specific threat missile systems. Developed methodologies to evaluate ECM against infrared, electro-optical guided missiles to determine degradation.

Total 5224

FY 2001 Planned Program

- 2716 Provide strawman ECM parameters in support of PATRIOT post-MS III missile countermeasures experiments. Provide electronic counter- counter measure (ECCM) performance analysis of PACM risk reduction program. Conduct integrated survivability lethality vulnerability analyses for other developmental U.S. Army air defense and missile defense systems, pre-planned product improvements of current systems, and recently fielded systems. Provide interim survivability reports. Recommend survivability enhancements.
- 877 Analyze ECM experiments in support of PATRIOT post-MS III missile countermeasures experiments. Conduct THAAD Battle Management C4I EW Countermeasure Investigations during EMD.
- 1420 Conduct ballistic survivability/lethality analysis for U.S. Army air defense and missile defense systems.
- 225 Complete NMD integrated survivability/lethality assessment for deployment final review. Provide survivability support to PATRIOT post-MS III growth program. Complete survivability analysis for Sentinel P3I program.
- 325 Focal Plane Array Countermeasures (FPACM) (Partner: United Kingdom): Continue characterization and assessment of advanced focal plane array missile seekers and develop ECM to defeat them through simulation, modeling and lab testing.
- 227 Electronic Countermeasures (ECM) Simulation - Common Set (Partner: Australia): Develop a common set of ECM simulations for investigating the EW effects on specific threat missile systems. Develop methodologies to evaluate ECM against infrared, electro-optical guided missiles to determine degradation.
- 98 Small Business Innovative Research/Small Business Technology Transfer Programs

Total 5888

FY 2002 Planned Program

- 4415 Conduct integrated survivability, lethality, vulnerability analyses for developmental U.S. Army air defense and missile defense systems, pre-planned product improvements of current systems, and recently fielded systems. Systems to be addressed include NMD, THAAD, Patriot and short range air defense (SHORAD). Provide interim survivability reports. Recommend survivability enhancements
- 554 Focal Plane Array Countermeasures (FPACM) (Partner: United Kingdom): Continue characterization and assessment of advanced focal plane array missile seekers and develop ECM to defeat them through simulation, modeling and lab testing.
- 400 Electronic Countermeasures (ECM) Simulation - Common Set (Partner: Australia): Develop a common set of ECM simulations for investigating the EW effects on specific threat missile systems. Develop methodologies to evaluate ECM against infrared, electro-optical guided missiles to determine degradation.

Total 5369

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605604A - Survivability/Lethality Analysis**	**672**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
672 AVIATION SYSTEMS	2528	2789	3002	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Project investigates the Survivability/Lethality/Vulnerability (SLV) of Army aviation systems and Unmanned Aerial Vehicles (UAV) of Army Transformation to all battlefield threats. Aircraft SLV deficiencies are identified and hardening recommendations identified as appropriate. SLV analysis directly supports major decision milestone reviews, acquisition documentation, test and evaluation master plans, and cost/operational effectiveness analyses.

FY 2000 Accomplishments

- 726 Continued electronic warfare vulnerability assessment of Army aviation systems and aviation support equipment that are in development, undergoing P3I, or have been recently fielded, including RAH-66 Comanche, CH-47F Chinook and Tactical UAV. Provided electronic counter-countermeasures recommendations for Army rotorcraft and CM subsystems. Conducted E3 analysis for Suite of Infra-red counter measures (SIIRCM) system. Conducted laser jamming susceptibility analysis of SIIRCM system sensors and jam head. Initiated Information Warfare (IW) susceptibility assessment of SIIRCM and Comanche.
- 1702 Developed target descriptions and performed ballistic vulnerability analysis of four configurations of the developmental CH-47F Chinook and compared with the existing CH-47D. Continued support for CH-47F Live Fire Test and Evaluation (LFT&E) to include pre-shot predictions, test conduct on operating aircraft, damage assessments, post-shot analyses, and input to independent evaluation. Assisted in ballistic testing of Comanche prototype components and sub-systems. Initiated LFT&E survivability support for UH-60M Blackhawk modernization program.
- 100 Provided infrared and radar signature analysis data in support of Comanche MSII decision. Conducted comprehensive analysis of Comanche NBC survivability. Performed MANPRINT Solder Survivability (SSv) analyses and prepared domain reports for Comanche and Tactical UAV systems.

Total 2528

FY 2001 Planned Program

•	929	Continue electronic warfare vulnerability assessment for Comanche, CH-47F, Tactical UAV and aviation survivability equipment (SIIRCM, SIRFC) that are in development or undergoing P3I. Perform IW and communication jamming susceptibility assessment of Tactical UAV.
•	1824	Complete ballistic vulnerability analysis of four configurations of the CH-47F and compare with the CH-47D. Assist Comanche developer with ballistic vulnerability design/development support tests to guide final system design. Continue support CH-47F LFT&E (preshot predictions, conduct tests, damage assessments, post-shot analyses, and input to independent evaluation). Initiate LFT&E of UH-60M LFT&E to include selected ballistic vulnerability analysis and experiments.
•	36	Small Business Innovative Research/Small Business Technology Transfer Programs
Total	2789	

FY 2002 Planned Program

•	1494	Continue electronic warfare vulnerability assessment for Comanche, CH-47F, and UH-60M aircraft
•	1508	Continue UH-60M LFT&E support (pre-shot predictions, test conduct, damage assessments, post-shot analyses, and input to independent evaluation)
Total	3002	

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605604A - Survivability/Lethality Analysis**	**675**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
675	ARMY SURVIVABILITY ANALYSIS & EVALUATION SUPPORT	14331	12240	4553	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Supports survivability analysis, information warfare, and information operations of Army communications, electronic equipment and Digitized Force against friendly and enemy threats. Provides field threat environment support for Electronic Warfare Vulnerability Analysis (EWVA). Analyzes vulnerabilities of foreign threat weapons and command, control, communications, computers and intelligence (C4I) and Intelligence Electronic Warfare (IEW) systems to U.S. Army EW systems. Provides threat weapon electronic design data to countermeasure developers and technical capability information to the intelligence community. Supports Army initiatives in vulnerability reduction of C4I/IEW systems against battlefield threats, including information warfare. Provides analysis for understanding potential vulnerabilities of digitized Force XXI developmental systems. Supports Army Warfighting Experiments and associated Information Operations Vulnerability Assessments for Force XXI Architecture. Supports vulnerability analysis of situational awareness data of the Transformation Force. The reduced ballistic protection in systems of the Interim and Objective Forces compared to older heavily armored systems will increase the reliance on situational awareness for platform survivability.

FY 2000 Accomplishments

- 2515 Conducted integrated electronic and NBC effects survivability analysis on select U.S. Army command and control systems. Conducted information operations vulnerability analysis. These efforts supported the Advanced Field Artillery Tactical Data System, Common Hardware and Software, Maneuver Control System, FAAD-C2I, All Source Analysis System, Combat Service Support Control System, and Battle Command, Brigade and Below(FBCB2) (Applique).
- 1871 Conducted integrated electronic and information operations vulnerability analysis for U.S. Army communications systems on Mobile Subscriber Equipment, Single Channel Anti-jam Man Portable radio, Secure Mobile Anti-jam Reliable Tactical Terminal, the Near Term Digital Radio, ARC-220, and Single Channel Ground/ Airborne Radio System (SINCGARS) Advanced Improvement Program (ASIP), Enhanced Position Location Reporting System - Very High Speed Integrated Circuit (EPLR-VHSIC), Spitfire, Global Broadcast System (GBS), and Integrated System Control (ISYSCON).
- 1945 Conducted integrated electronic and ballistic effects survivability analysis for U.S. Army IEW systems - Battlefield Combat Identification System (BCIS), Combat ID Dismounted Soldier (CIDDS), enhanced Firefinder radar, and Prophet.

FY 2000 Accomplishments (Continued)

- 5000 Expanded the current information warfare vulnerability assessment program to determine exploitable weakness in the First Digitized Division (FDD) and other digitized forces and recommended mitigating solutions. Focused on components of the FDD and determined limitations of system performance in information warfare (IW) threat environment. Created partial simulation of FDD decision processes, updated information warfare vulnerability database, and conducted vulnerability analyses of Tactical Internet components to radio frequency directed energy weapons (RFDEW).
- 3000 Conducted integrated chemical/biological/nuclear/atmospheric effects survivability analysis for FBCB2, Standard Integrated Command Post Shelter (SICPS), All Source Analysis System (ASAS), ISYSCON, Common Hardware/ Software-2 (CHS-2), Single Channel Anti- Jam Manportable (SCAMP) Block II, SHF Tri-band Advanced Range Extension Terminal - Universal Modem System (STAR-T/UMS), Common Ground Surveillance System (CGS) [Joint Surveillance Target Attack Radar System (JSTARS)], and Firefinder (TPQ 47).

Total 14331

FY 2001 Planned Program

- 1153 Conduct integrated electronic and information operations effects survivability analysis for U.S. Army command and control systems. Conduct information operations vulnerability analysis. This effort supports the Advanced Field Artillery Tactical Data System, Common Hardware and Software, Maneuver Control System, FAAD-C2I, All Source Analysis System, Combat Service Support Control System, FBCB2 (Applique), and Advanced Missile Defense Warning System.
- 1487 Conduct integrated electronic and information operations survivability analysis for U.S. Army communications systems such as Warfighter Integrated Network- Terrestrial, Single Channel Anti-jam Man Portable radio, Secure Mobile Anti-jam Reliable Tactical Terminal, the Near Term Digital Radio, Joint Tactical Radio System, and SINCGARS ASIP, EPLR-VHSIC, SPITFIRE, GBS, and ISYSCON.
- 750 Expand the current information warfare vulnerability assessment program to determine exploitable weakness in the Defense Information Infrastructure Common Operating Environment
- 650 Conduct integrated electronic and NBC effects survivability analysis for U.S. Army IEW systems such as the Enhanced Firefinder radar, Navigational Warfare Ground Positioning System (NAVWAR), Defense Advanced GPS Receivers (DAGR) and Prophet. Conduct information operations vulnerability analysis for these systems.
- 2500 Expand IOVSA system assessments beyond electronic warfare, malicious codes and hackers to include survivability of the First Digitized Corp (FDC), Brigade Combat Team, and other Army systems to directed energy and unintentional radiation/emissions deterrence.

FY 2001 Planned Program (Continued)

- 5414 Establish a new set of IOVSA analytical tools, techniques and methodologies to address the shortfall of current tools that focus only on the functionality of a system. Improved tools and techniques will provide a rigorous approach to consider the impact of the threat not only on the physical system but also on decisions being made with the information that the system is providing. New tools will incorporate advances in combinatorics and logic to provide the most effective holistic vulnerability analysis.
- 286 Small Business Innovative Research/Small Business Technology Transfer Programs

Total 12240

FY 2002 Planned Program

- 1564 Conduct limited integrated electronic and information operations effects survivability analysis for U.S. Army command and control systems. Conduct information operations vulnerability analysis. This effort supports the Advanced Field Artillery Tactical Data System, Common Hardware and Software, Maneuver Control System, FAAD-C2I, All Source Analysis System, Combat Service Support Control System, and Advanced Missile Defense Warning System.
- 1898 Conduct integrated electronic and information operations survivability analysis for U.S. Army communications systems such as Warfighter Integrated Network- Terrestrial, Single Channel Anti-jam Man Portable radio, the Near Term Digital Radio, Joint Tactical Radio System, and SINCGARS ASIP, EPLR-VHSIC, GBS, and ISYSCON.
- 545 Conduct integrated electronic and ballistic effects survivability analysis for U.S. Army IEW systems such as the BCIS, CIDDS, enhanced Firefinder radar, and Prophet. Conduct information operations vulnerability analysis for these systems.
- 546 Continue information warfare vulnerability assessment program to further determine exploitable weakness in the Digitized Forces (FDC) and to recommend mitigating solutions. Focus on components of the FDD/FDC and determines the limitations of system performance in information warfare (IW) threat environment. Update of information warfare vulnerability database, and perform vulnerability analyses of selected Tactical Internet components to radio frequency directed energy weapons (RFDEW).

Total 4553

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605604A - Survivability/Lethality Analysis**	**677**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
677 GROUND COMBAT SYSTEMS	5154	4449	4737	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Project investigates the survivability and vulnerability of ground systems of the Interim and Objective Force for Army Transformation and other Army ground combat systems to battlefield threats. Analysis will support Army Transformation requirements, test and evaluation master plans, cost/operational effectiveness analysis, and major milestone decisions.

FY 2000 Accomplishments

- 1224 Continued analytical support for the restructured Crusader design, development and fabrication program.
- 1570 Supported the Future Combat Systems (FCS) Technical-IPT through attendance at government and contractor meetings, reviewed and provided feedback on government planning documents and contractor concepts from a survivability perspective. Developed approach to supporting survivability evaluation of FCS. Briefed FCS IPTs, PM and contractor teams on ARL/SLAD capabilities, lessons learned and approach to technical assessment of survivability concepts.
- 603 Completed Bradley A3 LFTE damage assessment, laser susceptibility assessment, NBC Contamination Survivability assessment, and initial phase of Information Operations vulnerability assessment
- 290 Supported Abrams SEP Configuration Live Fire Test and Evaluation (LFTE) by providing pre-shot predictions.
- 100 Completed Grizzly program termination activities.
- 100 Supported Future Scout and Cavalry System (FSCS) ballistic survivability TRADOC modeling effort. Supported FSCS Ballistic survivability AMSAA Item Level Performance Analysis.
- 57 Conducted Command and Control Vehicle (C2V) program termination activities.
- 1100 Provided support to the Initial Combat Brigade Team (IBCT) Platform Performance Demonstration. Conducted ballistic survivability analyses in support of the IBCT. Supported the Bid Sample Event and Source Selection of the Interim Armored Vehicle (IAV) for the IBCT. Provided ballistic and non-ballistic input to Independent Evaluation in support of IAV Milestone II.
- 110 Conducted NBC Contamination Survivability analysis on the Bradley Fire Support Team (BFIST) Vehicle/Striker.

Total 5154

FY 2001 Planned Program

- 827 Continue analytical support for the restructured Crusader design, development and fabrication program. Continue the electronic warfare vulnerability and information operations assessment for Crusader.
- 1000 Initiate Interim Armored Vehicle (IAV) LFT&E support for the first group of IAV variants/configurations (shot predictions, damage assessments, and post-shot analyses). Initiate non-ballistic survivability/lethality analysis for the first group of IAV variants/configurations.
- 1020 Support Abrams SEP Configuration LFT&E (damage assessments, post-shot analyses and input to Independent Evaluation).
- 989 Conduct initial High Mobility Rocket System (HIMARS) vulnerability assessments.
- 545 Conduct Bradley A3 SSv and provide inputs for System Evaluation Report. Continue the electronic warfare vulnerability and information operations assessment for Bradley A3.
- 68 Small Business Innovative Research/Small Business Technology Transfer Programs

Total 4449

FY 2002 Planned Program

- 1368 Support FCS program decision in May 2002 through meeting attendance and documentation and briefings of survivability evaluation results and recommendations. Support FCS program through SSEB process for second phase of program.
- 1021 Continue Abrams SEP Configuration Assessments in the areas of laser susceptibility and information assurance.
- 2348 Continue to support IAV LFT&E for the first set of variants/configurations (damage assessments, post-shot analyses and input to Independent Evaluation). Initiate LFTE support for the second group of IAV variants/configurations (shot predictions, damage assessments, post-shot analyses and input to Independent Evaluation). Complete non-ballistic survivability/lethality analysis for the first group of IAV variants/configurations. Initiate analyses for the second group of IAV variants/configurations. Provide input to Independent Evaluation for the initial IAV Milestone III decision.

Total 4737

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605604A - Survivability/Lethality Analysis**	**678**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
678 MUNITIONS SYSTEMS	4208	4810	5107	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project funds the investigation of the lethality/vulnerability of Army fire support weapons (smart and conventional) to battlefield threats. Support Army Transformation to a highly effective mobile force depending on symmetry between Survivability, Lethality, Mobility, MANPRINT, Deployability, and Sustainability. The challenge of the Army Transformation is to examine holistically the contribution of platforms to force effectiveness. This project provides lethality data of potential systems in the Interim and Objective Forces to achieve symmetric mix of force effectiveness. The analysis is integrated across all battlefield threats (i.e., conventional ballistic, electronic warfare, and directed energy). This work is accomplished through theoretical and engineering analyses, signature measurements, modeling, simulations, laboratory experiments, and field investigations.

FY 2000 Accomplishments

- 2103 Conducted electronic warfare vulnerability assessments for advanced developmental U.S. Army conventional and smart munition systems and associated pre-planned product improvement programs. Conducted electronic warfare vulnerability analysis/support for U.S. Army munition systems - Army Tactical Missile System (ATACMS) with smart payloads such as BAT/BAT P3I, TOW Fire and Forget, SADARM, and Tank Extended Range Munition (TERM).
- 1610 Conducted ballistic survivability/lethality analysis for U.S. Army munition systems to include BAT/BAT P3I, Guided MLRS and M829 and associated pre-planned product improvement programs.
- 495 Provided integrated survivability/lethality analyses to support munition systems program decision milestones during FY 2000.

Total 4208

FY 2001 Planned Program

•	3022	Conduct electronic warfare vulnerability assessments for developmental U.S. Army munition systems such as ATACMS with smart payloads such as: BAT P3I, TOW Fire and Forget, Wide Area Munition (WAM) product improvement program (PIP) and TERM. Conduct obscurant and atmospheric effects survivability analysis for U.S. Army munition systems.
•	1215	Conduct ballistic survivability/lethality analysis for U.S. Army munition systems to include BAT P3I, TERM, LOSAT, Guided MLRS and M829.
•	507	Provide integrated survivability/lethality analyses to support scheduled munition systems program decision milestones during FY 2001.
•	66	Small Business Innovative Research/Small Business Technology Transfer Programs
Total	4810	

FY 2002 Planned Program

•	3022	Conduct electronic warfare vulnerability assessments for developmental U.S. Army munition systems such as ATACMS with smart payloads such as: BAT P3I, TOW Fire and Forget, Modernized HELLFIRE/Common Missile, WAM PIP and TERM. Conduct obscurant and atmospheric effects survivability analysis for U.S. Army munition systems.
•	1513	Conduct ballistic survivability/lethality analysis for U.S. Army munition systems to include BAT P3I, TOW Fire and Forget, TERM, LOSAT, Guided MLRS, Modernized HELLFIRE/Common Missile, WAM PIP and M829.
•	572	Provide integrated survivability/lethality analyses to support scheduled munition systems program decision milestones during FY 2002.
Total	5107	

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605605A - DOD High Energy Laser Sys Test Fac (HELSTF)**	**E97**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
E97 DOD HELSTF	29994	37177	14570	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The High Energy Laser Systems Test Facility (HELSTF) provides a one-of-a-kind, broad based high energy laser (HEL) RDTE capability located at White Sands Missile Range (WSMR), New Mexico, in support of Tri-Service DoD HEL research and development, and damage, vulnerability, propagation, and lethality laser testing. The HELSTF's laser development support capabilities include a certified laser test range, a fully integrated laser support facility, an extensive array of fully instrumented test sites, the Sea Lite Beam Director (SLBD), the Mid-Infrared Advanced Chemical Laser (MIRACL), the Laser Device Demonstration (LDD), and the Low Power Chemical Laser (LPCL), and support for the Pulsed Laser Vulnerability Test System and the Tactical High Energy Laser (THEL) Advanced Concept Technology Demonstration. This multiple use facility supports testing of laser effects for targets ranging from scaled laboratory up through full scale flying target. In FY 2001, the HELSTF will also add a 10KW Solid State Heat Capacity Laser (SSHCL) testbed. In support of the SMDC Directed Energy Center of Excellence (DE CoE), a comprehensive lethality/propagation (L&P) test plan has been initiated to compare chemical vice solid state lasers for potential weapon developments to support the Army Transformation. This testing will produce a physics-level lethality database for further development of a military utility analysis to add HELs to force-on-force models and simulations. Army Transformation forces will require highly mobile HELs that can complement current Air Defense (AD) weapons and can provide protection from rockets, mortars, artillery, and tactical unmanned aerial vehicles. No current AD system can defeat these significant and growing threats. HELs and low power lasers also provide potential space control capabilities, which must be tested and will support Army deployed forces. HELSTF's transformation supports the S&T thrust of the Army Transformation Campaign Plan (TCP). This modernization will create a more efficient and versatile HEL T&E facility, which will support development and fielding of new materiel solutions for the Interim and Objective Force. This activity supports the objective transition path of the TCP.

FY 2000 Accomplishments

- 13679 Performed operation, maintenance and base operations support functions in support of the Army, Department of Defense and other agencies conducting high energy laser systems concept development studies and test and evaluation on candidate high energy laser weapons systems (Tactical High Energy Laser, Air Force Airborne and Space-Based Laser, and other laser programs, tracking for Ballistic Missile Defense Organization, and live-fire test programs). Upgraded HELSTF infrastructure to improve safety devices and the control system for the SLBD

FY 2000 Accomplishments (Continued)

- 9633 Stoodup the Directed Energy (DE) Center of Excellence; to include, the development of a solid state laser (SSL) pulse shaper, initiated a comprehensive lethality/propagation test program, continued development of the 10KW SSHCL device at Lawrence Livermore, prepared for integration of the SSHCL testbed at HELSTF, conducted a force-on-force modeling and simulation review, participated in wargames and experiments to analyze military utility of potential future laser weapons, developed HELSTF transformation plan, and initiated a detailed analysis of Electro-Chemical chemical Oxygen Iodine Laser (COIL) technology.
- 6682 Continued Solid State Laser (SSL) Program - Tested a flash-pumped three disk module SSL with full characterization. Initiated integration of laser diodes on single subscale disk to form diode pumped disk testbed.

Total 29994

FY 2001 Planned Program

- 16875 Perform operation, maintenance and base operations support functions in support of the Army, DoD and other agencies conducting high energy laser systems concept development studies and test and evaluation on candidate high energy laser weapons systems (THEL, its follow-on, mobile THEL, other laser programs, tracking, and live-fire test programs). Conduct small scale lethality testing as well as propagation experiments using the 10KW flash lamp pumped SSHCL to support the L&P test program. Continue military utility analysis, fully integrate the SSHCL 10KW testbed, continue safety control system upgrades to integrate other HEL technologies, and initiate development of a mobile diagnostic capability to support HEL testing on other parts of WSMR or at other DoD test facilities.
- 19227 Continue Solid State Laser (SSL) Program - Test laser diode pumped single subscale disk. Integrate laser diodes onto two full-scale disks. Diodes will be lensed at 45 degrees in compact architecture. This limited gain system will be fully characterized. Laser diodes will be produced at volume and will be lensed. Additional technology supporting mobilized prototype will be advanced including large scale crystal development, compact pulsed power, and thermal control. $5M will be used to produce the laser diodes. $3M will be used by the Electro Optics Center to test and lense the laser diodes.
- 1075 Small Business Innovative Research/Small Business Technology Transfer Programs

Total 37177

FY 2002 Planned Program

- 14570 Perform operation, maintenance and base operations support functions in support of the Army, DoD and other agencies conducting high energy laser systems concept development studies and test and evaluation on candidate high energy laser weapons systems (THEL, mobile THEL, Airborne Tactical Laser (ATL), ZEUS, Air Force Airborne and Space-Based laser, and other Laser programs, tracking, and live-fire test programs). Continue lethality testing as well as propagation experiments using the 10KW flash lamp pumped SSL in accordance with the L&P test program. Continue military utility analysis (to include participation in JFCOM Millennium Challenge 02), continue safety and control system upgrades to integrate other HEL technologies, and development of a mobile diagnostic capability.

Total 14570

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	30803	14521	14306	0
Appropriated Value	31230	37521	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-809	0	0	0
c. Omnibus or Other Above Threshold Reduction	-125	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-302	-344	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	264	0
Current Budget Submit (FY 2002/2003 PB)	29994	37177	14570	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605606A - Aircraft Certification**	**092**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
092 AIRCRAFT CERTIFICATION	2969	3171	3582	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This program performs all engineering functions essential for certifying the airworthiness of assigned Army aircraft. Performs safety-of-flight investigations/assessments and issues messages to the field. Manages/executes the Army's Aeronautical Design Standards (ADS) Program; ADS is a continuously evolving process incorporating revisions for each change to the standard design of an aircraft system. Manages airworthiness approval of new vendor qualification/testing on fielded aircraft and material changes for all assigned Army aircraft systems. Provides airworthiness-engineering support to the Army Aviation Program Executive Office (PEO) and the Army Aviation and Missile Command Program/Project/Product Manager requirements for major development/modification and any future system/subsystems. Manages the test and evaluation process to support airworthiness qualification of developmental and fielded aircraft systems. This project funds activities required for general research and development support of aircraft qualifications. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 980 Executed technical and airworthiness (AW) qualification mission for PEO Aviation/force modernization aircraft systems.
- 964 Conducted safety-of-flight (SOF) investigations/assessments to include PEO Aviation/force modernization aircraft systems.
- 149 Executed the Army Aeronautical Design Standards Program.
- 726 Provided continuing engineering support for technology upgrades to PEO Aviation/force modernization aircraft systems.
- 150 Provided test management capability for PEO Aviation Program/Project/ Product Managers.

Total 2969

FY 2001 Planned Program

- 1016 Manage/execute technical AW qualification missions for PEO Aviation/force modernization aircraft systems.
- 960 Continue to ensure SOF investigations/assessments to include PEO Aviation/force modernization aircraft systems.
- 159 Manage/execute the Army Aeronautical Design Standards Program.
- 772 Provide continuing engineering support for technology upgrades to PEO Aviation/force modernization aircraft systems.
- 233 Continue to provide test management capability for PEO Aviation Program/Project/Product Managers.
- 31 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 3171

FY 2002 Planned Program

- 1144 Manage/execute technical and AW qualification mission for PEO Aviation/force modernization aircraft systems.
- 1131 Continue to ensure SOF investigations/assessments to include PEO Aviation/force modernization aircraft systems.
- 175 Manage/execute the Army Aeronautical Design Standards Program.
- 852 Provide continuing engineering support for technology upgrades to PEO Aviation/force modernization aircraft systems.
- 280 Continue to provide test management capability for PEO Aviation Program/Project/Product Mangers.

Total 3582

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605606A - Aircraft Certification**	**092**

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	3010	3200	3533	0
Appropriated Value	3021	3200	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-41	0	0	0
c. Omnibus or Other Above Threshold Reductions	-6	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-5	-29	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	49	0
Current Budget Submit (FY 2002/2003 PB)	2969	3171	3582	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605702A - Meteorological Support to RDTE Activities**	**128**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
128 MET SPT TO DTC ACTIVITY	6751	6864	6890	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

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

FY 2000 Accomplishments

- 1473 Provided indirect costs for generating weather forecasts, severe weather warnings/advisories, staff meteorological services, and atmospheric measurements in support of Army/DoD tests and projects at 10 Army sites/test ranges and, when required, to sites other than the Army's test ranges.

FY 2000 Accomplishments (Continued)

- 4284 Modernized operational equipment to meet customer requirements for meteorological support. Began installation and maintained Major Range Test Facility Base (MRTFB) Four-Dimensional Weather (4DWX) System at YPG and completed 4DWX installation at ATC. 4DWX is a leading-edge, predictive meteorology system that synthesizes national and real-time range meteorology data sets into very high-resolution analyses and forecasts (to 1.1Km resolution) in time and space. This capability leads the science of meteorology internationally, and provides unparalleled meteorological test support. Sustained the Mobile Meteorological Support Systems (MOMSS). Installed and evaluated auto-nowcasting (automated and precise forecasting of weather conditions starting "now" and continuing for one hour into the future) at ATC. Began integration of meteorological instrumentation into MRTFB 4DWX Weather System at DPG.
- 994 Provided program management for meteorological support to the research, development, test and evaluation community and technical review/assistance to ranges and meteorological teams. Provided weather forecast support systems/data - continued development of meteorological data sets for environmental modules to virtual testing.

Total 6751

FY 2001 Planned Program

- 1546 Provide indirect costs for generating weather forecasts, severe weather warnings/advisories, staff meteorological services, and atmospheric measurements in support of Army/DoD tests and projects at nine Army sites/test ranges (support of Tooele Army Depot no longer included in this PE)and alternative test sites as required.
- 4128 Modernize operational equipment to meet customer requirements for meteorological support. Sustainment of the MOMSS and atmospheric profilers. Complete integration of meteorological instrumentation into MRTFB 4DWX Weather System at DPG. Develop and install the fifth generation mezoscale meteorological code (MM5) as the basic component of the real time four dimensional data assimilation package at DPG and YPG. Complete MRTFB 4DWX Weather System installation at YPG and provide system sustainment. Install NOAAPort/4DWX "Light" (reduced capability) at CRTC. Evaluate solid state Sonic Detection and Ranging as replacement for meteorological towers.
- 1034 Provide program management for meteorological support to the research, development, test and evaluation community and technical review/assistance to ranges and meteorological teams. Provide weather forecast support systems/data - improve/modify/increase data sets for environmental modules to virtual testing.
- 156 Small Business & Innovation Research (SBIR)/Small Business & Technology Program (STTR)

Total 6864

FY 2002 Planned Program

- 1449 Provide indirect costs for generating weather forecasts, severe weather warnings/advisories, staff meteorological services, and atmospheric measurements in support of Army/DoD tests and projects at nine Army sites/test ranges and alternative test sites, as required.
- 4366 Modernize operational equipment to meet customer requirements for meteorological support. Evaluate Coherent Laser Light Detection and Ranging (LIDAR) at WSMR. Develop and install, using MM5 as the basic component, a real time four dimensional data assimilation package at WSMR and ATC. Upgrade and sustain the MOMSS and atmospheric sounders/profilers to increase automation, fidelity and reliability. Begin integration of meteorological instrumentation into MRTFB 4DWX Weather System at WSMR and YPG. Install NOAAPort/4DWX "Light" at EPG. Begin development of Globally Relocatable 4DWX at DPG.
- 1075 Provide program management for meteorological support to the research, development, test and evaluation community and technical review/assistance to ranges and meteorological teams. Provide weather forecast support systems/data - improve/modify/increase data sets for environmental modules to virtual testing.

Total 6890

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	6823	6927	6856	0
Appropriated Value	6843	6927	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-72	0	0	0
c. Omnibus or Other Above Threshold Reduction	-11	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-9	-63	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	34	0
Current Budget Submit (FY 2002/2003 PB)	6751	6864	6890	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605706A - Materiel Systems Analysis**	**541**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
541 MATERIEL SYS ANALYSIS	10234	8657	8884	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This program element funds the Army Materiel Systems Analysis Activity's (AMSAA) primary mission of materiel systems analysis. AMSAA is the Army's center for item/system level performance analysis and certified data. In accomplishing its materiel systems analysis mission, AMSAA analyzes the performance and combat effectiveness of conceptual, developmental, and existing systems. Unique models and methodologies have been developed to predict critical performance variables, such as, weapon accuracy, target acquisition, rate of fire, probability of inflicting catastrophic damage, and system reliability. AMSAA is responsible for the generation of these performance and effectiveness measures and for ensuring their standard use across Army and Joint studies. AMSAA conducts and supports various systems analyses, such as: analyses of alternatives (AoAs), system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, and requirements analyses. These analyses are used by Army and Department of Defense (DoD) leadership in making acquisition, procurement, and logistics decisions in order to provide quality equipment and procedures to the soldiers. AMSAA's modeling and simulation (M&S) capabilities support the development, linkage, and accreditation of live, virtual, and constructive simulations, and provide unique tools that support systems analysis of individual systems and the combined-arms environment. AMSAA is the Army's executive agent for the verification, validation, and accreditation (VV&A) of item level performance models. In this role, AMSAA assists model developers with the development and execution of verification and validation (V&V) plans to ensure new models and simulations faithfully represent actual systems. AMSAA also develops reliability, availability, and maintainability methodologies for use across the Army. As the Army's center for materiel systems analysis, AMSAA provides the technical capability to support Army and DoD decision-makers throughout the entire materiel acquisition process in responding to analytic requirements across the full spectrum of materiel system commodity areas. AMSAA's analyses are critical in supporting Army Transformation decisions. This PE/Project funds the salaries of civilian employees assigned to the materiel systems analysis mission.

FY 2000 Accomplishments

FY 2000 Accomplishments (Continued)

- 8734 Developed and certified system performance data for U.S. and foreign systems used to support Army and Joint analysis of alternatives (AoAs), force structure studies, and theater level studies. Examples of programs where decisions were influenced: Initial Brigade Combat Team/Interim Armored Vehicles, Future Scout and Cavalry System (FSCS), Comanche, and Crusader. Analyzed the performance and combat effectiveness of materiel systems and technology base programs in support of HQDA, AMC, PEOs/PMs and R&D Centers. Included are conduct of and support to: AoAs, system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, requirements analyses, technology insertion, and technology base analyses. Examples of programs where decisions were influenced: Digitization Brigade and Below, Land Warrior, Future Combat System (FCS), FSCS, and Comanche. AMSAA also developed, modified, and maintained item/system level methodologies, models, and simulations to assist in the conduct of systems analysis. Examples include: Ground Wars Model, target acquisition methodology, Active Protection System/Counter Active Protection System (APS/CAPS) methodology and model development, infantry close combat analysis tool, and physics of failure. AMSAA performed verification and validation of item level performance models and methodologies. AMSAA's full spectrum analytic capability supported the Army's thrust of creating/structuring a force that is more lethal and survivable and can be deployed more quickly than today's Army. Funding supported DA civilians to include salary, benefits, and all other support costs (e.g., training, TDY, etc.).
- 1500 Accelerated development of improved active protection system/counter active protection system analytical tools. Current combat models do not provide adequate representations of most other-than-armor survivability systems. These other-than-armor systems are critical in allowing Army systems to weigh less, yet still be survivable. Another analytical void that currently exists is the ability to accurately portray performance and effectiveness of Army materiel and soldiers during Military Operations in Urban Terrain (MOUT). The funds accelerated AMSAA's current methodology and modeling efforts to fill this void. Another effort pursued was "ultra-reliability". This effort begins to provide the analytical underpinnings for determining what is needed to have failure-free periods for deployed equipment. The focus was on electronics and identified high-payoff candidates, considering cost and potential for improvement given the status of various technologies. AMSAA conducted a performance and effectiveness analysis addressing particular lethality and survivability options for various Light Armored Vehicle (LAV) and Armored Gun System (AGS) alternatives. AMSAA also conducted analyses examining the area of logistics footprint reduction. Critical information was provided to key Army decision-makers within DA, TRADOC, and AMC. Funding supported DA civilians to include salary, benefits, and all other support costs (e.g., training, TDY, etc.).

Total 10234

FY 2001 Planned Program

- 8598 Develop and certify system performance data for U.S. and foreign systems to be used to support Army and Joint AoAs, force structure studies, and theater level studies. Examples of programs where decisions will be influenced: FCS, Crusader, and Comanche. Analyze the performance and combat effectiveness of materiel systems and tech base programs in support of HQDA, AMC, PEOs/ PMs and R&D Centers. Included are conduct of and support to: AoAs, system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, requirements analyses, technology insertion, and technology base analyses. Examples of programs where decisions will be influenced: FCS, Crusader, and Comanche. Develop, modify, and maintain item level methodologies, models, and simulations to be used in the conduct of systems analysis. Examples include: aviation performance and effectiveness modeling, target acquisition methodology improvements, integrated casualty estimation methodology, and dismounted infantry modeling. Perform verification and validation of item level performance models and methodologies. Funding will support DA civilians to include salary, benefits, and all other support costs (e.g., training, TDY, etc.).
- 59 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 8657

FY 2002 Planned Program

- 8884 Develop and certify system performance data for U.S. and foreign systems to be used to support Army and Joint AoAs, force structure studies, and theater level studies. Key decisions relative to major programs will be supported. Analyze the performance and combat effectiveness of materiel systems and tech base programs in support of HQDA, AMC, PEOs/ PMs and R&D Centers. Included are conduct of and support to: AoAs, system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, requirements analyses, technology insertion, and technology base analyses. Develop, modify, and maintain item level methodologies, models, and simulations to be used in the conduct of systems analysis. Perform verification and validation of item level performance models and methodologies. Funding will support DA civilians to include salary, benefits, and all other support costs (e.g., training, TDY, etc.).

Total 8884

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	8783	8737	6673	0
Appropriated Value	8796	8737	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-49	0	0	0
c. Omnibus or Other Above Threshold Reductions	-7	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-6	-80	0	0
Adjustment to support Army Transformation	1500	0	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	2211	0
Current Budget Submit (FY 2002/2003 PB)	10234	8657	8884	0

Change Summary Explanation: Funding - FY 2000: AMSAA was provided an additional 1500 to conduct additional performance and effectiveness analyses in support of the Army Transformation. FY 2002/2003: Funds were realigned in support of pay of people (FY 2002: +2211/FY 2003: +2610).

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605709A - Exploitation of Foreign Items**	**C28**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C28	ACQ/EXPLOIT THREAT ITEMS (TIARA)	4112	3549	3525	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This is a continuing project for acquisition and exploitation of foreign materiel constituting potential advanced technology threats to U.S. systems. The primary aim of this project is to maximize the efficiency of research and development for force and materiel development by reducing the uncertainties concerning these threats. The project also answers general scientific and technical intelligence requirements, aids in the development of countermeasures to threat materiel and threat technology, and provides materiel for realistic testing and training. Acquisitions and exploitations are executed according to an Army Foreign Materiel Review Board and with the approval of the Army Deputy Chief of Staff for Intelligence (DCSINT).
This activity supports the Legacy to Objective transition path of the Transformation Campaign Plan.

FY 2000 Accomplishments

- 1802 Acquired threat items identified and prioritized in the FY 2000 Foreign Materiel Program (FMP) Five Year Plan.
- 2310 Initiated, continued, or completed exploitation projects on ground systems of Army interest identified in the FY 2000 Army FMP Exploitation Plan.

Total 4112

FY 2001 Planned Program

- 1100 Acquire threat systems identified and prioritized in the FY 2001 Army Foreign Materiel Program (FMP) Five Year Plan.
- 2449 Initiate, continue, or complete exploitation projects on ground systems of Army interest identified in the FY 2001 Army FMP Exploitation Program.

Total 3549

FY 2002 Planned Program

- 1187 Acquire threat systems identified and prioritized in the FY 2002 Army Foreign Materiel Program (FMP) Five Year Plan.
- 2338 Initiate, continue, or complete exploitation projects on ground systems of Army interest identified in the FY 2002 Army FMP Exploitation Program.

Total 3525

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	4112	3582	3510	0
Appropriated Value	4143	3582	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reductions	-17	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-14	-33	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	15	0
Current Budget Submit (FY 2002/2003 PB)	4112	3549	3525	0

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

June 2001

BUDGET ACTIVITY
6 - MANAGEMENT SUPPORT

PE NUMBER AND TITLE
0605712A - Support of Operational Testing

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		68935	68149	89047	0	0	0	0	0	0	0
001	ATEC IOTE	17411	18026	34120	0	0	0	0	0	0	0
987	ATEC INSTRUMENTATION MODERNIZATION & DEVELOPMENT	5351	6105	7540	0	0	0	0	0	0	0
V02	ATEC ACTIVITIES	46173	44018	47387	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The US Army Test and Evaluation Command (ATEC) consists of three subordinate commands: the Army Evaluation Center (AEC), the Operational Test Command (OTC), and the Developmental Test Command (DTC) . This program element finances the operational test and evaluation of developmental materiel systems to include support to Army Transformation. Project 001 provides for direct operational testing and evaluation on major and non-major material systems (ACAT II-IV), including Multi-Service and Joint tests. Excludes funding for Acquisition Category I (ACAT I) major weapons, ACAT IA Automated Information Systems which have funding programmed within the PE for development of each system and ACAT Is with a Army Program Manager . Project 987 provides for development and acquisition of non-major and sustaining instrumentation necessary to attain and maintain the data collection and analysis capability to conduct credible and robust operational tests as demanded by the DoD and Congress. It provides for replacement and improvements of existing obsolete inventory and for the development of new technologies to keep abreast of new weapons advancements. Project V02 provides for the recurring costs of operating the test activities of the U.S. Army Operational Test Command and similar support across the Command.

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

June 2001

BUDGET ACTIVITY
6 - MANAGEMENT SUPPORT

PE NUMBER AND TITLE
0605712A - Support of Operational Testing

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	68659	71079	72540	0
Appropriated Value	68946	68779	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-1018	0	0	
c. Omnibus or Other Above Threshold Reductions	-155	0	0	
d. Below Threshold Reprogramming	1294	0	0	
e. Rescissions	-132	-630	0	
Adjustments to Budget Years Since FY2001 PB	0	0	16507	
Current Budget Submit (FY 2002/2003 PB)	68935	68149	89047	0

Change Summary Explanation: Funding - FY 2000: Funds were reprogrammed into this PE to support Interim Brigade Combat Team test efforts (+1849). FY 2002/2003: Increases were made in support of continued testing and evaluation (FY 2002: +16507/FY 2003: +9228).

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605712A - Support of Operational Testing**	**001**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
001 ATEC IOTE	17411	18026	34120	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project finances the direct costs of planning and conducting operational testing and evaluations on major and non-major materiel systems (ACAT II-IV). This project also includes Multi-Service systems (ACAT II-IV and ACAT I without an Army Program Manager) and Joint Tests (JT). It funds those costs directly attributable to conducting early user tests and evaluations (EUTE), limited user tests and evaluations (LUTE), or initial operational tests and evaluations (IOTE). Operational testing is conducted using typical user troops trained to operate the system. Test conditions are as close as possible to actual combat or operating circumstances. ATEC provides Army leadership with an independent test and evaluation of effectiveness, suitability, and survivability of the system.

FY 2000 Accomplishments

Some of the tests that have been conducted are: Force XXI Battle Command Brigade and Below(FBCB2) - Limited User Test and Evaluation (LUTE), Single Shelter Switch Initial - Operational Test and Evaluation (IOTE), Integrated System Control (ISYSCON) - LUTE, and Joint Warfighter (JWF).

- 7468 Advanced Concept Technology operational testing and evaluation.
- 3007 Joint Test operational testing and evaluation.
- 3120 Command, Control, Communications and Computers operational testing and evaluation. Joint Tests operational testing and evaluation.
- 1583 Engineer/Combat Support operational testing and evaluation.
- 1406 Fire Support operational testing and evaluation.
- 740 Intelligence and Electronic Warfare operational testing and evaluation.
- 87 Aviation operational testing and evaluation.

Total 17411

FY 2001 Planned Program

Planned tests include: Suite of Integrated Radio Frequency Countermeasures (SIRFC), Joint Warfighter (JWF), Battlefield Combat Identification System (BCIS), Advanced Field Artillery Tactical Data System (AFATDS 99) - LUTE, Combat Identification for the Dismounted Soldier (CIDDS) - IOTE, and Upgraded M270A1 Multiple Launch Rocket System .

- 6143 Intelligence and Electronic Warfare operational testing and evaluation.
- 3636 Fire Support operational testing and evaluation.
- 3031 Close Combat operational testing and evaluation.
- 2714 Joint Tests operational testing and evaluation.
- 1815 Aviation operational testing and evaluation.
- 151 Engineer/combat support operational testing and evaluation.
- 536 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 18026

FY 2002 Planned Program

Planned tests include: All Source Analysis System Remote Workstation (ASASRWS), Joint Tactical Terminal (JTT-2), Joint Shipboard Helicopter Integration Process (JSHIP), Joint Theatre Distribution (JTD), Joint Close Air Support (JCAS), Joint Cruise Missile Defense (JCMD), Joint Battle Damage Assessment (JBDA), Suite of Integrated Radio Frequency Countermeasures (SIRFC), Firefinder (FF), Aviation Mission Planning System (AMPS), Tactical Air Space Integration System (TAIS) and Tactical Fire Fighting Truck (TFFT).

- 7660 Fire Support operational testing and evaluation.
- 7543 Command, Control, Communications and Computer operational testing and evaluation.
- 4107 Aviation operational testing and evaluation.
- 3359 Intelligence and Electronic Warfare operational testing and evaluation.
- 3188 Joint Tests operational testing and evaluation.
- 1100 Engineer/combat support operational testing.
- 870 Close Combat operational testing and evaluation.

FY 2002 Planned Program (Continued)

- 6293 Tactical Unmanned Aerial Vehicle (TUAV) testing and evaluation.

Total 34120

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605712A - Support of Operational Testing**	**987**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
987	ATEC INSTRUMENTATION MODERNIZATION & DEVELOPMENT	5351	6105	7540	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project provides for the instrumentation development, technical upgrade and maintainability of essential instrumentation to achieve cost effective data collection, data reduction, data analysis, telemetry, modeling and simulation, and processing capability for support of robust and credible operational tests as required by the DoD and Congress. Increased sophistication of new weapons and communication and control systems demands the ability to capture test data at greater rates and increased volumes and then to reduce the information rapidly to only those essential to effectively evaluate the test. As digitization of the battlefield continues, this effort allows ATEC to modernize and develop its non-major instrumentation allowing it to be less intrusive, more reliable and more robust in terms of integrating combat simulation capability into operational tests. The goal is to expand measurement and test control capability while still reducing future test costs. This project supports multiple instrumentation efforts that lead to improved command and control, increased mobility, expanded remote data collection at various tactical sites with transmit capability to central receiving, control, and evaluation stations at various test directorates, and new instrumentation capability in support of Real-Time Casualty Assessment (RTCA) which measures simulated attrition of forces during simulated battlefield engagements. Operational test directorates are located at Fort Hood, TX; Fort Bliss, TX; Fort Huachuca, AZ; Fort Sill, OK; and Fort Bragg, NC.

FY 2000 Accomplishments

- 3302 Field Data Collection (Collection, Transfer and Reduction).
- 1246 Test Tracking Systems (Telemetry and Imaging).
- 482 Global Positioning System (GPS) Modernization.
- 321 Modeling and Simulation.

Total 5351

FY 2001 Planned Program

- 2947 Field Data Collection (Collection, Transfer and Reduction).
- 1441 Test Tracking Systems (Telemetry and Imaging).
- 975 GPS Modernization.
- 561 Modeling and Simulation.
- 181 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)Programs

Total 6105

FY 2002 Planned Program

- 3770 Field Data Collection (Collection, Transfer and Reduction).
- 2020 Test Tracking Systems (Telemetry and Imaging).
- 900 GPS Modernization.
- 850 Modeling and Simulation.

Total 7540

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605712A - Support of Operational Testing**	**V02**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
V02 ATEC ACTIVITIES	46173	44018	47387	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project finances base costs associated with operational testing, including civilian pay, support contracts, temporary duty, supplies and equipment for elements of the US Army Test and Evaluation Command (ATEC). This project funds the Operational Test Command's Airborne and Special Operations Test Directorate, Fort Bragg, NC; Air Defense Test Directorate, Fort Bliss, TX; Fire Support Test Directorate, Fort Sill, OK; and the Intelligence and Electronic Warfare Test Directorate, Fort Huachuca, AZ, and test and support directorates located at Fort Hood, TX (Aviation; Close Combat; Engineer/Combat Support; Command, Control, Communications and Computers; Advanced Concepts and Test and Evaluation Support Activity). The primary mission of these test directorates is to conduct operational testing of developmental materiel, initial operational test and evaluation (IOTE), follow-on test and evaluations (FOTE), force development test and experimentation (FDTE), and Army Warfighting Experiments (AWE). This project also finances requirements for various Test and Evaluation Liaison Offices located at Fort Benning, Fort Knox, Fort Leonard-Wood, Fort Lee, Fort Gordon, Fort Rucker and the Operational Test Command liaison office for the Initial Brigade Combat Team (IBCT) at Fort Lewis.

FY 2000 Accomplishments

- 28820 Operational costs including: civilian pay, support contracts, temporary duty, supplies and equipment for subordinate elements of Operational Test Command. Includes 292 civilian authorizations.
- 17353 Other Operational costs including: civilian pay, support contracts, temporary duty, supplies and equipment for the Liaison Officers, ATEC Threat Support Activity (ATSA) and subordinate commands. This includes support for Initial Brigade Combat Team (IBCT) throughout the Command. Includes 20 civilian authorizations.

Total 46173

FY 2001 Planned Program

- 26712 Operational costs including: civilian pay, support contracts, temporary duty, supplies and equipment for subordinate elements of Operational Test Command of the Army Test and Evaluation Command. A total of 292 civilian authorizations are supported.
- 16964 Other Operational costs including: civilian pay, support contracts, temporary duty, supplies and equipment for the Liaison Officers, ATEC Threat Support Activity (ATSA)and subordinate commands. A total of 20 civilian authorizations are supported.
- 342 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 44018

FY 2002 Planned Program

- 33300 Operational costs including: civilian pay, support contracts, temporary duty, supplies and equipment for subordinate elements of the Operational Test Command. A total of 292 civilian authorizations are supported.
- 14087 Other Operational costs including: civilian pay, support contracts, temporary duty, supplies and equipment for the Liaison Officers, ATEC Threat Support Activity (ATSA)and subordinate commands. A total of 20 civilian authorizations are supported.

Total 47387

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605716A - Army Evaluation Center**	**302**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
302 ARMY EVALUATION CENTER	26508	26095	31365	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

Project 302 funds the Army Evaluation Center (AEC), which falls under the Army Test and Evaluation Command (ATEC), mission of evaluation and test design. AEC is the Army's independent evaluator for both technical and operational tests of developmental systems for all Army acquisition programs. AEC provides integrated technical and operational evaluations, and life-cycle Continuous Evaluation (CE) of assigned Major Defense Acquisition Programs (MDAP), Major Automated Information Systems, and In-Process Review (IPR) programs for major milestone decisions, materiel changes, and materiel releases in support of the Army Acquisition Executive and force development. AEC develops the evaluation strategy, designs technical and operational tests, and evaluates the test results to address the effectiveness, suitability, and survivability factors pertinent to the decision process, such as: Critical Operational Issues and Criteria (COIC), system performance, soldier survivability, performance in countermeasures, system survivability, reliability, supportability, etc. AEC has the lead in planning and execution of Army Live Fire Tests and Continuous Evaluations through its evaluation and test design responsibilities. This project funds the salaries of civilian employees assigned to the evaluation and test design missions and associated costs including temporary duty, support contracts, supplies and equipment. This project does not finance test facility operations, test instrumentation or test equipment.

FY 2000 Accomplishments

- 26508 Provided integrated technical and operational evaluations and continuous evaluation of assigned MDAPs, major automated information systems, and IPR programs for major milestone decisions, materiel changes, and materiel releases in support of the Army Acquisition Executive and force development. Developed the evaluation strategies, designed technical and operational tests, and evaluated the test results to address the effectiveness, suitability, and survivability factors pertinent to the decision process for systems such as the Close Combat Tactical Trainer (CCTT), the Brigade Combat Team (BCT),

FY 2000 Accomplishments (Continued)

Bradley Fighting Vehicle System (BFVS)M2A3, the Abrams System Enhancement Program (SEP) M1A2, XM898 155mm Sense and Destroy Armor (SADARM), Suite of Integrated Radio Frequency Countermeasures (SIRFC), Suite of Integrated Infrared Countermeasures (SIIRCM), Family of Medium Tactical Vehicles (FMTV), Interim Armored Vehicle (IAV), Force XXI Battle Command Brigade and Below Capstone (FBCB2), C17 Aircraft, Crusader, Tactical Unmanned Aerial Vehicle (TUAV), and Army TACMS Block II/BAT (ATACMS). As the Army lead for Live Fire Test and Evaluation, planned and executed the Army Live Fire Test and Evaluation program for developmental systems such as the M1A2 SEP, Bradley M2A3, Army TACMS Block II/BAT (ATACMS), Wide Area Munition (WAM), Brigade Combat Team (BCT), Line of Sight Anti-Tank (LOSAT) and High Mobility Artillery Rocket System (HIMARS). Prepared integrated System Evaluation Plans and conducted integrated technical and operational evaluations for all Army weapon systems. Includes costs for 171 civilian authorizations.

Total 26508

FY 2001 Planned Program

- 25695 Provide integrated technical and operational evaluations and continuous evaluation of assigned MDAPs, major automated information systems, and IPR programs for major milestone decisions, materiel changes, and materiel releases in support of the Army Acquisition Executive and force development. Develop the evaluation strategy, design technical and operational tests, and evaluate the test results to address the effectiveness, suitability, and survivability factors pertinent to the decision process on systems such as the Brigade Combat Team (BCT), Comanche, UH-60-M Blackhawk Helicopter, Division Capstone Exercise (DCX), Advanced Field Artillery Tactical Data System(AFATDS), Guardrail, Tactical Unmanned Aerial Vehicle (TUAV), Prophet, Bradley fire support team (FIST), Crusader, C-17, Transportation Coordinator's Automated Information for Movement System II (TCAIMS), ATACMS Block II/BAT, the Armored Security Vehicle, Warfighter Simulation (WARSIM), Firefinder Q-47, and the Interim Armored Vehicle (IAV). As the Army lead for Live Fire Test and Evaluation, plan and execute the Army Live Fire Test and Evaluation program for developmental systems such as the Brigade Combat Team (BCT), the M1A2 SEP, Crew Protection Kits, Objective Individual Combat Weapon (OICW), Objective Crew Served Weapon (OCSW), Fire Control System (FCS) and the Line of Sight Anti-Tank (LOSAT). Prepare integrated System Evaluation Plans and conduct integrated technical and operational evaluations for all Army weapon systems. Includes costs for 171 civilian authorizations.
- 400 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 26095

FY 2002 Planned Program

- 31365 Provide integrated technical and operational evaluations and continuous evaluation of assigned MDAPs, and IPR programs for major milestones decisions, materiel changes, and materiel releases in support of the Army Acquisition Executive and force development. Develop the evaluation strategy, design technical and operational test, and evaluate the test results to address the effectiveness, suitability, and survivability factors pertinent to the decision process

  on systems such as the Crusader,Comanche, Tactical Unmanned Aerial Vehicle (TUAV), Brigade Combat Team (BCT), ASAS Block III LUTE, Combat Survivor Evader Locator (CSEL), STARSTREAK, Anti-Personnel Landmine Alternative (APLA),C-130J Airdrop Qualification, C-17 Aircraft, CBA-PLUS, Countermine Capability Set (CMCS) Group B-1 Hercules, High Mobility Multipurpose Wheeled Vehicle (HMMWV A4), SENTINEL, Joint Tactical Ground Station Multi-Mission Mobile Processor (JTAGS/M3P), Helicopter Launched Fire and Forget Missile System (HELLFIRE), Suite of Integrated Infrared Countermeasures (SIIRCM), Suite of Integrated Radio Frequency Countermeasures (SIRFC), and the Firefinder Q-47. As the Army lead for Live Fire Test and Evaluation, plan and execute the Army Live Fire Test and Evaluation program for developmental systems such as the Crusader, MH60K Special Operations Aircraft (SOA). Prepare integrated System Evaluation Plans and conduct integrated technical and operational evaluations for all Army weapons systems. Includes cost for 171 authorizations.

Total 31365

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	24163	26337	27232	0
Appropriated Value	24255	26337	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-328	0	0	0
c. Omnibus or Other Above Threshold Reductions	-50	0	0	0
d. Below Threshold Reprogramming	2673	0	0	0
e. Rescissions	-42	-242	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	4133	0
Current Budget Submit (FY 2002/2003 PB)	26508	26095	31365	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605716A - Army Evaluation Center**	**302**

Change Summary Explanation: Funding - FY 2000: Funds reprogrammed to support higher priority continuous evaluation requirements (+1182). Funds reprogrammed from PE 0605706A to support Interim Brigade Combat Team evaluation (+1491). FY 2002/2003: Funding increased to support continuing evaluation requirements (FY 2002: +4133/FY 2003: +4049).

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

June 2001

BUDGET ACTIVITY
6 - MANAGEMENT SUPPORT

PE NUMBER AND TITLE
0605801A - Programwide Activities

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		64498	60734	69096	0	0	0	0	0	0	0
M02	MED CMD SPT (NON-AMHA)	7432	7718	8795	0	0	0	0	0	0	0
M15	ARI MGMT/ADM ACT	1977	2024	2072	0	0	0	0	0	0	0
M16	STANDARDIZATION GROUPS	3141	3508	3658	0	0	0	0	0	0	0
M42	ARDEC CMD/CTR SUPPORT	5748	6028	6477	0	0	0	0	0	0	0
M44	CECOM CMD/CTR SPT	4109	4113	3917	0	0	0	0	0	0	0
M45	ARL CMD/CTR SUPPORT	4649	5016	5539	0	0	0	0	0	0	0
M46	AMCOM CMD/CTR SPT	4786	5243	5527	0	0	0	0	0	0	0
M47	TACOM CMD/CTR SPT	3072	3210	3337	0	0	0	0	0	0	0
M53	DEVELOPMENTAL TEST COMMAND/CTR SUPPORT	8824	9571	9879	0	0	0	0	0	0	0
M55	EDGEWOOD CHEMICAL BIOLOGICAL CENTER (ECBC)	2964	3123	3670	0	0	0	0	0	0	0
M58	SSCOM CMD/CTR SPT	1882	1864	1874	0	0	0	0	0	0	0
M75	FED WORKFORCE RESTRUCT	14744	8171	13196	0	0	0	0	0	0	0
M76	ARMAMENT GROUP SUPPORT	1170	1145	1155	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This program funds the continued operation of non-Army Management Headquarters Activities (AMHA) management and administrative functions at U.S. Army Research, Development and Standardization Groups overseas, Army Research, Development, Test, and Evaluation (RDTE) commands, centers and activities required to accomplish overall assigned general research and development missions and international research and development not directly related to specific research and development projects. Projects reflect a glide path in response to Army infrastructure drawdown initiatives. The Standardization Groups play an integral role in the U.S. Army efforts for international cooperative research, development and interoperability, and fulfill international memoranda of understanding requirements (especially the American, British, Canadian and Australian Armies Standardization Programs).

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

June 2001

BUDGET ACTIVITY
6 - MANAGEMENT SUPPORT

PE NUMBER AND TITLE
0605801A - Programwide Activities

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	64014	73811	62734	0
Appropriated Value	64121	73811	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR/STTR	-375	0	0	
c. Omnibus or Other above Threshold Reprogrammings	-59	-9500	0	
d. Below Threshold Reprogramming	859	-2900	0	
e. Rescissions	-48	-677	0	
Adjustments to Budget Years Since FY2001 PB	0	0	6362	
Current Budget Submit (FY 2002/2003 PB)	64498	60734	69096	0

Change Summary Explanation: Funding - FY 2001: Funds reprogrammed to support purchase of Ukrainian tanks (-5000), Single Integrated Air Picture (-4500), and to support higher priority programs (-2900). FY 2002: Funds realigned as reimbursement for Ukrainian tank purchase.

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605801A - Programwide Activities**	**M02**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
M02	MED CMD SPT (NON-AMHA)	7432	7718	8795	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project also provides continued operations of contracting and acquisition management and related administrative functions performed by the Army Medical Research Acquisition Activity (USAMRAA) in support of Army Medical Research and Materiel Command (USAMRMC) RDTE programs and its tenant organizations at Fort Detrick, Maryland, including medical materiel procurement contracts for the U.S. Army Medical Materiel Agency and the Office of the Surgeon General, Army. The project also provides funding for the headquarters activities at the USAMRMC, Fort Detrick, Maryland to: (1) develop medical RDTE program policy and guidance; (2) perform long range planning, programming and budgeting; (3) provide the management of resources; and (4) conduct program performance review and evaluation for the RDTE appropriation.

FY 2000 Accomplishments

- 7432 Continued to provide acquisition management functions in support of USAMRMC RDTE programs and its tenant organizations, Ft. Detrick, MD, including medical materiel procurement contracts and procurement of biological defense vaccines. Funded the operation of HQ, USAMRMC activities that administer the medical research, development, and acquisition program to sustain military technology superiority.

Total 7432

FY 2001 Planned Program

- 7681 Continue to provide acquisition management functions in support of USAMRMC RDTE programs and its tenant organizations, Ft. Detrick, MD, including medical materiel procurement contracts and procurement of biological defense vaccines. Fund the operation of HQ, USAMRMC activities that administer the medical research, development, and acquisition program to sustain military technology superiority.
- 37 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 7718

FY 2002 Planned Program

•	8795	Continue to provide acquisition management functions in support of USAMRMC RDTE programs and its tenant organizations, Ft. Detrick, MD, including medical materiel procurement contracts and procurement of biological defense vaccines. Fund the operation of HQ, USAMRMC activities that administer the medical research, development, and acquisition program to sustain military technology superiority.
Total	8795	

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605801A - Programwide Activities**	**M15**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
M15 ARI MGMT/ADM ACT	1977	2024	2072	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Supports the non-AMHA management and administrative functions at the Army Research Institute (ARI) to include the Army Research Institute for the Behavioral and Social Sciences, Alexandria, VA.

FY 2000 Accomplishments

- 1977 Provided continued operation of management and administrative functions at a level consistent with mission requirements and support needs at ARI.

Total 1977

FY 2001 Planned Program

- 1993 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at ARI.
- 31 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 2024

FY 2002 Planned Program

- 2072 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at ARI.

Total 2072

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605801A - Programwide Activities**	**M16**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
M16 STANDARDIZATION GROUPS	3141	3508	3658	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Project M16 supports six Standardization Groups (Australia, United Kingdom, Canada, France, Germany and the Far East) for personnel, travel and overhead costs, leases on buildings, and mandatory permanent change of station. The mission of the Standardization Groups is to represent the Army and serve as in-country/region focal point for all international armaments cooperation in their Areas (countries) of Responsibility to government agencies and defense industries. This includes identification of research, development, interoperability, standardization, (Multinational Force Compatibility) opportunities, and foreign non-developmental items (NDI) that support the Army Transformation by saving Army millions of dollars in development costs.

FY 2000 Accomplishments

- 3141 Continued operation of six Standardization Groups in support of international research, development, interoperability, standardization, opportunities, and foreign NDI.

Total 3141

FY 2001 Planned Program

- 3436 Continue operation of six Standardization Groups in support of international research, development, interoperability, standardization, opportunities, and foreign NDI.
- 72 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 3508

FY 2002 Planned Program

•	3658	Continue operation of six Standardization Groups in support of international research, development, interoperability, standardization, opportunities, and foreign NDI.
Total	3658	

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605801A - Programwide Activities**	**M42**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
M42	ARDEC CMD/CTR SUPPORT	5748	6028	6477	0	0	0	0	0	0	0

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

FY 2000 Accomplishments

- 5748 Provided continued operation of management and administrative functions at a level consistent with mission requirements and support needs at ARDEC.

Total 5748

FY 2001 Planned Program

- 5987 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at ARDEC.
- 41 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 6028

FY 2002 Planned Program

- 6477 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at ARDEC.

Total 6477

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605801A - Programwide Activities**	**M44**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
M44 CECOM CMD/CTR SPT	4109	4113	3917	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Supports the non-AMHA management and administrative functions at the U.S. Army Communications-Electronics Command (CECOM), Ft. Monmouth, NJ.

FY 2000 Accomplishments

- 4109 Provided continued operation of management and administrative functions at a level consistent with mission requirements and support needs at CECOM.

Total 4109

FY 2001 Planned Program

- 4059 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at CECOM.
- 54 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 4113

FY 2002 Planned Program

- 3917 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at CECOM.

Total 3917

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605801A - Programwide Activities**	**M45**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
M45 ARL CMD/CTR SUPPORT	4649	5016	5539	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Supports the non-AMHA management and administrative functions at the U.S. Army Research Laboratory (ARL), Adelphi, MD.

FY 2000 Accomplishments

- 4649 Provided continued operation of management and administrative functions at a level consistent with mission requirements and support needs at ARL.

Total 4649

FY 2001 Planned Program

- 4995 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at ARL.
- 21 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 5016

FY 2002 Planned Program

- 5539 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at ARL.

Total 5539

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605801A - Programwide Activities**	**M46**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
M46	AMCOM CMD/CTR SPT	4786	5243	5527	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Supports the non-AMHA management and administrative functions at the U.S. Army Aviation and Missile Command (AMCOM), Redstone Arsenal, AL.

FY 2000 Accomplishments

- 4786 Provided continued operation of management and administrative functions at a level consistent with mission requirements and support needs at AMCOM.

Total 4786

FY 2001 Planned Program

- 5213 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at AMCOM.
- 30 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 5243

FY 2002 Planned Program

- 5527 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at AMCOM.

Total 5527

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605801A - Programwide Activities**	**M47**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
M47	TACOM CMD/CTR SPT	3072	3210	3337	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Supports the non-AMHA management and administrative functions at the U.S. Army Tank-Automotive Command (TACOM), Warren, MI.

FY 2000 Accomplishments

- 3072 Provided continued operation of management and administrative functions at a level consistent with mission requirements and support needs at TACOM.

Total 3072

FY 2001 Planned Program

- 3189 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at TACOM.
- 21 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 3210

FY 2002 Planned Program

- 3337 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at TACOM.

Total 3337

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605801A - Programwide Activities**	**M53**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
M53	DEVELOPMENTAL TEST COMMAND/CTR SUPPORT	8824	9571	9879	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Project M53 funds civilian labor and support costs for the management and administrative functions of the Headquarters, U.S. Army Developmental Test Command (DTC) located at Aberdeen Proving Ground, Maryland, and is required to support accomplishment of assigned developmental test and evaluation missions not directly related to specific test and evaluation projects. This project includes staff/management functions of resource management, installation management, and ADPE/information/technology support for command-wide databases in support of the developmental test mission with oversight and management responsibility of four Major Range and Test Facility Base installations/test centers: Aberdeen Test Center, Maryland; Dugway Proving Ground, Utah; Yuma Proving Ground, Arizona; and White Sands Missile Range, New Mexico (with responsibility for Electronic Proving Ground, Arizona), as well as for: Redstone Technical Test Center, Alabama; Aviation Technical Test Center, Alabama; Cold Regions Test Center, Alaska; and Tropic Regions Test Center, Hawaii.

FY 2000 Accomplishments

- 7219 Civilian labor and other support costs required to manage and administer the assigned Army developmental test mission including responsibility for subordinate test and evaluation test centers and ranges.
- 1324 Contract costs, including labor, required to manage and administer the assigned Army developmental test mission including responsibility for subordinate test and evaluation test centers and ranges.
- 281 Materials and supplies.

Total 8824

FY 2001 Planned Program

- 7489 Civilian labor and other support costs required to manage and administer the assigned Army developmental test mission including responsibility for subordinate test and evaluation test centers and ranges.
- 1698 Contract costs, including labor, required to manage and administer the assigned Army developmental test mission including responsibility for subordinate test and evaluation test centers and ranges.
- 275 Materials and supplies.
- 109 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 9571

FY 2002 Planned Program

- 7694 Civilian labor and other support costs required to manage and administer the assigned Army developmental test mission including responsibility for subordinate test and evaluation test centers and ranges.
- 1885 Contract costs, including labor, required to manage and administer the assigned Army developmental test mission including responsibility for subordinate test and evaluation test centers and ranges.
- 300 Materials and supplies.

Total 9879

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605801A - Programwide Activities**	**M55**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
M55	EDGEWOOD CHEMICAL BIOLOGICAL CENTER (ECBC)	2964	3123	3670	0	0	0	0	0	0	0

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

FY 2000 Accomplishments

- 2964 Provided continued operation of management and administrative functions at a level consistent with mission requirements and support needs at ECBC.

Total 2964

FY 2001 Planned Program

- 3121 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at ECBC.
- 2 Small Business Innovation Research (SBIR) Program.

Total 3123

FY 2002 Planned Program

- 3670 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at ECBC.

Total 3670

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605801A - Programwide Activities**	**M58**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
M58 SSCOM CMD/CTR SPT	1882	1864	1874	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Supports the non-AMHA management and administrative functions at the Soldier and Biological Chemical Command (SBCCOM), Natick, MA.

FY 2000 Accomplishments

- 1882 Provided continued operation of management and administrative functions at a level consistent with mission requirements and support needs at SBCCOM.

Total 1882

FY 2001 Planned Program

- 1860 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at SBCCOM.
- 4 Small Business Innovation Research (SBIR) Program.

Total 1864

FY 2002 Planned Program

- 1874 Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at SBCCOM.

Total 1874

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605801A - Programwide Activities**	**M75**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
M75 FED WORKFORCE RESTRUCT	14744	8171	13196	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Requirements were defined by the Federal Workforce Restructuring Act of 1994. Funds are to be used to offset the expenses of Voluntary Early Retirement Authority/Voluntary Separation Incentive Pay (VERA/VSIP), and the 15% tax on the final basic pay of each employee who retired under VERA/VSIP to be remitted to the Civil Service Retirement and Disability Fund (CSRDF). Distribution will be made in the year of execution.

FY 2000 Accomplishments

- 14744 Funded the transition costs associated with workforce reductions (VERA/VSIP) and required OPM taxes.

Total 14744

FY 2001 Planned Program

- 8091 Fund the transition costs associated with workforce reductions (VERA/VSIP) and required OPM taxes.
- 80 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 8171

FY 2002 Planned Program

- 13196 Fund the transition costs associated with workforce reductions (VERA/VSIP) and required OPM taxes.

Total 13196

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605801A - Programwide Activities**	**M76**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
M76	ARMAMENT GROUP SUPPORT	1170	1145	1155	0	0	0	0	0	0	0

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

FY 2000 Accomplishments

- 462 Fund domestic and international travel linked to scientific and technological exchanges having military application and mutual benefits to the United States and its Allies.
- 708 Fund the United States' share of the NATO Civil Budget, Chapter IX (Defense Support Programs). U. S. Army is Executive Agent for this NATO bill.

Total 1170

FY 2001 Planned Program

- 403 Fund domestic and international travel linked to scientific and technological exchanges having military application and mutual benefits to the United States and its Allies.
- 708 Fund the United States' share of the NATO Civil Budget, Chapter IX (Defense Support Programs). U. S. Army is Executive Agent for this NATO bill.
- 34 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 1145

FY 2002 Planned Program

- 440 Fund domestic and international travel linked to scientific and technological exchanges having military application and mutual benefits to the United States and its Allies.
- 715 Fund the United States' share of the NATO Civil Budget, Chapter IX (Defense Support Programs). U. S. Army is Executive Agent for this NATO bill.

Total 1155

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

June 2001

BUDGET ACTIVITY
6 - MANAGEMENT SUPPORT

PE NUMBER AND TITLE
0605803A - Technical Information Activities

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		18593	30219	33749	0	0	0	0	0	0	0
720	TECH INFO FUNC ACTV	3054	3625	3735	0	0	0	0	0	0	0
727	TECH INFO ACTIVITIES	3100	5225	5602	0	0	0	0	0	0	0
729	YOUTH SCIENCE ACTIV	2137	2070	2136	0	0	0	0	0	0	0
730	PERS & TRNG ANALYS ACT	1998	2168	2237	0	0	0	0	0	0	0
731	ARMY HIGH PERFORMANCE COMPUTING CENTERS (AHPCC)	0	10543	7282	0	0	0	0	0	0	0
733	ACQUISITION TECH ACT	4241	2638	8699	0	0	0	0	0	0	0
735	NET ASSESSMENT DIRECTORATE	747	756	766	0	0	0	0	0	0	0
C16	FAST	2566	2465	2543	0	0	0	0	0	0	0
C18	BAST	750	729	749	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This program supports upgrading the accuracy, timeliness, availability, and accessibility of scientific, technical, and management information at all levels of Army Research and Development (R&D). Management of this information is critical to achieve the goals established by the Army's Senior Leadership for the Future Combat Systems and the Objective Force. Use of accurate and timely technical information is essential to successfully meeting the milestones required on the path to the Objective Force, allowing Army S&T leadership to refine investment strategy and quickly react to emerging opportunities and issues. This program includes initiatives to improve information derivation, storage, access, display, validation, transmission, distribution, and interpretation. This program addresses the need to increase the competitiveness and availability of scientific, engineering, and technical skills in the DoD and National workforce through outreach programs aimed at high school students. By providing direct working experience for these students in Army laboratories, the programs expose these students to the working world of science and engineering. Funding under this program enables the conducting of analyses, using behavioral science-based analytic tools, to provide policy and decision makers with soldier-oriented recommendations concerning manpower, personnel and training issues. This program also supports Commanders-in-Chief (CINCs) and major Army commands by providing science advisors to address scientific and technical issues and by providing engineering teams to solve field Army technical problems. Coordination of this program with the other Services is achieved through interservice working groups. The work in this program element is peer-reviewed and is consistent with the Army Science and Technology Master Plan (ASTMP). These projects are managed by the Army Research Laboratory, the Army Materiel Command, the Army Research Office, the Army Research Institute, the Army Corps of Engineers and the Information Management Office. The work performed in Project 731 (Army High Performance Computing Centers) and Project 735 (Net Assessment Directorate) directly support Objective Force requirements

by providing high fidelity modeling, simulation, and analyses of materials, systems, and operational constructs to be employed within the Objective Force, and future threat assessments for use in designing Objective Force equipment. The cited work is consistent with the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and Project Reliance. The program element contains no duplication with any effort within the Military Departments.

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	15859	26749	26989	0
Appropriated Value	15973	30499	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-403	0	0	
c. Omnibus or Other Above Threshold Reductions	-61	0	0	
d. Below Threshold Reprogramming	3137	0	0	
e. Rescissions	-53	-280	0	
Adjustments to Budget Years Since FY2001 PB	0	0	6760	
Current Budget Submit (FY 2002/2003 PB)	18593	30219	33749	0

Change Summary Explanation: Funding - In FY 2001, a Congressional add was received for Project 731, Army High Performance Computing Centers (3750).

FY 2002/2003: Funds realigned in order to conduct HQDA directed studies and analyses in support of major acquisitions (FY 2002: +6616/FY 2003: +6902).

Projects without R-2A Exhibits containing less than $1M in FY 2002/2003:
- FY 2002 (766) Project 735, Net Assessment Directorate: Develop and coordinate net assessments of the standing, trends and future prospects for U.S. military capabilities and military potential in comparison with those of other countries or groups of countries to identify emerging or future threats or opportunities for the U.S.
- FY 2002 (749) Project C18, Support Board on Army Science and Technology (BAST) of the National Research Council (NRC), providing technical expert support for forecast of Army S&T needs and to address significant S&T issues.

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605803A - Technical Information Activities**	**720**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
720 TECH INFO FUNC ACTV	3054	3625	3735	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project provides for technology transfer activities to support acquisition, storage, and utilization of technical information for both military and domestic applications. Effective exploitation of S&T information is critical to doing things that have never been done before in achieving the goals established by Senior Army Leadership for the Future Combat Systems and the Objective Force. Specific activities supported include: the Technology Seminar Game; Independent Review Teams; the Defense Technical Information Center (DTIC) Work Unit Information Summary (WUIS) database; the Federal Laboratory Consortium (FLC); the Army Science Board; and administration of the Army's Small Business Innovative Research (SBIR) and Small Business Technology Transfer Pilot Program (STTR) in accordance with the "Small Business Research and Development Enhancement Act of 1992". The SBIR/STTR costs are funded in this Program because the Act prohibits use of PE 0605502A funding for: administrative costs; studies and analyses to support the Acquisition Corps; acquisition and retention of scientists and engineers; and improvement of productivity of laboratories and centers. Technology transfer activities make technical information available to both the public and private sectors to reduce duplication in R&D programs and to increase competitiveness in the U.S. business community. In addition, this project provides funding for patent legal expenses and fees for all U.S. Army Materiel Command (AMC) subordinate commands and laboratories. The requirement to fund patent activities is a result of the Omnibus Budget Reconciliation Act requiring the U. S. Patent and Trademark Office to become a completely user-fee funded agency. This program supports the Objective Force transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 3054 - Provided Army funding support for Federal Laboratory Consortium as required by Public Law 104-113.
  - Provided administrative and contractual support for the Army Science Board.
  - Provided administrative support for the Army's SBIR and STTR programs.
  - Provided Army Science and Technology Reports.
  - Provided funding for patent fees and patent legal expenses for AMC commands and laboratories.
  - Provided funding for Technology and Materiel Game.
  - Provided funding for Independent Review Teams to assess technology status and recommend investment strategy.

Total 3054

FY 2001 Planned Program

•	3526	- Provide Army funding support for Federal Laboratory Consortium as required by Public Law 104-113.
		- Provide administrative and contractual support for the Army Science Board.
		- Provide administrative support for the Army's SBIR and STTR programs.
		- Provide Army Science and Technology Reports.
		- Provide funding for patent fees and patent legal expenses for AMC commands and laboratories.
		- Provide funding for Independent Review Teams to assess technology status and recommend investment strategy.
•	99	- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
Total	3625	

FY 2002 Planned Program

•	3735	- Provide Army funding support for Federal Laboratory Consortium as required by Public Law 104-113..
		- Provide administrative and contractual support for the Army Science Board.
		- Provide administrative support for the Army's SBIR and STTR programs.
		- Provide Army Science and Technology Reports.
		- Provide funding for patent fees and patent legal expenses for AMC commands and laboratories.
		- Provide funding for Independent Review Teams to assess technology status and recommend investment strategy.
Total	3735	

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605803A - Technical Information Activities**	**727**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
727 TECH INFO ACTIVITIES	3100	5225	5602	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project supports development of decision aids, databases, and automation support for the management and execution of the Army Research, Development, Test and Evaluation (RDTE) Appropriation. It includes the hardware, software and contractor support required to develop and implement a set of management decision aids, databases, and hardware/software tools to support technical and budgetary decisions at the Office of the Secretary of Defense (OSD); Department of the Army (DA), including support of the Army Science and Technology Master Plan; Corps of Engineers; Army Materiel Command (AMC); and Army Research Laboratory. This project includes support of the Acquisition Management Integration Subgroup (AMIS) dealing with acquisition management systems. Most of the efforts in this project are on-going activities to support Army Research, Development and Acquisition programs. Effective exploitation of S&T information is critical to do things that have never been done before in achieving the goals established by Senior Army Leadership for the Future Combat Systems and the Objective Force. This program supports the Objective Force transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 3100
  - Administered S&T database computer engineering support contract.
  - Supported Army S&T strategic planning, analysis, and prioritization.
  - Supported AMC database and Defense Reliance management.
  - Provided guidance and policy relative to the content, utilization, and requirements of current and future acquisition management systems for AMIS.

Total 3100

FY 2001 Planned Program

•	5074	- Administer S&T database computer engineering support contract.
		- Support Army S&T strategic planning, analysis, and prioritization.
		- Support AMC database and Defense Reliance management.
•	151	- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
Total	5225	

FY 2002 Planned Program

•	5602	- Administer S&T database computer engineering support contract.
		- Support Army S&T strategic planning, analysis, and prioritization.
		- Support AMC database and Defense Reliance management.
Total	5602	

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605803A - Technical Information Activities**	**729**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
729 YOUTH SCIENCE ACTIV	2137	2070	2136	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project supports science activities to encourage over 100,000 high school youths to develop an interest and pursue higher education and employment in the scientific, engineering, and mathematics career fields. These activities are consolidated entirely within this program to "present the Army" to a large potential pool of technical talent to fill future Army S&T workforce needs. The joint Army/Navy Washington regional area Science and Engineering Apprenticeship Program (SEAP) is included in the overall effort. The SEAP provides an eight-week hands-on learning experience for high school students to work with bench level scientists in Army laboratories to encourage more students to pursue scientific/engineering careers. This program enhances the National Laboratory Science and Engineering pool, which in turn supports Defense industry and Army laboratory needs. This program supports the Objective Force transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

• 2137 - Fostered high school student interest nationally in science, mathematics, engineering and computer science by sponsoring Junior Science and Humanities Symposia (JSHS), International Science and Engineering Fairs (ISEF), International Mathematics Olympiad (IMO), and Research and Engineering Apprenticeship Program (REAP).

- Conducted the joint Army/Navy Washington Regional Area SEAP and increased Army Laboratory/Research, Development and Engineering Center (RDEC) sponsorship of students.

- Conducted the United Introduction to Engineering (UNITE) program, a special tutorial program for Native Americans, African Americans, and Spanish-speaking Americans designed to increase their chances of attending and completing engineering and/or science curricula at the university level.

- Conducted West Point cadet research internship program to enhance cadet training through field experience within Army research labs and centers.

Total 2137

FY 2001 Planned Program

•	2009	- Foster high school student interest nationally in science, mathematics, engineering and computer science by sponsoring JSHS, ISEF, IMO, and REAP.
		- Sponsor joint Army/Navy Washington Regional Area SEAP and increase Army Laboratory/RDEC sponsorship of students.
		- Conduct the (UNITE) program to increase the numbers of Native Americans, African Americans, and Spanish-speaking Americans attending and completing engineering and/or science curricula at the university level.
		- Conduct West Point cadet research internship program to enhance cadet training through field experience within Army research labs and centers.
•	61	- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs..
Total	2070	

FY 2002 Planned Program

•	2136	- Foster high school student interest nationally in science, mathematics, engineering and computer science by sponsoring JSHS, ISEF, IMO, and REAP.
		- Sponsor joint Army/Navy Washington Regional Area SEAP and increase Army Laboratory/RDEC sponsorship of students.
		- Conduct the (UNITE) program to increase the numbers of Native Americans, African Americans, and Spanish-speaking Americans attending and completing engineering and/or science curricula at the university level.
		- Conduct West Point cadet research internship program to enhance cadet training through field experience within Army research labs and centers.
Total	2136	

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605803A - Technical Information Activities**	**730**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
730 PERS & TRNG ANALYS ACT	1998	2168	2237	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project provides for the application of behavioral science-based analytical technologies by the U.S. Army Research Institute (ARI) for the Behavioral and Social Sciences to current and near-term training, leadership, and soldier-related (TLS) issues. The program is focused on policy issues to enhance soldier performance, and provides the Army a unique capability for addressing such issues as the effects of training on individual and unit readiness, the personnel costs of alternative force structures, and the effects of a smaller Army on readiness and retention of quality soldiers. Requirements for studies and analyses for critical personnel and training issues of immediate importance are solicited on an annual basis. This program supports the Objective Force transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

• 1998 - Developed a Transition Book to guide commanders of units that are transitioning to digital operation.

- Conducted an empirical evaluation of the post-training performance of soldiers trained by distance learning and conventional classroom methods.

- Identified factors leading to soldier attrition from the training base.

- Developed plan to evaluate the effect of in-service civilian education on soldier career progression.

Total 1998

FY 2001 Planned Program

• 2111 - Produce a modifiable database of insights of commanders and key leaders on managing change in digital divisions.

- Develop interventions to reduce Army linguist attrition.

- Identify the Military Occupational Specialty (MOS) for which the need for soldiers with multiple skills will be of the highest operational significance, and the skill composition of those MOS.

- Develop data base for identifying effectiveness of buddy assignment on reducing attrition.

FY 2001 Planned Program (Continued)

- Derive updated information on Army College Fund and GI Bill usage rates.
- Empirically evaluate new operational Armed Services Vocational Aptitude Battery (ASVAB)aptitude composites for MOS assignment.

• 57 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 2168

FY 2002 Planned Program

• 2237 - Conduct studies and analyze training issues identified by Training and Doctrine Command (TRADOC).

- Conduct studies and analyze personnel issues identified by the Chief of Staff, Army (CSA), Assistant Secretary of the Army for Manpower and Reserve Affairs [ASA(M&RA)], Deputy Chief of Staff for Personnel (DCSPER), and Commander, U.S. Total Army Personnel Command (PERSCOM).

Total 2237

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605803A - Technical Information Activities**	**731**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
731	ARMY HIGH PERFORMANCE COMPUTING CENTERS (AHPCC)	0	10543	7282	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The work in this project directly supports Objective Force requirements by providing high fidelity modeling, simulation, and analysis of materials, systems, and operational constructs to be employed within the Objective Force. The project supports collaborative efforts to advance computational science and its application to critical Army technologies. The Centers work with researchers at Army laboratories to explore new algorithms in the computational sciences to address critical technology issues in numerous, diverse computational research areas. The Centers also sustain high performance computing environments and educational outreach as an integral part of their mission. This program supports the Objective Force transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

-Funded in O&M, Army PE 0708610A

FY 2001 Planned Program

- 2370 - Sustain the high performance computing environment and infrastructure in support of Army Tank and Automotive Research Development and Engineering Center (TARDEC).
- 2760 - Sustain the high performance computing environment and infrastructure in support of the Army Research Laboratory Major Shared Research Center (MSRC).
- 1349 - Sustain the high performance computing environment and infrastructure in support of the Army High Performance Computing Research Center's (AHPCRC) research and educational activities.
- 3750 - Purpose of this one year Congressional add is to conduct technology exchange with Army researchers in critical computational sciences research areas. Technology transfer activities include: applying improved computational models of the properties of new ceramic materials to be used in support of the Objective Force; applying new computational techniques to drug/vaccine design; and applying new computational methods to the studies of atmospheric modeling.

FY 2001 Planned Program (Continued)

- 314 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 10543

FY 2002 Planned Program

- 2550 - Sustain the high performance computing environment and infrastructure in support of TARDEC.
- 3400 - Sustain the high performance computing environment and infrastructure in support of the MSRC.
- 1332 - Sustain the high performance computing environment and infrastructure in support of the AHPCRC's research and educational activities.

- Conduct technology exchange with Army researchers in critical computational sciences research areas. Technology transfer activities include: applying improved computational models of the properties of new ceramic materials to be used in the support of the Objective Force; applying new computational techniques to drug/vaccine design; and applying new computational methods to the studies of atmospheric modeling.

Total 7282

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605803A - Technical Information Activities**	**733**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
733 ACQUISITION TECH ACT	4241	2638	8699	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project improves the Army's acquisition process by applying decision support and expert information systems, and by supporting analysis and evaluation of alternative acquisition strategies using techniques such as value-added analysis. This project supports integrated management activities such as Horizontal Technology Integration and Army Ballistic Missile Defense. This project also provides: an environment for the analysis and evaluation of new information technologies, and concepts and applications in support of the Army acquisition community's dynamic requirements.

FY 2000 Accomplishments

- 4241 - Validated simulation and logical modeling test and evaluation (T&E) environment that provides a prototype development tool to support technology base initiatives.

  - Distributed and beta tested application programs and user interface utilities for executive level information systems that offer Standard Query Language (SQL) services to Army Acquisition Corps (AAC) corporate and global databases.

  - Analyzed acquisition program financial programming and budgeting requirements.

  - Continued development of Weapon Systems Handbook, analytic/technical support for Army Science and Technology Programs, long-range planning and policy analysis, resource allocation analysis, cost tracking and analysis, cost-effectiveness and database management/financial analysis, special access required technology application concept research/analysis.

Total 4241

FY 2001 Planned Program

•	2560	- Validate simulation and logical modeling T&E environment to provide a prototype development tool in support of technology base initiatives.
		- Distribute and beta test application programs and user interface utilities for executive level information systems that offer Standard Query Language (SQL) services to AAC corporate and global databases.
		- Analyze acquisition program financial programming and budgeting requirements.
		- Continue development of Weapon Systems Handbook, Analytic/Technical Support for Army Support for Army Science and Technology Programs, long-range planning and policy analysis, resource allocation analysis, cost tracking and analysis, cost-effectiveness and database management/financial analysis, special access required technology application concept research/analysis.
•	78	- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
Total	2638	

FY 2002 Planned Program

•	8699	- Conduct studies, analyses and evaluations to improve Army acquisition processes, support integrated management activities and evaluate information technologies.
		- Analyze acquisition program financial programming and budgeting requirements.
		- Continue development of Weapon Systems Handbook, Analytic/Technical Support for Army Support for Army Science and Technology Programs, long-range planning and policy analysis, resource allocation analysis, cost tracking and analysis, cost-effectiveness and database management/financial analysis, special access required technology application concept research/analysis.
Total	8699	

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605803A - Technical Information Activities**	**C16**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C16 FAST	2566	2465	2543	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This program focuses Army Materiel Command (AMC) resources to rapidly identify and solve Army field technical problems which enables the improvement of readiness, safety, training, and cut operations and support (O&S) costs. The Commanding General, AMC, institutionalized AMC Field Assistance in Science and Technology (FAST) in 1988 to plan for and allocate all AMC FAST program funding for projects to support CINCs and Army commanders and to operate the director's office. FAST tours of duty provide significant professional growth opportunities for the Army's scientists and engineers. Science advisers are recruited from AMC engineering centers to serve CINCs and major Army commanders worldwide and are also supported by assigned Quick Reaction Coordinators (QRCs) within each AMC engineering center. All costs associated with science advisor assignments are funded by the AMC subordinate commands that supply the science advisers for two to three year tours. FAST manages a level of effort type project with most projects recouping many times their cost in O&S cost savings.

FY 2000 Accomplishments

• 2566 - Provided continuous activity on over 100 FAST projects. Defined, tested and recommended technological solutions to urgent materiel problems identified by CINCs worldwide and prepared operational needs statements and tested results for the highest priority programs.

- Deployed Science Advisors with U.S. Task Forces as requested by CINCs.

- Provided professional growth opportunities for 17 Army senior science advisors and FAST Program tours for Army junior scientists and engineers.

- Provided professional growth opportunities for civilian personnel through the Scientists and Engineers Field Experience with Soldiers (SEFEWS) program, which gives scientists and engineers the opportunity to participate in training events in the field.

Total 2566

FY 2001 Planned Program

•	2398	- Provide continuous activity on over 100 FAST projects. Define, test and recommend technological solutions to urgent materiel problems identified by CINCs worldwide and prepare operational needs statements and test results for the highest priority programs. - Deploy Science Advisors with U.S. Task Forces as requested by CINCs. - Provide professional growth opportunities for 20 Army senior science advisors and FAST Program tours for Army junior scientists and engineers. - Provide professional growth opportunities for civilian personnel through the Scientists and Engineers Field Experience with Soldiers (SEFEWS) program, which gives scientists and engineers the opportunity to participate in training events in the field.
•	67	- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
Total	2465	

FY 2002 Planned Program

•	2543	- Provide continuous activity on over 100 FAST projects. Define, test and recommend technological solutions to urgent materiel problems identified by CINCs worldwide and prepare operational needs statements and test results for the highest priority programs. - Deploy Science Advisors with U.S. Task Forces as requested by CINCs. - Provide professional growth opportunities for 17Army senior science advisors and FAST Program tours for Army junior scientists and engineers. - Provide professional growth opportunities for civilian personnel through the Scientists and Engineers Field Experience with Soldiers (SEFEWS) program, which gives scientists and engineers the opportunity to participate in training events in the field.
Total	2543	

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

June 2001

BUDGET ACTIVITY
6 - MANAGEMENT SUPPORT

PE NUMBER AND TITLE
0605805A - Munitions Standardization Effectiveness & Safety

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		18312	16622	16072	0	0	0	0	0	0	0
296	PYROTECHNIC RELIABILITY & SAFETY	767	788	904	0	0	0	0	0	0	0
297	MUN SURVIVABILITY & LOG	3803	4180	4249	0	0	0	0	0	0	0
857	DOD EXPLOSIVES SAFETY STANDARDS	752	754	775	0	0	0	0	0	0	0
858	ARMY EXPLOSIVES SAFETY MANAGEMENT PROGRAM	0	493	499	0	0	0	0	0	0	0
859	LIFE CYCLE PILOT PROCESS	0	0	2511	0	0	0	0	0	0	0
862	FUZE TECHNOLOGY INTEGRATION	0	0	2009	0	0	0	0	0	0	0
F21	NATO SMALL ARMS EVAL	476	486	491	0	0	0	0	0	0	0
F24	CONVENTION AMMO DEMIL	12514	9921	4634	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This Program Element supports continuing technology investigations. It provides a coordinated tri-service mechanism for the collection and free exchange of technical data on the performance and effectiveness of all non-nuclear munitions and weapons systems in a realistic operational environment. It provides for NATO interchangeability testing; joint munitions effectiveness manuals used by all services; development of standardization agreements (STANAGS) and associated Manuals of Proof and Inspection (MOPI); operation of the North American Regional Test Center (NARTC); evaluation of demilitarization methods for existing conventional ammunition; evaluation of useful shelf life, safety, reliability and producibility of pyrotechnic munitions; and improvement of explosives safety criteria for DOD munitions via the DOD Explosives Safety Board. Pyrotechnic Reliability and Safety (M296) supports pyrotechnic research, development and testing to identify, characterize and resolve reliability, safety, storage and manufacturing issues that impact production availability and field use of pyrotechnics. It will result in the development and demonstration of new, safe, reliable and environmentally acceptable munitions. Munitions Survivability and Logistics (D297) will make Army units more survivable by testing and demonstrating munitions logistics system solutions that prevent or minimize catastrophic explosive events and accelerate ammunition resupply. The Army Explosives Safety Management Program (M858) is a new start for FY 2001. The U.S. Army Technical Center for Explosives Safety will use the funds in this project to evaluate current explosives safety standards, using risk management philosophy to develop new, scientific and risk-based standards to meet U. S. Army explosives requirements. The Life Cycle Pilot Program(LCPP)(M859) and the Fuze Technology Integration program (M862) are FY 2002 new starts. The LCPP program will assess production base capabilities and needs over the acquisition life cycle of various ammunitions, address the producibility of ammunition, and transition to type classification and production, and address the ability of the production base to cost effectively produce quality products on schedule. The Fuze Technology Integration program (D862) will improve performance and lower the cost for existing proximity fuzes and enable

new applications in submunitions and medium caliber fuzes by addressing advanced proximity fuze sensor technology, Micro-electromechanical Systems (MEMS), Safe and Arms (S&A) technology, and Electronic S&A (ESA)technology for smart munitions.

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	18800	11276	10604	0
Appropriated Value	19037	16776	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-488	0	0	
c. Omnibus or Other Above Threshold Reductions	-74	0	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	-163	-154	0	
Adjustments to Budget Years Since FY2001 PB	0	0	5468	
Current Budget Submit (FY 2002/2003 PB)	18312	16622	16072	0

Change Summary Explanation:
Funding: FY2002/F2003 - New start Project 859 and Project 862

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605805A - Munitions Standardization Effectiveness & Safety**	**297**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
297	MUN SURVIVABILITY & LOG	3803	4180	4249	0	0	0	0	0	0	0

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

FY 2000 Accomplishments

- 1100 Completed software design architecture and development of safety and survivability planning information modules for a prototype munitions storage area planning software tool that allows soldiers to quickly design survivable and efficient ammunition field storage sites.
- 87 Completed 3-D hydrocode computation and analysis of the dynamics of the detonation of a munitions stack in a field storage area to reduce existing quantity-distance requirements for the storage of ammunition
- 443 Designed, developed and demonstrated a prototype manipulator/end effector and develop 3-D motion simulation and real time visualization models for a smart munitions handling crane that will leverage the reduced ammunition force structure and facilitate rapid configuration and reconfiguration of munitions loads in theater
- 180 Designed and fabricated a Palletized Loading System (PLS) Shoe interface platform that makes the Container Roll On Roll Off Platform (CROP) compatible with strategic USAF aircraft and a self powered roller platform that facilitates the transfer of 463L pallets between Army and Air Force trucks and handling equipment
- 72 Designed and fabricated a truck mounted ammunition resupply module and transfer mechanism that will provide Interim Brigade Combat Team (IBCT) towed howitzer units with ready-to-fire ammunition at the firing section

FY 2000 Accomplishments (Continued)

- 250 Tested less heat sensitive propellants and continue design evaluation for alternative projectile venting systems that relieve gas pressure for M915 and XM916 DPICM projectiles to reduce reaction to unplanned stimuli
- 135 Completed the evaluation of technologies that reduce a munition's reaction to fragment impact and ammunition packaging materials that incorporate a propellant fire extinguishing capability (to reduce reaction to unplanned stimuli) and continue to identify system application candidates
- 234 Evaluated alternative ignition concepts and minimum venting requirements for an active venting system for artillery and other munitions to help minimize the reaction in cook-off environments
- 88 Evaluated the concept of mixing low temperature gas generating material in high explosives, which generate high pressure and burst the warhead without violent reaction under cook-off environments, thereby helping the munition meet the requirement to withstand unplanned stimuli
- 300 Completed warhead shaped charge liner redesign modeling and conduct evaluation of the loading process for PAX2A (a less sensitive explosive replacement of Comp A-5 in the Missile Launched Rocket System (MLRS) M85 grenade to help the MLRS meet the requirement to withstand unplanned stimuli)
- 72 Continued reviews of munitions in development and production to determine if they meet DoD 5000.2-R requirement to withstand unplanned stimuli and recommend technical approaches to meet the requirement
- 153 Evaluated venting concepts, complete packaging design and conducted engineering tests for a 2.75" Rocket container that reduces the reaction to unplanned stimuli
- 208 Identified specific insensitive munitions (IM) technologies that can be applied to individual Army munitions, populated database of Army munitions compliance status with DoD 5000.2-R requirement that all munitions be designed to withstand unplanned stimuli, and identified IM improvement priorities
- 166 Conducted engineering testing of candidate corrosion prevention materials to determine suitability for use inside munitions packaging
- 315 Completed design and fabrication of lightweight packaging prototype for large munitions that will reduce prototype development time and cost, production unit cost, and ultimately the manpower and handling required to move heavy/bulky munitions through the logistics system. Conducted baseline tests of prototype

Total 3803

FY 2001 Planned Program

- 770 Complete development and integration of safety and survivability planning information modules, develop linkage to the Standard Army Ammunition System (SAAS), and conduct engineering testing of a prototype munitions storage area planning software tool
- 350 Conduct initial user evaluation and design multi-layer control software for a smart munitions handling crane to build ammunition configured loads
- 90 Demonstrate a Palletized Loading System (PLS) Shoe interface platform that makes Container Roll On Roll Off Platforms (CROP) compatible with USAF aircraft and a self powered roller platform that facilitates the transfer of 463L pallets between Army and Air Force trucks and handling equipment
- 32 Demonstrate a truck mounted ammunition resupply module and transfer mechanism that will provide IBCT towed howitzer units ready-to-fire ammo at the firing section
- 161 Complete engineering tests and demonstrate forklift automation enhancements to permit rapid building of ammunition configured loads, reduce manpower requirements and increase distribution velocity for all in theater munitions handling operations.
- 200 Analyze test results and modify, if necessary, less heat sensitive propellants for M915 and XM916 Dual Purpose Improved Conventional Munition (DPICM) projectiles. Complete engineering tests for modified/improved component hardware and transition to PM
- 568 Design and fabricate prototype ignition devices for a munitions active venting system to help minimize the reaction in cook-off environments
- 495 Develop and evaluate alternate low temperature gas generating materials and mixtures to help minimize the reaction in cook-off environments
- 400 Complete warhead shaped charge liner contour design optimization, conduct engineering tests and continue loading evaluation for a less sensitive High Explosive for MLRS
- 111 Conduct reviews of munitions in development and production to determine if they meet the DoD 5000.2-R requirement to withstand unplanned stimuli and recommend technical approaches to meeting the requirement
- 155 Conduct baseline tests, modified existing design, fabricate prototypes, and conduct fast/slow cook-off tests of Insensitive Munitions (IM) packaging for 2.75" rockets
- 135 Complete development of and maintain Army Insensitive Munitions (IM) compliance status database
- 115 Conduct ammunition container scoring stress analysis and develop concepts for using container scoring to improve munitions IM characteristics

FY 2001 Planned Program (Continued)

- 127 Complete long-term predictive testing and evaluation of corrosion prevention materials suitable for use inside munitions packaging and prepare final report
- 371 Develop concepts and design prototype lightweight (up to a 50% reduction) containers, utilizing advanced materials, for medium and small caliber ammunition that will reduce the logistics footprint, increase handling efficiency and reduce environmental impact compared to currently fielded containers
- 100 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)

Total 4180

FY 2002 Planned Program

- 815 Complete modifications and field testing of a prototype munitions storage area planning software tool and transition to PM Standard Army Ammunition System (SAAS)/Global Combat Support System-Army (GCSS-A). Continue software capability upgrades.
- 250 Develop operator/driver interface and instrumentation for the smart munitions handling crane to facilitate the building of ammunition configured loads.
- 200 Integrate operator aids and conduct engineering tests of an automated ammunition handling forklift that will facilitate the building of ammunition configured loads.
- 100 Develop preliminary design concepts of a smart cargo tiedown system for the PLS CROP, flatracks, and trailer, or truck cargo beds that will reduce in-theater munitions reconfiguration/resupply times and increase transportation safety
- 100 Analyze the explosives safety hazards in storage and transport caused by incompatible munitions in proposed Strategic Configured Loads (SCL) and develop concepts for mitigating these hazards.
- 275 Develop concepts for projectile venting systems that relieve gas pressure in DPICM artillery munitions to improve their ability to withstand unplanned stimuli. Complete preliminary hardware component designs.
- 640 Complete thermoelectric power generator development and design integration and conduct engineering tests for an active venting system for the 2.75" Rocket
- 400 Continue the development of alternate low temperature gas generating material and mixtures to help minimize the reaction in cook-off environments. Conduct safety, characterization, stability, long-term, and demonstration tests

FY 2002 Planned Program (Continued)

- 300 Conduct performance test on submunitions, refine warhead liner design, and complete manufacturing process development for a less sensitive High Explosive for MLRS
- 139 Conduct reviews of munitions in development and production to determine if they meet the DoD 5000.2-R requirement to withstand unplanned stimuli and recommend technical approaches to meeting the requirement
- 120 Continue to populate and maintain Army insensitive munitions (IM) compliance status database
- 210 Develop and test a prototype munitions packaging using container scoring technology
- 200 Identify candidate munitions, conduct bullet and fragment tests and evaluation to determine IM thresholds, and down select IM barrier materials that will reduce the reaction to unplanned stimuli
- 500 Conduct engineering testing and user evaluation and modify design of prototype lightweight, advanced materials containers for medium and small caliber ammunition

Total 4249

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605805A - Munitions Standardization Effectiveness & Safety**	**859**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
859 LIFE CYCLE PILOT PROCESS	0	0	2511	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project is a new start which supports future ammunition development through continuing technology investigations and industrial assessments. It will assess production base capabilities and needs over the life cycle of various ammunition; address the ultimate producibility of ammunition items and transition them to type classification and production; assist PMs/developers to identify industry capabilities and associated technology requirements, and address the ability of the production base to cost effectively produce quality products on schedule. Total Ownership Cost Reduction is an important part of the Life Cycle Pilot Process (LCPP). LCPP provides the Research, Development, and Acquisition community the resources to prototype critical technologies and the information to establish affordable, environmentally safe and modern processes that support a wide range of munitions needs.

FY 2000 Accomplishments

Project not funded

FY 2001 Planned Program

Project not funded

FY 2002 Planned Program

- 1200 Perform production base readiness assessments to analyze present capabilities and identify trends in munitions and industrial technology
- 611 Develop "pilot" (prototype) critical technologies necessary to establish a quality, affordable, and environmentally safe process that supports a wide range of munitions
- 700 Identify technologies required to support total life cycle of munitions from research and development to demilitarization/disposal

Total 2511

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605805A - Munitions Standardization Effectiveness & Safety**	**862**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
862 FUZE TECHNOLOGY INTEGRATION	0	0	2009	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This program is a new start which supports technology investigations in the areas of munition fuzing and safe and arming (S&A). The program addresses four major areas: Advanced proximity fuze sensor technology integration, including Ultrawideband (UWB)sensor and signal processor technology; Micro-electromechanical Systems(MEMS), and Safe and Arm (S&A) technology, and Electronic Safe and Arm (ESA) technology for smart munitions. Development and demonstration of fuzing technology will improve munitions effectiveness for the Future Combat System, cannon artillery, mortars, small and medium caliber ammunition, tanks, mines, countermines, demolitions, rockets, and missiles, with potential multi-service applications. Proximity fuze technology will improve performance and lower the cost for existing proximity fuzes and enable new applications in submunitions and medium caliber fuzes. MEMS S&A technology is needed to develop a MEMS S&A device that will meet MIL-STD requirements for direct and indirect fire munitions. ESA technology for smart munitions will miniaturize, ruggedize, and reduce the cost of components currently proven in missile applications and make them relevant to gun-fired munitions.

FY 2000 Accomplishments

Project not funded

FY 2001 Planned Program

Project not funded

FY 2002 Planned Program

- 933 Evaluate proximity sensor technologies, inclusive of the ultrawideband (UWB), all digital processor and clutter resistant air target sensors
- 251 Develop and evaluate novel penetration techniques
- 194 Investigate medium caliber fuzing ranging technology
- 211 Conduct fuze second environmental sensor evaluation
- 225 Develop MEMS S&A mechanical design. Evaluate micro-energetic initiator methods
- 195 Develop, evaluate and test gun-hardened, reduced volume ESA components

Total 2009

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605805A - Munitions Standardization Effectiveness & Safety**	**F24**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
F24	CONVENTION AMMO DEMIL	12514	9921	4634	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project supports a continuing technology evaluation of demilitarization methods for existing conventional ammunition and conventional ammunition recovered from formerly used defense sites (FUDS). It will complete the development and demonstration of new, safe, and environmentally acceptable alternatives to open burning/open detonation (OB/OD) for recovery/recycle/reclamation equipment and processes to reduce the extremely large stockpile of munitions in the resource recovery disposition account and recovered munitions from FUDS.

FY 2000 Accomplishments

- 400 Continued testing, evaluation, and prove-out of pilot scale plasma arc technology
- 4941 Completed design of cryofracture demilitarization technology pilot plant for Anti-Personnel Landmine (APL) and other munitions
- 1228 Completed pilot plant checkout and initiated testing and evaluation of Super Critical Water Oxidation (SCWO) system for cacinogenic dyes
- 150 Completed system assemblage and initiated component and system prove-out for explosives re-work system
- 125 Initiated development of recycle/reuse technology for magnesium/aluminum
- 3000 Continued development and demonstrations of stationary and transportable contained detonation technology
- 170 Initiated development of smoke generating fog oil recovery technology
- 2500 Initiated efforts at Blue Grass Army Depot to insert, evaluate and enhance resource recovery and reuse options using explosive re-work, propellant conversion and molten salt oxidation technologies

Total 12514

FY 2001 Planned Program

- 2060 Continue testing, evaluation, and prove-out of pilot scale plasma arc technology
- 3772 Continue cryofracture development for demilitarization of APL and other munitions
- 2391 Initiate development of recovery/reuse technology for explosives
- 683 Continue development of recycle/reuse technology for magnesium/aluminum
- 720 Continue development of smoke generating fog oil recovery technology
- 295 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)

Total 9921

FY 2002 Planned Program

- 850 Complete testing, evaluation and prove-out of pilot scale plasma arc technology
- 1834 Continue cryofracture development for demilitarization of APL and other munitions
- 550 Continue development of resource recovery/reuse technology for explosives
- 650 Continue development of recycle/reuse technology for magnesium/aluminum
- 750 Complete development of smoke generating fog oil recovery technology

Total 4634

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE
6 - MANAGEMENT SUPPORT	**0605857A - Environmental Quality Technology Mgmt Support**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		0	5368	1733	0	0	0	0	0	0	0
031	ACQUISITION POLLUTION PREVENTION	0	5368	1733	0	0	0	0	0	0	0
06E	ENVIRONMENTAL RESTORATION TECH SUPPORT	0	0	0	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

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

The Acquisition Pollution Prevention program provides support to the weapon system acquisition community; e.g., program and project managers, to integrate environmental quality analyses into system acquisition. The Acquisition Pollution Prevention program goal is to resolve environmental quality issues related to weapon systems that are identified during design, development, testing, operation, or support to reduce Army environmental liabilities and life-cycle cost and includes the following: support to the Joint Group for Pollution Prevention, efforts to eliminate the use of ozone-depleting materials from weapon systems and facilities, and helping to ensure the continued availability of Halon 1301 to support weapon system fire suppression requirements through the year 2020.

The Environmental Restoration Technology Support Project will, beginning in FY 2003: (1) support the technical integration of an enhanced sensing/processing system for optimized multi-sensor unexploded ordnance (UXO) identification and discrimination at an RDT&E validation site and (2) support the technical integration of a comprehensive hazard/risk assessment capability to predict contaminant, ecological, and human risks on active and inactive firing ranges of military unique materials at an RDT&E demonstration site.

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	0	5418	5322	0
Appropriated Value	0	5418	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	-50	0	
Adjustments to Budget Years Since FY2001 PB	0	0	-3589	
Current Budget Submit (FY 2002/2003 PB)	0	5368	1733	0

Change Summary Explanation: Funding - FY 2002: Funds realigned to higher priority programs (-3589). FY 2003: Funds realigned to higher priority programs (-3768). Also, funds were added to this program element to begin supporting the integration of technology for an enhanced capability to identify and discriminate unexploded ordnance and to help implement a comprehensive risk assessment/modeling system to predict contaminant, ecological, and human risks for active and inactive Army ranges (+160).

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605857A - Environmental Quality Technology Mgmt Support**	**031**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
031 ACQUISITION POLLUTION PREVENTION	0	5368	1733	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This program is not a new start. The Acquisition Pollution Prevention program provides support to the weapon system acquisition community to integrate environmental quality issues and concerns into the weapon system acquisition process. The Army Acquisition Executive, the Assistant Secretary of the Army (Acquisition, Logistics, and Technology), and the Commanding General, Army Materiel Command have defined the functions of the Acquisition Pollution Prevention program in coordination with the office of the Assistant Secretary of the Army for Installations and Environment. This project supports acquisition policy support for the environmental quality concerns of Program Executive Officers and Program Managers and environmental training for the weapon system acquisition community. The Acquisition Pollution Prevention program helps the Army achieve environmental compliance with its weapon systems directed by international treaties, Federal statutes, National Emission Standards, Executive Orders, and DoD and Army policies and regulations.

The Acquisition Pollution Prevention program funds weapon system acquisition support to the Army's Environmental Technology Technical Council and coordinates environmental quality related weapon systems' needs for expanded science and technology efforts. The Acquisition Pollution Prevention program projects are executed using appropriate Army research, development, and engineering centers; Army laboratories; the National Defense Center for Environmental Excellence (NDCEE); and contractor facilities. New technologies are assessed for toxicity and safety risk and are implemented by weapon system program managers with their resources during design, development, or production; on the shop floor; during operations; and/or through improved materials and processes used by or on their system.

The Acquisition Pollution Prevention program includes Army efforts to eliminate the use of ozone-depleting chemicals from weapon systems and facilities, the Army Halon 1301 reserve, and Army acquisition efforts to eliminate the use of hazardous and toxic materials on Army weapon systems. The Acquisition Pollution Prevention program works in coordination with field units and field commands to leverage lessons-learned from field commanders to reduce the burden of hazardous materials on logistics and to reduce hazardous waste generated during operations and support of weapon systems. This includes supporting National Environmental Policy Act (NEPA) analyses by sharing data at the major command, installation, and unit level as appropriate. The focus of the Acquisition Pollution Prevention program is on readiness, improved acquisition processes, reduced supportability burden, and life-cycle cost avoidances. The Acquisition Pollution Prevention program includes support to the Joint Group for Pollution Prevention (JG-PP).

FY 2000 Accomplishments

- Project funded under Operations and Maintenance, Army (Program Element 48854). Army Acquisition Pollution Prevention Program (A2P3) RDT&E activities suspended until FY01.

FY 2001 Planned Program

•	136	- Toxicological assessment of alternative new materials
•	750	- Program Management and Oversight
•	2695	- Test and Evaluation for Ammunition/Munitions Production and Industrial Base Support
		- Test and Evaluation for Aviation and Missile Production and Support
		- Test and Evaluation for Communication/Electronics Production and Support
		- Test and Evaluation for Tracked and Wheeled Vehicles Systems Production and Support
		- Test and Evaluation for Soldier Systems and Biological/Chemical Defense Production and Support
•	1215	- Process Support to Army research, development, and engineering centers
•	412	- Joint Group for Pollution Prevention
•	160	- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
Total	5368	

FY 2002 Planned Program

•	738	- Program management and oversight
•	180	- Halon management and oversight
•	150	- Toxicity assessment for new materials and processes
•	120	- Joint Group for Pollution Prevention
•	175	- Environmental Technology Technical Council support
•	370	- Test and Evaluation for Ammunition/Munitions

FY 2002 Planned Program (Continued)

- Test and Evaluation for Wheeled and Tracked Vehicles

Total 1733

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

June 2001

BUDGET ACTIVITY
6 - MANAGEMENT SUPPORT

PE NUMBER AND TITLE
0605898A - Management Headquarters (Rsch and Dev)

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		27123	8293	7268	0	0	0	0	0	0	0
831	AKAMAI	21958	2972	0	0	0	0	0	0	0	0
M65	ARMY TEST AND EVALUATION COMMAND (ATEC)	5165	5321	7268	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This program funds the Research, Development, Test and Evaluation (RDTE) Army Management Headquarters Activities (AMHA) for the U.S. Army Research Laboratory (ARL), Adelphi, MD and the Headquarters, U.S. Army Test and Evaluation Command (ATEC) located at Aberdeen Proving Ground, MD. This program provides for (1) the development of policy and guidance, (2) long-range planning, (3) programming and budgeting, (4) management of resources (manpower and dollars), and (5) review and evaluation of program performance. This program also provides salaries and related personnel benefits for authorized civilian personnel and the associated administrative support (travel, supplies and equipment) and administrative functions to include staff/management functions of resource management; installation management; policy and methodology; and morale, welfare and recreation.

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

June 2001

BUDGET ACTIVITY
6 - MANAGEMENT SUPPORT

PE NUMBER AND TITLE
0605898A - Management Headquarters (Rsch and Dev)

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	27746	5371	5241	0
Appropriated Value	28191	8371	0	
Adjustments to Appropriated Value	0	0	0	
b. Congressional General Reductions	0	0	0	
b. SBIR/STTR	-627	0	0	
c. Omnibus or Other Above Threshold Reductions	-97	0	0	
d. Below Threshold Reprogramming	4	0	0	
e. Rescissions	-348	-78	0	
Adjustments to Budget Years Since FY2001 PB	0	0	2027	
Current Budget Submit (FY 2002/2003 PB)	27123	8293	7268	0

Change Summary Explanation: Funding - Increases to FY 2002 and FY 2003 were made in support of Army Management Headquarters Activities (AMHA).

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605898A - Management Headquarters (Rsch and Dev)**	**M65**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
M65	ARMY TEST AND EVALUATION COMMAND (ATEC)	5165	5321	7268	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project provides the funding for management headquarters activities at the U.S. Army Research Laboratory (ARL), Adelphi, MD, as well as the Headquarters, U.S. Army Test and Evaluation Command (ATEC) located at Aberdeen Proving Ground, MD. Management Headquarters are primarily responsible for (1) developing RDTE program policy and guidance; (2) performing long range planning, programming and budgeting; (3) providing for the management of resources; and (4) conducting program performance review and evaluation. This project provides for the salaries and related personnel benefits for the authorized civilian personnel and the administrative support (temporary duty travel, operating supplies and equipment) and administrative functions to include staff/management functions of resource management; installation management; policy and methodology; and morale, welfare and recreation. For ATEC, this is not a new start. This project is a result of a directed Army Management Headquarters Activities (AMHA) realignment from Research and Development Program Elements (PEs) 0605601A.F30, 0605602A.628, 0605801A.M53. This program supports the objective transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 5165 Funded the operation of ARL headquarters activities which administers the Army laboratory research and development program to sustain technological superiority.

Total 5165

FY 2001 Planned Program

- 5301 Funds the operation of ARL headquarters activities which administers the Army laboratory research and development program to sustain technological superiority.
- 20 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 5321

FY 2002 Planned Program

•	2024	Civilian labor and other support required to manage and administer the Army test and evaluation mission at ATEC.
•	5244	Funds the operation of Army Research Lab headquarters activities which administers the Army laboratory research and development program to sustain technological superiority.
Total	7268	

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0102419A - Joint Aero Stat Program**	**E55**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
E55	JNT LAND ATK MSL DEF ELEVATED NETTED SENSOR-JLENS	24080	26743	30408	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The Under Secretary of Defense (Acquisition and Technology) and the Army Acquisition Executive (AAE) directed the establishment of the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) Project Office (PO), for Land Attack Cruise Missile Defense (LACMD). This is a multiservice effort with the Army as the lead service. The JLENS PO is assigned to the AAE with operational control assigned to the U. S. Army Space and Missile Defense Command. The program mission is to develop, build, test, field and manage a low cost, Elevated Netted Sensor System that improves battlefield information superiority and airspace dominance for US and Allied Warfighters. JLENS is a theater based system employing advanced technologies with specific focus on LACMD. JLENS sensors provide the over-the-horizon (OTH) surveillance/precision tracking for the Air Directed Surface to Air Missile (ADSAM) concept. The role of the JLENS is to expand the battlefield commander's surveillance and engagement capability against cruise missiles and other targets via the extension of the battle space for systems such as Patriot, Medium Extended Air Defense System (MEADS), and the Navy's Standard Missile and Advanced Medium Range Air-to-Air Missile (AMRAAM).

The cruise missile threat continues to grow and evolve. The relatively low operating cost and high demonstrated accuracy of cruise missiles makes them a viable alternative to manned aircraft or Theatre Ballistic Missiles (TBM). Their long range and low altitude profile allow them to attack potentially undetected, from any direction. The Land-Attack Cruise Missile (LACM) threat is expected to grow as producers export complete systems globally. Complicating the issue are the additional problems presented when this threat is considered in the larger context of the overall theater air campaign. Large numbers of aircraft, cruise missiles, unmanned aerial vehicles (UAVs), and large caliber rockets will characterize the operational airspace in 2010. An enemy cruise missile attack in this tactical environment, particularly if part of an integrated attack involving artillery, air and missile forces, complicates timely target identification and increases the chance of asset damage or fratricide.

As a response to this threat, JLENS provides the Theater Commander-in-Chief (CINC) with a cost effective, long endurance (up to 30 days), extended range detection and tracking capability required to defeat the proliferating land attack cruise missile threat. JLENS complements existing fixed wing surveillance assets by providing long-endurance aerial platforms for long-range wide-area surveillance, precision tracking of airborne and surface targets, combat identification, and communication relays. The presence of JLENS allows the theater CINC to re-allocate costly, manned aircraft to support other critical missions.

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

FY 2000 Accomplishments

FY 2000 Accomplishments (Continued)

- 17237 Continued contract design and demonstration.
- 4088 Other contracts, OGA, and test bed maintenance
- 2755 JLENS In-House

Total 24080

FY 2001 Planned Program

- 17000 Continue contract design and demonstration program.
- 6022 Other contracts and OGA
- 2954 JLENS In-House
- 767 SBIR/STTR

Total 26743

FY 2002 Planned Program

- 22000 Complete fire control radar hardware and software design, Block 1, communication payload design, and processing station design.
- 5449 Other contracts and OGA
- 2959 JLENS In-House

Total 30408

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	24722	24996	29303	0
Appropriated Value	24903	26996	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-642	0	0	0
c. Omnibus or Other Above Threshold Reduction	-98	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-83	-248	0	0
Adjustments to Budget Years Since FY2001 PB	0	-5	1105	0
Current Budget Submit (FY 2002/2003 PB)	24080	26743	30408	0

FY02/03 funds increased to accommodate critical Army priorities.

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

D. Acquisition Strategy: JLENS is being developed, demonstrated, and procured in blocks. Each block is constructed to provide an evolutionary capability to the warfighter for Air Defense Surface-to-Air Missile (ADSAM) engagements, Single Integrated Air Picture (SIAP) support, and combat identification capabilities. Block 1 designs and develops an elevated fire control sensor with sector surveillance integrated on a $71M aerostat platform with the processing station and ancillary equipment to conduct Land Attack Cruise Missile Defense (LACMD) and increase battlefield awareness for the theater commander. It develops, integrates, and tests the necessary software updates for secondary missions (such as surface moving targets and the detection and tracking of Theatre Ballistic Missiles (TBM) in their boost phase); integrates Cooperative Engagement Capabilities (CEC), the Joint Tactical Information Distribution System (JTIDS), and the Enhanced Position Location and Reporting System (EPLRS) communications into the Program Definition and Risk Reduction (PDRR) demonstration system; and designs and develops the mobile mooring system. Block 2 designs, fabricates, tests, and produces the surveillance radar integrated into a $71M aerostat with processing station and ancillary equipment.

E. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
ASARC IPR	4Q			0	0	0	0	0
Preliminary Design Review (PDR) Firecontrol Radar	4Q			0	0	0	0	0
Critical Design Review (CDR)		4Q		0	0	0	0	0
Milestone II (Block I)				0	0	0	0	0
Forward Pass Demo	2Q			0	0	0	0	0
PDRR (1 Prototype Unit)				0	0	0	0	0
EMD Contract Award				0	0	0	0	0
PDRR (1 Prototype Unit) FY07				0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0102419A - Joint Aero Stat Program

PROJECT
E55

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Concept Definition	CPFF	H&R/MA & CA	2007	0		0		0	0	0	0	0
b . Concept Definition	CPFF	Lockheed Martin/N.Y./OH/AL	2000	0		0		0	0	0	0	0
c . Concept Definition	CPFF	Northrop Grumman/MD	1981	0		0		0	0	0	0	0
d . OGAs	MIPR	Multiple	13256	564		500		0	0	0	0	0
e . Risk Mitigation, Design, Development	CR/CPIF	Raytheon System Co. MA/CA/FL	47033	17000		22027		0	0	0	0	0
f . SBIR / STTR			642	767		0		0	0	0	0	0
g . GFE			1201	0		0		0	0	0	0	0
h . CEC/ SM-2 CEC	MIPR	Navy/Multiple	4219	0		0		0	0	0	0	0
i . Design/Dev/Demo Support	CPIF	CAS/AL	5974	1642		1800		0	0	0	0	0
j . Misc. Contracts	SS/CPFF	Multiple	3151	775		1847		0	0	0	0	0
k . ADaM			0	1800		0		0	0	0	0	0
l . AoA/ORD/TEMP			0	1126		1275		0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0102419A - Joint Aero Stat Program

PROJECT
E55

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:			81464	23674		27449		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 . Misc Support			2084	0		0		0	0	0	0	0
b . In-House, JLENS		Space & Missile Defense Cmd	10733	2954		2959		0	0	0	0	0
c . OGA Salaries		Space & Missile Defense Cmd	593	0		0		0	0	0	0	0
Subtotal:			13410	2954		2959		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0102419A - Joint Aero Stat Program

PROJECT
E55

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Maintain Test Bed	SS/CPFF	CAS-TX, NM	2297	115		0		0	0	0	0	0
b . Misc. OGA&Contracts	Mul/MPR	AL/TX/NM	1656	0		0		0	0	0	0	0
Subtotal:			3953	115		0		0		0	0	0

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

Remarks: Not Applicable

Project Total Cost:			98827	26743		30408		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE
7 - OPERATIONAL SYSTEMS DEV	**0203726A - Advanced Field Artillery Tactical Data System**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		35378	36471	36969	0	0	0	0	0	0	0
2ET	AFATDS OPERATIONL TEST	1891	0	0	0	0	0	0	0	0	0
322	ADV FA TAC DATA SYS/EFF CNTRL SYS (AFATDS/ECS)	33487	36471	36969	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The Advanced Field Artillery Tactical Data System (AFATDS) will broaden and modernize the US Army fire support command, control and communications (C3) system. As a part of the Army Battle Command System (ABCS) architecture, AFATDS will provide automated fire support, fire planning and the coordination and employment of all service/combined fire support assets to complement the commander's scheme of maneuver. AFATDS will accomplish this by providing fully automated support for planning, coordination and control of all fire support assets (mortars, close air support, naval gunfire, attack helicopters, offensive electronic warfare, field artillery cannons, rockets and guided missiles) in the execution of close support, counterfire, interdiction, suppression of enemy air defense and deep operations. AFATDS will automatically implement detailed commander's guidance in the automation of operational planning, movement control, targeting, target value analysis and fire support planning. This project is a replacement system for the Tactical Fire Direction System (TACFIRE) and the Initial Fire Support Automated System (IFSAS). The AFATDS supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP). The Legacy system support comes from the successful fieldings of AFATDS software Versions A96, A97, and A98. The Objective system support emanates from AFATDS Version 9 as the objective AFATDS system and the transitional support of AFATDS to the Effects Control System (ECS), which is the next iteration of Command and Control Fire Support.

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	40860	36816	34330	0
Appropriated Value	41222	36816	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-1076	0	0	
c. Omnibus or Other Above Threshold Reductions	-165	0	0	
d. Below Threshold Reprogramming	-4406	0	0	
e. Rescissions	-197	-345	0	
Adjustments to Budget Years Since FY2001 PB	0	0	2639	
Current Budget Submit (FY 2002/2003 PB)	35378	36471	36969	0

FY00 decrease due to 2M BTR to PEO IEW; 1.580M BTR to PM TOCS for AMDPCS and .826M BTR for Near Term Digital Radio S (NTDR).
FY02 Fund increase ($2.6M) for development of software functionality IAW the AFATDS Acquisition Program Baseline.
FY03 Fund increase ($2.5M) for development of software functionality IAW the AFATDS Acquisition Program Baseline.

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203726A - Advanced Field Artillery Tactical Data System**	**322**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
322	ADV FA TAC DATA SYS/EFF CNTRL SYS (AFATDS/ECS)	33487	36471	36969	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Project D322 - AFATDS Development: The project is composed of Army Battlefield Command System (ABCS) Common Hardware/Software (CHS) employed in varying configurations at different operational facilities (or nodes) and unique system software interconnected by tactical communications in the form of a software-driven, automated network. Both hardware and software will be capable of being tailored to perform the fire support command, control, and coordination requirements at any level of command. This will permit variable command and control relationships and full fire support functionality at all echelons of field artillery and maneuver, from echelons above corps to battery or platoon in support of all levels of conflict. The Marine Corps will also utilize AFATDS. AFATDS will interoperate with Navy and Air Force Command and Control weapon systems as well as the Allied fire support systems ADLER (Germany), ATLAS (France), BATES (UK), and SIR (Italy).

FY 2000 Accomplishments

- 1500 Prepared for Limited User Test of AFATDS '99 software.
- 31987 Continued AFATDS '99 software development in support of Fire Support and ABCS functionality development to include FDD/FDC.

Total 33487

FY 2001 Planned Program

- 2108 Support Test and Materiel Release of AFATDS '99 Software
- 33305 Continue AFATDS '99 and begin AFATDS Version 7 software development in support of Fire Support and ABCS functionality development to include FDD/FDC.
- 1058 SBIR/STTR support

Total 36471

FY 2002 Planned Program

- 2780 Prepare for Test and Materiel Release of AFATDS Version 7 Software
- 34189 Continue AFATDS Version 7 software development in support of Fire Support and ABCS functionality development to include FDC.

Total 36969

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA (B28600)	43856	58551	49476	0	0	0	0	0	0	0
Spares (BS9708)	2370	2613	2832	0	0	0	0	0	0	0
MOD IN SERVICE EQUIP (B28620)	0	0	0	0	0	0	0	0	0	0

C. Acquisition Strategy: AFATDS software will be developed in incremental releases. AFATDS '96, which received Materiel Release on 13 December 1996, automated 51% of the required tasks including fire support planning, target nomination, order of fire, and meteorological/survey operations. Subsequent releases add additional functions, providing automated capabilities for the required tasks including fire support sensor planning and additional munitions. Completion of AFATDS Version 9 will result in automation of all required functionality, as currently defined, including full fire support planning, target acquisition support, and field artillery mission support. Additionally, the AFATDS software will utilize the Joint Common Operating Environment (JCOE) and the Joint Technical Architecture. AFATDS will support FDD/FDC and Army Warfighter Experiments through FY 2005.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
AFATDS '98 Materiel Release	1Q			0	0	0	0	0
AFATDS '99 Limited User Test (LUT)		2Q		0	0	0	0	0
AFATDS '99 Materiel Release		4Q		0	0	0	0	0
AFATDS Version 7 LUT			4Q	0	0	0	0	0
AFATDS Version 7 Materiel Release				0	0	0	0	0
AFATDS Version 8 LUT				0	0	0	0	0
AFATDS Version 8 Materiel Release				0	0	0	0	0

D. Schedule Profile (continued)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
AFATDS Version 9 LUT				0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203726A - Advanced Field Artillery Tactical Data System

PROJECT
322

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	SS/CPAF	Raytheon Systems Corp (prev. MX, HDC)	83149	30547	2Q	33500	2Q	0	0	0	0	0
b . ABCS SE&I/COE	MIPR	DISA/ATCCS/PEO C3S	2582	1524	2Q	0	2Q	0	0	0	0	0
c . GFE: PSE	C/FFP	Litton, General Dynamics	2287	390	2Q	510	2Q	0	0	0	0	0
Subtotal:			88018	32461		34010		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 . Software Development Support	MIPR	CECOM SED	800	120	2Q	391	2Q	0	0	0	0	0
b . Software Development Support	MIPR	FSSED/TELOS	1649	318	2Q	438	2Q	0	0	0	0	0
c . Engineering Support	MIPR	CECOM MATRIX	1099	337	2Q	305	2Q	0	0	0	0	0
Subtotal:			3548	775		1134		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203726A - Advanced Field Artillery Tactical Data System

PROJECT
322

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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 Management	MIPR	CECOM	205	110	2Q	115	2Q	0	0	0	0	0
b . Test Support	MIPR	Misc	763	663	2Q	310	2Q	0	0	0	0	0
Subtotal:			968	773		425		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Support	C/CPFF	CSC, NJ	1379	345	2Q	325	2Q	0	0	0	0	0
b . PROGRAM MANAGEMENT:			0	0		0		0	0	0	0	0
c . PM FATDS			1575	759	2Q	730	2Q	0	0	0	0	0
d . MATRIX			872	300	2Q	345	2Q	0	0	0	0	0
e . SBIR/STTR			0	1058	2Q	0		0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203726A - Advanced Field Artillery Tactical Data System

PROJECT
322

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:			3826	2462		1400		0		0	0	0
Project Total Cost:			96360	36471		36969		0		0	0	0

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

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203735A - Combat Vehicle Improvement Programs

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		87032	100575	195602	0	0	0	0	0	0	0
330	ABRAMS TANK IMPROVE PROG	36805	75044	182535	0	0	0	0	0	0	0
344	FIRE SPT TM VEH INTG	10980	2134	0	0	0	0	0	0	0	0
371	BRADLEY BASE SUSTAIN	28809	1983	0	0	0	0	0	0	0	0
718	GRND COMBAT VEHICLE HTI	7638	18951	12568	0	0	0	0	0	0	0
C64	DC64	2800	2463	499	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This Program Element (PE) responds to vehicle deficiencies identified during Desert Storm, continues technical system upgrades, and addresses needed evolutionary enhancements to tracked combat (Abrams and Bradley) and tactical (Bradley Fire Support (FIST)) vehicles. This PE provides combat effectiveness and Operating and Support (O&S) cost reduction enhancements for the Abrams Tank, through a series of product improvements to the current M1A1 and M1A2 vehicles. Additional improvements allow the M1A2 System Enhancement Package (SEP) tank to operate effectively with the M2A3 Bradley. This PE also addresses future product improvements to the M2A3, and the Abrams tank fleet. Common Digitization (CD) efforts will work towards the resolution of common digitization concerns that impact all current and future Ground Combat Support Systems (GCSS). Included are Real Time Common Operating Environment (RTCOE) Expansion, and an Abrams/Bradley Common Digitization Program. These systems support the Legacy transition path of the Transformation Campaign Plan.

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	83271	99423	103657	0
Appropriated Value	84544	101523	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR/STTR	-2240	0	0	
c. Omnibus or Other Above Threshold Reprogrammings	1656	0	0	
d. Below Threshold Reprogramming	3999	0	0	
e. Rescissions	-927	-948	0	
Adjustments to Budget Years Since FY2001 PB	0	0	91945	
Current Budget Submit (FY 2002/2003 PB)	87032	100575	195602	0

Change Summary Explanation:
FY 2000 increased for Cordless VIS to Abrams, Project D330.
FY 2002/2003 increased for Abrams, Project D330 to accelerate the Abrams/Crusader Common Engine (ACCE) program due to the Army Transformation Campaign Plan.

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

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203735A - Combat Vehicle Improvement Programs

PROJECT
330

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
330 ABRAMS TANK IMPROVE PROG	36805	75044	182535	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project funds improvements to the Abrams Main Battle Tank (M1 series). The Abrams mission is to close with and destroy enemy forces on the integrated battlefield using firepower, maneuver, and shock effect. The M1A2 was the Army's first fully digital ground combat system developed under this project. It was succeeded by the M1A2 SEP, which is the current production model. SEP refers to a System Enhancement Package which upgrades the M1A2's computer systems and its night vision capabilities. The first M1A2 SEP tank was delivered to the Government on 1 September 1999. The SEP tank has better microprocessors, color flat panel displays, more memory capacity, better Soldier-Machine Interface (SMI), and a new open operating system designed to run the Army's Common Operating Environment (ACOE) software [funded under PE 0203758A]. Both the Gunner's Primary Sight (GPS) and the Commander's Independent Thermal Viewer (CITV) on the SEP tank include the improved thermal imaging capabilities of the new 2nd Generation Forward-Looking Infra-Red (FLIR) technology. A separate development program to partially digitize the M1A1 Tank began in FY 1997 with funds provided under PE 0203758A. Post SEP development efforts are focusing on improvements yielding significant life cycle cost reductions or survivability enhancements. The Abrams-Crusader Common Engine (ACCE) program, which began in FY 2000, is the most significant of these efforts. The objective is a lighter, more reliable, more fuel efficient, and easier-to-repair engine. The ACCE program is also supported by FY 2000 funding under PE 0603005A and PE 0603854A. This system supports the Legacy transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 3230 Integration of Battlefield Combat Identification System (BCIS) into the M1A2 SEP tank
- 1408 Provided Government Support
- 6067 Initiated M1A2 SEP Live Fire and Survivability Test, including pre-shot analysis and start of test shots
- 9832 Initiated engineering efforts to upgrade the Abrams engine
- 970 Initiated lightweight vehicle track development
- 4158 Initiated development of M1A2 test program sets, and Abrams 1st and 2nd generation health check system
- 9140 Initiated program for redesign of turret and hull network boxes and built-in test embedded diagnostic program for the M1A1 fleet
- 2000 Initiated integration and testing of a wireless Vehicle Intercommunication System (VIS)

Total 36805

FY 2001 Planned Program

- 12663 Continue M1A2 SEP Live Fire and Survivability Test, including live fire shots, simulation and purchase of system support package
- 1210 Provide Government Support
- 47160 Continue Abrams-Crusader Common Engine (ACCE) Program
- 3800 Continue redesign of turret and hull network boxes and built-in test embedded diagnostic program for the M1A1 fleet
- 2900 Continue lightweight vehicle track development
- 5100 System Technical Support (STS) for the Abrams program
- 2232 Small Business Innovation Research/Small Business Technology Transfer

Total 75065

FY 2002 Planned Program

- 6900 Continue M1A2 SEP Live Fire and Survivability Test, including simulation and live fire shots
- 163141 Continue Abrams-Crusader Common Engine (ACCE) Program
- 1249 Provide Government Support
- 500 Begin Vehicle Integrated Defense System (VIDS) (M1A1)
- 3045 Continue integration of Battlefield Combat Identification System (BCIS) into the M1A2 SEP tank
- 5700 Continue System Technical Support (STS) for the Abrams program
- 2000 Continue lightweight vehicle track development

Total 182535

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Abrams Upgrade Program (GA0750)	803949	463716	590240	0	0	0	0	0	0	0
Abrams Vehicle Modification (GA0700)	29645	56476	113485	0	0	0	0	0	0	0
M1A1D Retrofit (GA0720)	0	883	11647	0	0	0	0	0	0	0
System Enhancement Pgm: SEP M1A2 (GA0730)	0	58111	95152	0	0	0	0	0	0	0
M1A2 Training Devices (GB1302)	8362	10407	11814	0	0	0	0	0	0	0
Training Device Mod (GA5208)	2628	5282	5545	0	0	0	0	0	0	0
Initial Spares (GE0161)	9713	14671	23554	0	0	0	0	0	0	0
PE 0603854A (D505)*	14207	70000	54100	0	0	0	0	0	0	0
PE 0603005A (D532)	4773	0	0	0	0	0	0	0	0	0

*Funding represents a portion of the overall funding in project D505.

C. Acquisition Strategy: General Dynamics Land Systems Division (GDLS) is the prime contractor for this development program. Honeywell is the prime contractor for the ACCE development program.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete M1A2 SEP Live Fire Testing				0	0	0	0	0
Award Abrams-Crusader Common Engine (ACCE) Contract	4Q			0	0	0	0	0
Complete Abrams-Crusader Common Engine (ACCE) Contract				0	0	0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203735A - Combat Vehicle Improvement Programs

PROJECT
330

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prior Contracts			472549	0		0		0	0	0	0	0
b . SEP/FLIR Phase I	SS-CPFF	General Dynamics Sterling Heights, MI	4688	0		0		0	0	0	0	0
c . SEP/FLIR Phase II	SS-CPFF	General Dynamics Sterling Heights, MI	115862	0		0		0	0	0	0	0
d . FLIR Integration	C-CPAF	Texas Instruments McKinney, TX	25000	0		0		0	0	0	0	0
e . Abrams-Crusader Common Engine (ACCE)	C-CPAF	Honeywell International Phoenix, AZ	0	47160		163141		0	0	0	0	0
f . BCIS Integration	SS-CPFF	General Dynamics Sterling Heights, MI	3230	0		3045		0	0	0	0	0
g . Other / Future Contracts			11238	8000		8200		0	0	0	0	0
h . SBIR/STTR, etc.			0	2233		0		0	0	0	0	0
Subtotal:			632567	57393		174386		0		0	0	0

Remarks: GDLS contracts (Phase I / Phase II) include funding from 0203758A / D374 and 0604649A / DG26.

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203735A - Combat Vehicle Improvement Programs

PROJECT
330

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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 / GFE	MIPR	TACOM / OGA's	46033	1210		1249		0	0	0	0	0
b . DSESTS - BIT/FIT Requirements	MIPR	TACOM / OGA's	13299	3800		0		0	0	0	0	0
Subtotal:			59332	5010		1249		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 . Various Test Sites	MIPR	OGA's	46245	12662		6900		0	0	0	0	0
Subtotal:			46245	12662		6900		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203735A - Combat Vehicle Improvement Programs

PROJECT
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
Project Total Cost:			738144	75065		182535		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203735A - Combat Vehicle Improvement Programs**	**718**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
718	GRND COMBAT VEHICLE HTI	7638	18951	12568	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Project D718, Ground Combat Vehicle Horizontal Technology Integration (HTI), is a project initiated for the purpose of developing technology improvements which have application to or insertion opportunities across multiple Ground Combat Support System (GCSS) vehicles, both current and future (e.g. Future Combat Systems (FCS)). This project funds Suite of Survivability Enhancements Systems (SSES), Flat Panel Display (FPD),Common Digitization (CD) and RTCOE Expansion.

SSES is an HTI initiative to develop, produce and apply Hit Avoidance Technology to Army ground combat vehicles. Laser Warning Receiver (LWR) is part of that effort. Successful testing of LWR was accomplished on the Bradley A3 during FY99/00 and 318S LWRS development will continue in FY01 for GCV's.

FPD program is an effort to develop common, flat panel multi-purpose display performance specifications and evaluate current FPD for GCV systems, CFPD performance specification will optimize industial FPD standards while allowing for future common GCV display requirements and modularity.

CD efforts will work towards the resolution of common digitization technology concerns that impact current and future GCSS systems. The CD efforts include Real Time Common Operating Environment (RTCOE) Expansion, Common Electronic Obsolescence Avoidance (EOA), and Common GCSS Digitization Technology efforts.

1) RTCOE Expansion will seek to identify opportunities to grow Crusader's RTCOE middleware to meet the FCS/CGA requirements. This effort will work towards getting acceptance and compliance of RTCOE with the Defense Information Infrastructure Common Operating Environment and the Joint Technical Architecture standards.

2) EOA will identify and resolve current GCSS Systems electronics obsolescence with special emphasis on future electronics integration in GCV's. The EOA effort will examine technology alternatives that can provide current and future GCV's the opportunity to incorporate state of the art electronic technologies and maintain that capability for a reasonable period of performance. EOA will also examine increasing usage of Commercial-off-the-shelf (COTS) electronic products.

3) Common GCSS Digitization technology efforts will identify, develop and integrate common GCSS Warfighter Digitizaiton requirements that will provide continued Tactical Overmatch and reduce soldier-machine interface (SMI) burden throughout the GCV's lifecycle. These common GCSS Warfighter Digitization technologies will support current and future GCSS systems.

This PE supports the Legacy transition path of the Transformation Campaign Plan (TCP)

FY 2000 Accomplishments

- 6709 Design & Engineering Improvements (FED)
- 30 Government Performance Evaluation (FED)
- 300 Performance Specification/ICD Completion/Government Approval (FED)
- 299 Program Management & Administration (FED)
- 300 Contractor evaluation of prototype displays (FED)

Total 7638

FY 2001 Planned Program

- 3854 Field Emission Display (FED) Reprogrammed to Abrams
- 2691 Laser Warning Receiver (LWR) development, test, and Type Classification
- 200 Laser Warning Receiver (LWR) Program Management
- 458 Program management and administration (CD)
- 750 RTCOE Expansion
- 564 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)
- 3999 Common modeling and simulation efforts
- 6435 Abrams/Bradley Common Obsolesence/Digitization

Total 18951

FY 2002 Planned Program

- 12318 Abrams/Bradley Common Obsolesence/Digitization
- 250 RTCOE Expansion

Total 12568

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

Six complete 318S systems will be dellivered to the PEO for future integration. Potential candidates are BCT, FCS and LAV.

C. Acquisition Strategy: The Laser Warning Receiver,(LWR) effort, will be accomplished through contract efforts with CECOM RDEC, the 318S will be developed by adding the AN/VVR-1 laser beam rider (LBR)detection capabilities to an existing NDI laser warning system in use by the Canadian government, the 218S. This approach will provide the Army with a low cost and low risk way to meet the Operational Requirements Document for the Laser Warning Receiver System, dated 19 Aug 1994.

The RTCOE effort will use existing prime contractors to investigate avenues to expand the RTCOE middleware to meet the FCS/CGA requirements. This effort will work towards getting acceptance and compliance with RTCOE with the Defense Information Infrastructure Commons Operating Environment and the Joint Technical Architecture standards.

CD efforts will work towards the resolution of common digitization technoloty concerns that impact current and future GCSS systems. Requirements will be incorporated into the exististing STS contract via Work Directive. The CD efforts include Real Time Common Operating Environment (RTCOE) Expansion, Common Electronic Obsolescence Avoidance (EOA), and Common GCSS Digitization Technology efforts.

1) RTCOE Expansion will seek to identify opportunities to grow Crusader's RTCOE middleware to meet the FCS/CGA requirements. This effort will also support efforts to seek JTA acceptance of the RTCOE as a true real time middleware.

2) EOA will identify and resolve current GCSS Systems electronics obsolescence with special emphasis on future electronics integration in GCV's. The EOA effort will examine technology alternatives that can provide current and future GCV's the opportunity to incorporate state of the art electronic technologies and maintain that capability for a reasonable period of performance. EOA will also examine increasing usage of Commercial-off-the-shelf (COTS) electronic products.

3) Common GCSS Digitization technology efforts will identify, develop and integrate common GCSS Warfighter Digitizaiton requirements that will provide continued Tactical Overmatch and reduce soldier-machine interface (SMI) burden throughout the GCV's lifecycle. These common GCSS Warfighter Digitization technologies will support current and future GCSS systems.

This project supports the Legacy transition path of the Transformation Campaign Plan (TCP)

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
LWR Development		3-4Q		0	0	0	0	0
LWR Testing			1-2Q	0	0	0	0	0
LWR Type Classification			3-4Q	0	0	0	0	0
RTCOE Expansion		2-4Q	1-2Q	0	0	0	0	0
Abrams/Bradley Common Obsolescence/Digitization		3-4Q	1-4Q	0	0	0	0	0
High Resolution Development (FED)	1-4Q			0	0	0	0	0
Tech Evaluation (FED)	1-2Q			0	0	0	0	0
Evaluation for vehicle HTI	1-4Q			0	0	0	0	0

The FED effort for FY01 has been aligned with Abrams project D330.

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203735A - Combat Vehicle Improvement Programs

PROJECT
718

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . LWR Development		BF Goodrich, Danbury CT	3741	2691	3Q	0		0	0	0	0	0
b . LWR Integration/LWR Integration	CPIF	UDLP, Santa Clara, CA	3863	0		0		0	0	0	0	0
c . LWR CDA	CPAF	SLM, Nashua, NH	452	0		0		0	0	0	0	0
d . RTCOE Exp	CPIF	UDLP, Minn, MD	0	750	3Q	250		0	0	0	0	0
e . FED-Tech Development	Cost/Share	MICRON/Pixtech, Boise, ID	33110	0		0		0	0	0	0	0
f . FED-Technology Evaluation	CPIF	GDLS, Sterling Hts, Mi	450	0		0		0	0	0	0	0
g . FED-Technology Eval	CPIF	UDLP, Santa Clara, CA	904	0		0		0	0	0	0	0
h . Abrams/Bradley Obsolescence/Digitization	FP	GDLS/UDLP	0	5684	3-4Q	12318		0	0	0	0	0
i . Program Adjustments			0	8418		0		0	0	0	0	0
Subtotal:			42520	17543		12568		0		0	0	0

Remarks: Program Adjustments= FED efforts has been realigned to Abrams D330 (3854) and DA withdrawl for support to other DA projects (4563)

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203735A - Combat Vehicle Improvement Programs

PROJECT
718

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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 Spt. - LWR		BF Goodrich, Danbury CT	882	200	3Q	0		0	0	0	0	0
b . Tech Spt. - LWR	MIPR	TARDEC, MI	225	0		0		0	0	0	0	0
c . Support Mgt. - LWR	CPFF	Sig/Rsch, MI	93	0		0		0	0	0	0	0
d . Engr. Spt. - LWR	CPAF	Camber, MI	513	0		0		0	0	0	0	0
e . Training Aid Develop - LWR	MIPR	STRICOM, FL	308	0		0		0	0	0	0	0
f . IBAS Display - LWR	MIPR	PM CCAWS, AL	30	0		0		0	0	0	0	0
g . Engr.Test Spt. - LWR	MIPR	SLAD (OMI), NM	672	0		0		0	0	0	0	0
h . Engr. Spt-FED	CPIF	GDLS, Mi	100	0		0		0	0	0	0	0
i . Engr. Spt-FED	CPIF	UDLP, CA	220	0		0		0	0	0	0	0
j . Engr. Spt.-FED	MIPR	NVESD	20	0		0		0	0	0	0	0
Subtotal:			3063	200		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203735A - Combat Vehicle Improvement Programs

PROJECT
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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 . FED Perf. Evaluation	CPIF	UDLP, CA	120	0		0		0	0	0	0	0
b . FED HTI Veh. Evaluation	CPIF	GDLS, MI	0	0		0		0	0	0	0	0
c . FED HTI Veh. Evaluation	CPIF	UDLP, CA	500	0		0		0	0	0	0	0
d . Field Test LWR	MIPR	RTTC, AL	68	0		0		0	0	0	0	0
e . Missile Warning LWR	MIPR	Naval Rsch, Wash, DC	35	0		0		0	0	0	0	0
f . LWR User Eval	MIPR	Eglin AFB, FL	375	0		0		0	0	0	0	0
g . LWR Tech Test	MIPR	Yuma, AZ	208	0		0		0	0	0	0	0
h . LWR User Eval	MIPR	Ft. Benning, GA	130	0		0		0	0	0	0	0
i . LWR User Eval	MIPR	Ft. Knox, KY	50	0		0		0	0	0	0	0
j . LWR User Eval	MIPR	Other	174	0		0		0	0	0	0	0
k . Abrams/Bradley Obsolescence/Digitization		GDLS/UDLP	0	750		0		0	0	0	0	0
Subtotal:			1660	750		0		0		0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203735A - Combat Vehicle Improvement Programs

PROJECT
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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 . In House Spt LWR	MIPR	PM GSI/PEO, MI	699	0		0		0	0	0	0	0
b . In House Spt FED	MIPR	PM GSI/ABRAMS, MI	895	0		0		0	0	0	0	0
c . In House Spt CGA			0	0		0		0	0	0	0	0
d . In House Spt PEO GCSS PM's			297	458		0		0	0	0	0	0
Subtotal:			1891	458		0		0		0	0	0
Project Total Cost:			49134	18951		12568		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203740A - Maneuver Control System**	**484**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
484 MANEUVER CONTROL SYSTEM (MCS)	42161	48454	40231	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This program element funds the evolutionary development, integration and testing of the Maneuver Control System (MCS). Project D484, Maneuver Control System (MCS) satisfies an urgent need for efficient command and control, (C2) of tactical operations on the battlefield. MCS is the Army's tactical C2 system used in command posts from corps to battalion to provide automated C2 for the commander and staff at and between echelons (i.e., Force Level Control). MCS is an essential component of the Army Battle Command System (ABCS) and provides critical coordination among Battlefield Functional Areas (BFAs) within each echelon. The primary component of Force Level Control is MCS's provision of the Common Tactical Picture (CTP). The CTP depicts information provided by all the Battlefield Functional Areas (BFAs) and includes a Situation Map (SITMAP) using Defense Mapping Agency map data to display friendly and enemy unit locations, control measures (e.g., boundaries, phase lines, etc.), Intelligence and Electronic Warfare graphics, Fire Support plans, combat service support location information, air corridors and air defense weapons control information.

MCS software is based on the OSD-DISA Common Operating Environment (COE) standard architecture with applications to automate C2 operations. The MCS Block IV software uses the Joint Mapping Tool Kit (JMTK), a Defense Information Infrastructure Common Operating Environment (DII COE) product, for terrain analysis, planning and SITMAP graphical displays. The Task Organization (TO) tool provides the commander and staff a means of organizing (graphically and textually) tactical Army units by echelon. Unit commanders and their staffs can quickly and efficiently prepare and disseminate combat orders with MCS's automated Operations Order (OPORD) generating tool. MCS report displays provide resource information roll-ups on all reporting battlefield units. MCS provides the Common Tactical Picture software supporting battlefield situation displays for all ATCCS BFAs. MCS provides the Army "ground track" segment of the joint tactical common picture to the Global Command and Control System-Army (GCCS-A).

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

FY 2000 Accomplishments

- 39121 Continue MCS Block IV software development.
- 1576 Participate in test events leading to Block IV IOT&E
- 1000 Integrate Tactical Voice Control
- 464 ABCS System Engineering and Integration efforts

Total 42161

FY 2001 Planned Program

- 37517 Continue MCS Block IV software development
- 8180 Planning and preparation for Block IV Initial Operational Test & Evaluation (IOT&E)
- 1366 ABCS System Engineering and Integration efforts
- 1391 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) programs

Total 48454

FY 2002 Planned Program

- 37643 Continue MCS Block IV software development
- 2588 Conduct Block IV IOT&E

Total 40231

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	45776	48910	14070	0
Appropriated Value	46125	48910	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR/STTR	-1193	0	0	0
c. Omnibus or Other Above Threshold Reductions	-183	0	0	0
d. Below Threshold Reprogramming	-2422	0	0	0
e. Recsissions	-166	-448	0	0
Adjustments to Budget Years Since FY2001 PB	0	-8	26161	0
Current Budget Submit (FY 2002/2003 PB)	42161	48454	40231	0

Funding: FY 2002 (+26161) Increase for continued MCS Block IV software development and conduct of the Block IV IOT&E.
FY 2003 (-1696) Funds realigned to higher priority requirements.
Schedule: MCS Block IV contract completion requires extension from FY02 to FY04.

C. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
BA9320 - Maneuver Control System (MCS)	23292	30570	6839	0	0	0	0	0	0	0
BS9710 - MCS Spares	0	0	499	0	0	0	0	0	0	0
BZ9962 - Standardized Integrated Command Post System (SICPS) for MCS	0	0	7489	0	0	0	0	0	0	0

D. Acquisition Strategy: The MCS acquisition strategy is based on modular development of application software, integrated with the common system software, hosted on the procured commercial off-the-shelf Common Hardware/ Software (CHS) computers and peripheral hardware. The current block of MCS software, Block IV, consists of development of two versions; MCS Version 6(FDD) and MCS Version 7(FDC). MCS Version 7(FDC) software will add applications and stand-alone functionality from MCS Version 6(FDD). Therefore, technical risk associated with each version is minimized. The use of CHS equipment enables the MCS to capitalize on state-of-the-art ruggedized, commercial equipment and reduce life cycle costs. MCS is moving to ruggedized commercial workstations and notebook computers to enhance software development, support and training. MCS will also integrate its CHS equipment into the Standardized Integrated Command Post System (SICPS) shelters.

E. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Participation in ABCS 6.X test events	1-4Q	1-4Q		0	0	0	0	0
Participation in FBCB2 Field Test 3		2Q		0	0	0	0	0
Participation in FBCB2 Field Test 4		4Q		0	0	0	0	0
Complete MCS V.6(FDD) Initial Operational Test & Evaluation			1Q	0	0	0	0	0
Participation in ABCS 7.0, 8.0,etc. test events			1-4Q	0	0	0	0	0

E. Schedule Profile (continued)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
MCS Block IV Milestone III Decision			3Q	0	0	0	0	0
Initial Operational Capability				0	0	0	0	0
Complete MCS V.7(FDC) Operational Assessment/Operational Test				0	0	0	0	0
Evolving Software Upgrades				0	0	0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203740A - Maneuver Control System

PROJECT
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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 . Block IV (LMC) (See Remarks)	C/CPAF	Lockheed Martin Corp., Tinton Falls, NJ	70652	26889	1-3Q	26972	1-3Q	0	0	0	0	0
b . Other Contracts	C/Various		8382	3077	1-2Q	3820	1-2Q	0	0	0	0	0
c . Technical Support	MIPR	CECOM	4510	2571	1-2Q	2674	1-2Q	0	0	0	0	0
d . In-house			4775	1759	1-4Q	1830	1-4Q	0	0	0	0	0
e . PSE H/W & S/W	C/Various		1341	200	3Q	0		0	0	0	0	0
f . MITRE System Engineering	CPFF	MITRE Corp., Eatontown, NJ	3665	1935	1Q	1218	1Q	0	0	0	0	0
g . ABCS SE&I	MIPR	PEO C3S	464	1366		0		0	0	0	0	0
h . SBIR/STTR			0	1391		0		0	0	0	0	0
Subtotal:			93789	39188		36514		0		0	0	0

Remarks: MCS Block IV contract requires extension from FY02 to FY04 in order to complete Version 7 software delivery.

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203740A - Maneuver Control System

PROJECT
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House			1811	681	1-4Q	708	1-4Q	0	0	0	0	0
b . Other Contracts	C/Various		1122	405	1-2Q	421	1-2Q	0	0	0	0	0
Subtotal:			2933	1086		1129		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 . OGA	MIPR	Various	400	1050	1-2Q	300	1-2Q	0	0	0	0	0
b . Other Contracts	C/Various		1347	750	1-2Q	788	1-2Q	0	0	0	0	0
c . Operational Test/Planning	MIPR	Various	442	6380	1-2Q	1500	1Q	0	0	0	0	0
Subtotal:			2189	8180		2588		0		0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203740A - Maneuver Control System

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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 . None			0	0		0		0	0	0	0	0
Subtotal:			0	0		0		0		0	0	0
Project Total Cost:			98911	48454		40231		0		0	0	0

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

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Prog

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		74347	106831	143631	0	0	0	0	0	0	0
028	GUARDRAIL COMMON SENS/AERIAL COMMON SENS (TIARA)	7104	13160	25873	0	0	0	0	0	0	0
179	CH-47D PRODUCT IMPRV	0	0	506	0	0	0	0	0	0	0
430	IMPR CARGO HELICOPTER	27088	36855	18611	0	0	0	0	0	0	0
504	BLACK HAWK RECAPITALIZATION/MODERNIZATION	9547	29634	58445	0	0	0	0	0	0	0
508	APACHE 2ND GENERATION FLIR	30608	17274	40196	0	0	0	0	0	0	0
50A	APACHE ADVANCED ROTOR AND DRIVE SYSTEM	0	9908	0	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This PE provides for development of modifications and improvements for the Guardrail Common Sensor/Aerial Common Sensor, the Improved Cargo Helicopter (ICH), the UH-60A/L Black Hawk Recapitalization/Modernization, and the Apache 2nd Generation Forward Looking Infrared(FLIR) and new FY 2001 project 50A Apache Advanced Rotor and Drive System.

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	80786	95829	98634	0
Appropriated Value	81644	107829	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-2144	0	0	
c. Omnibus or Other Above Threshold Reductions	-329	0	0	
d. Below Threshold Reprogramming	-4295	0	0	
e. Rescissions	-529	-998	0	
Adjustments to Budget Years Since FY2001 PB	0	0	44997	
Current Budget Submit (FY 2002/2003 PB)	74347	106831	143631	0

Changes from previous submission for FY 2002 include increase in funding of $11.2 million for Guardrail Common Sensor/ACS to fund developmentof Aerial Common Sensor System, $12.0 million for Improved Cargo Helicopter to continue development, $19.8 million for Blackhawk modernization, and other miscellaneous minor adjustments.

Changes from previous submission for FY 2003 include increase of $38.2 million to fund development of the Aerial Common Sensor offset, by a decrease of $20.7 million for Apache Second Gen FLIR (SGF) due to Congressional acceleration of this program in FY 00, and other miscellaneous minor adjustments.

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203744A - Aircraft Modifications/Product Improvement Prog**	**028**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
028	GUARDRAIL COMMON SENS/AERIAL COMMON SENS (TIARA)	7104	13160	25873	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The Aerial Common Sensor (ACS) and the Guardrail Common Sensor (GRCS) are airborne intelligence collection systems required to provide critical support to U.S.-based early entry, forward deployed forces, and to support the Army's seamless intelligence architecture. ACS is the objective force system that will satisfy the Army's critical need for a worldwide, self-deployable, airborne reconnaissance, intelligence, surveillance and target acquisition (RISTA) capability that can immediately begin operations when arriving in theatre. The ACS will merge the current Airborne Reconnaissance Low (ARL) and Guardrail Common Sensor (GRCS) capabilities into a single airborne system capable of providing a rapid response information dominance capability to Land Component Commanders required in the early 21st Century. ACS will be composed of a family of modular sensors mounted on an airborne platform that is capable of operating independently or remotely via SATCOM or line-of-sight datalinks from a ground processor. ACS will be interoperable within the open Network centric C4ISR architecture and support all combat and combat support functions through the emerging DOD "global infosphere". The primary mission will be standoff Signals Intelligence (SIGINT) collection, with a secondary mission of overflight Imagery Intelligence (IMINT). ACS ground functionality will be an element of the Distributed Common Ground Station-ARMY(DCGS-A). ACS is primarily targeted against threat maneuver forces, logistic areas, rocket and artillery forces, air defense artillery, command control communications and intelligence nodes (C3I); and tactical fixed -wing, rotary wing and unmanned aerial vehicles. ACS/GRVII will satisfy unique Army/Land Force Commander Intelligence, Surveillance and Reconnaissance (ISR) and targeting requirements, and those of the Land Force Component of Joint and Combined Task Forces (JTF and CTF) across the spectrum of Operations.

This project is assessing Horizontal Technology Integration (HTI) candidates for the SIGINT mission equipment including the Low Band (LBSS) and High Band (HBSS) subsystems being developed by the Airspace System Command/Reconnaissance Airborne Joint (ASC/RAJ) Program Office. The incorporation of the HBSS/LBSS subsystems would provide compatibility to allow interoperability with the other services SIGINT platforms. A key consideration is the affordability of these subsystems. The National Security Agency's Defense Cryptologic Program (DCP) provides funding to support enhanced SIGINT capabilities.

The FY02 funding completes the Concept Exploration (CE) Phase that identifies an airborne platform recommendation which best supports the multi-mission role of ACS, sensor recommendations, cost performance analysis, performance specifications and development of modeling and simulations tools for evaluating performance and proposals. FY02 and FY03 funding will be used to continue development and risk reduction efforts including Prime Mission Equipment (PME) advanced development and integration efforts. FY02 funding supports decision review to enter into the Component Advanced Development (CAD) Phase and FY03 supports Milestone B and entry into System Development and Demonstration (SDD) Phase. FY02-FY03 funding also supports efforts to maintain currency of the GRCS fielded systems modifying current system software to incorporate additional signals of interest. In addition to the software modifications, an upgrade implementation plan will be developed along with an Interface Control Document (ICD) that describes the connection and interface requirements for integrating GOTS/COTS hardware into the system architecture and host platform. The plan and ICD will provide a pathway to upgrade the fielded systems to intercept, recognize and locate advanced commercial, digital signals.

ACS supports the Objective transition path of the Transformation Campaign Plan.

FY 2000 Accomplishments

- 3810 Awarded agreements for Aerial Common Sensor (ACS) concept exploration (e.g. System design, modeling and simulation).
- 1825 Awarded contracts for the development of operational and evaluation models to visualize the performance/functionality of ACS within the threat environment.
- 1469 Modeling Evaluation Support, Agreement Evaluation Support and Program Office Support

Total 7104

FY 2001 Planned Program

- 3910 Continue initial phase of ACS concept exploration agreements.
- 3194 Complete initial operational performance and evaluation models for ACS.
- 2461 Award contract(s) for Guardrail Common Sensor (GRCS) fielded systems enhancements; upgrade data transport systems and modify system software to incorporate additional signals of interest. Develop implementation plan with an Interface Control Document (ICD) for system upgrades.
- 2000 Provide Tactical Information Broadcast Service (TIBS) capability in GRCS System 2.
- 1595 Modeling and Program Office support.

Total 13160

FY 2002 Planned Program

- 3000 Concept Exploration (CE) agreements/Component Advanced Development (CAD) bridge contract to support Milestone process.
- 360 Component Advanced Development (CAD) performance specification analysis and source selection.
- 16899 ACS CAD contract award(s) will transition virtual system concept and vet it into a system architecture and relevant integration environment.
- 3200 Continue contract(s) for fielded systems enhancements including efforts to productize Defense Cryptologic Program Technologies for GRCS.

FY 2002 Planned Program (Continued)

- 2414 Modeling, Program office, and Decision Review support for entry into CAD.

Total 25873

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Defense Cryptologic Program (DCP)	14451	12304	22385	0	0	0	0	0	0	0
Joint Airborne SIGINT family (from ASC/RAJ)	1000	3000	5800	0	0	0	0	0	0	0
0305206/DK98 Tactical Reconnaissance	0	0	4903	0	0	0	0	0	0	0
A02005 Aerial Common Sensor- Aircraft Procurement, Army	0	0	0	0	0	0	0	0	0	0

FY02-FY07 DCP increased to provide funding for technologies to maintain relevancy of GRCS and other legacy systems. FY00-FY03 JASF funding reflects support to ASC, not funding recieved by AF for development of JASF products. Tactical Reconnaissance funds MASINT/IMINT technologies that will be integrated into ACS during SDD Phase.

C. Acquisition Strategy: The Aerial Common Sensor Concept Exploration Agreements were awarded on a competitive basis using Other Transaction Agreements and shared contractor investment. Requirements are to analyze/recommend an architecture to include an airframe that integrates Signals Intelligence (SIGINT) and non-SIGINT suites, e.g. Moving Target Indicator (MTI)/Synthetic Aperture Radar (SAR), Electro Optic/Infrared (EO/IR), etc. The contractor will be required to provide the integration analysis, modeling and simulation packages and a proposed airframe for a total system recommendation. Following evaluation of the recommendations new limited competitive, contract(s) will be awarded in FY2002 to begin risk reduction efforts. The contractor/s will be required to support the program through a milestone approval of the aircraft and sensor suites. The SIGINT payload for ACS could be comprised of scaled HBSS and LBSS subsystems being developed by the ASC/RAJ under separate action with additional enhancements being funded under the ACS DCP program. The acquisition strategy for the GRCS upgrades will be through task orders against omnibus contracts that team multiple contractors.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
ACS Concept Exploration Agreements	3-4Q	1-4Q	1-2Q	0	0	0	0	0
GRCS upgrade contracts		2-4Q	1-4Q	0	0	0	0	0
Decision Review for ACS Component Advanced Development (CAD)			1Q	0	0	0	0	0
ACS CAD Contract(s)			2-4Q	0	0	0	0	0
Field TIBS capablilty to GRCS System 2			3Q	0	0	0	0	0
ACS Milestone B Decision				0	0	0	0	0
ACS SI Contract				0	0	0	0	0
Field GRCS software modifications				0	0	0	0	0
Flight test GRCS upgrades				0	0	0	0	0
Conduct ACS SI Demonstration				0	0	0	0	0
ACS System Demonstration (SD) Phase Decision Review				0	0	0	0	0
ACS SD Contract				0	0	0	0	0
ACS SD DT/OT				0	0	0	0	0
ACS IOT&E				0	0	0	0	0
ACS MS C, Full Rate Production (FRP) Decision Review				0	0	0	0	0
Begin ACS FRP				0	0	0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Prog

PROJECT
028

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Concept Evaluation Agreement	C-FP	Raytheon; Greenville, TX	875	1110	2Q	1000	1Q	0	0	0	0	0
b . Concept Evaluation Agreement	C-FP	Lockheed Martin; Palmdale, CA	1535	1800	1-2Q	1000	1Q	0	0	0	0	0
c . Concept Evaluation Agrement	C-FP	Northrup Grumman, Baltimore, MD	1400	1000	1Q	1000	1Q	0	0	0	0	0
d . GRCS Data Transport Contract	SS-CPFF	L3Comm, Salt Lake City, Utah	0	2000	2Q	300	1Q	0	0	0	0	0
e . GRCS Omnibus contract	SS-FP	TRW, Sunnyvale, CA.	0	461	2Q	2900	1Q	0	0	0	0	0
f . TIBS Installation into GRCS System 2	C-CPFF	Mutiple	0	2000	2Q	0		0	0	0	0	0
g . ACS CAD Contract(s)	C-CPXF	TBD	0	0		16899	2Q	0	0	0	0	0
h . ACS System Integration Contract	C-CPXF	TBD	0	0		0		0	0	0	0	Continue
Subtotal:			3810	8371		23099		0		0	0	Continue

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Prog

PROJECT
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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 . ACS Operational Performance Model	SS-CPFF	Raytheon System Dev. Marlborough, MA	1500	2120	1Q	0		0	0	0	0	0
b . Model Evalution Support		Multiple	325	1074	1Q	450	1Q	0	0	0	0	0
c . ASARC Support	C-CPFF	CSC, Falls Church, VA	50	160	1Q	60	1Q	0	0	0	0	Continue
Subtotal:			1875	3354		510		0		0	0	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering Support	C-CPFF	CACI Technologies; Chantilly, VA	600	400	2Q	0		0	0	0	0	0
b . Engineering Support	C-CPFF	Multiple	0	300	2Q	460	1Q	0	0	0	0	Continue
c . AEC Support	C-CPFF	TBD	0	80	2Q	180	1Q	0	0	0	0	Continue
d . Analysis and Evaluation of CAD Products	TBD	TBD	0	0		0		0	0	0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Prog

PROJECT
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III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			600	780		640		0		0	0	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	MIPR	PM, Signals Warfare	171	300	2Q	690	1Q	0	0	0	0	Continue
b . Matrix Support	MIPR	HQ, CECOM	648	355	1-2Q	934	1-2Q	0	0	0	0	Continue
Subtotal:			819	655		1624		0		0	0	Continue
Project Total Cost:			7104	13160		25873		0		0	0	Continue

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203744A - Aircraft Modifications/Product Improvement Prog**	**430**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
430 IMPR CARGO HELICOPTER	27088	36855	18611	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The Improved Cargo Helicopter (ICH) is a recapitalization program to extend the useful life of the CH-47D Cargo helicopter. This funding will assure heavy lift capability into the 21st century. This program awarded a contract for Engineering Manufacturing Development (EMD) which includes decreasing operation and support costs through vibration reduction/airframe stiffening, incorporating a new electronics/architecture system for compatibility with the digital battlefield and structural modifications as necessary to extend the life of the airframe. This program will be the basis for establishing remanufacture, modernization, and upgrade program to meet the readiness needs of the future for heavy lift capability. The ICH Program will include testing of the two engineering development models plus component testing for Live Fire. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 23840 Continue Engineering Manufacture Development (EMD)
- 1411 Continue In-house and program management administration
- 1837 Continue Government Test & Evaluation

Total 27088

FY 2001 Planned Program

- 28074 Continue Engineering Manufacture Development (EMD)
- 1506 Continue In-house and program management administration
- 5675 Continue Government Test & Evaluation; 2 EMD Models delivered for Testing
- 1600 Total Operating Cost Reduction (TOCR) Initiative

Total 36855

FY 2002 Planned Program

- 14389 Continue Engineering Manufacture Development (EMD)
- 326 Continue In-house and program management administration
- 3896 Continue Government Test & Evaluation

Total 18611

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
APA, SSN AA0254, CH-47 ICH	0	83061	0	0	0	0	0	0	0	0
APA, SSN AA0252, CH-47 CARGO HELICOPTER MODS (MYP)	0	0	138673	0	0	0	0	0	0	0

Increase in FY04-07 for recapitalization

C. Acquisition Strategy: The ICH will recapitalize aging fleet and bridge the gap until the development of a follow-on aircraft. This will be achieved in a cost effective manner as the ICH program will be based on a four-pronged recapitalization approach which will include rebuilding the airframe, recapitalizing dynamic components, improving mission capability, and reducing vibrations to provide for longer term O&S cost reductions. There will be two Low Rate Initial Production (LRIP) lots to ramp up full rate production.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
EMD Contract & Funding Increments	1Q	2Q	1Q	0	0	0	0	0
Critical Design Review (CDR)	1Q			0	0	0	0	0
IPF		3Q		0	0	0	0	0
LL/LRIP I Award			1Q	0	0	0	0	0
Initial Oper Test & Eval (IOTE)			2Q	0	0	0	0	0
LRIP II Award				0	0	0	0	0
MS III				0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Prog

PROJECT
430

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	CPIF	Various	73569	28074	2Q	14389	1Q	0	0	0	0	0
b . TOCR	CPIF	Various	0	1600	3Q	0		0	0	0	0	0
Subtotal:			73569	29674		14389		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 . PMO/OGA	Reimbursable	Various government	9982	1506		326		0	0	0	0	0
Subtotal:			9982	1506		326		0		0	0	0

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7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Prog

PROJECT
430

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	Reimbursable	Various government	3784	2875		2621		0	0	0	0	0
b . Live Fire Test & Eval	Reimbursable	Contract/Govt	2243	2750		1275		0	0	0	0	0
c . Live Fire Test & Eval	Contract		0	50	2Q	0		0	0	0	0	0
Subtotal:			6027	5675		3896		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 . CAMBER/Westar	SS/FP	Huntsville, AL	3901	0		0		0	0	0	0	0
Subtotal:			3901	0		0		0		0	0	0
Project Total Cost:			93479	36855		18611		0		0	0	0

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June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203744A - Aircraft Modifications/Product Improvement Prog**	**504**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
504	BLACK HAWK RECAPITALIZATION/MODERNIZATION	9547	29634	58445	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The UH-60 Black Hawk will serve as the Army's utility helicopter in the Objective Force. It is used for air assault, general support, aeromedical evacuation (MEDEVAC), and command and control in active and reserve component theater, corps, division, and table of distribution and allowances units. The UH-60A entered service in fiscal year 1978 (FY78), and the newer model UH-60L in FY89. The Army continues to procure UH-60L helicopters today. The Army has established a recapitalization goal for its systems of maintaining the fleet's average age at the design half-life or less. The UH-60 was designed for a 20 year service life. The oldest UH-60As are now over 23 years old, and the average age of the UH-60A fleet is 18 years old. The increased operational tempo, coupled with the technological age of the basic airframe, components, and systems, is having an adverse impact on the operational readiness (OR) and operating and support (O&S) costs of the over 1500 aircraft UH-60 fleet. In addition, the UH-60A/L helicopters lack the necessary digital avionics architecture to meet current and future Army and Joint Service interoperability communication requirements. The Army has determined that a recapitalization/upgrade program is required to address these issues. An Operational Requirements Document (ORD) for recapitalization of the Black Hawk fleet was approved by the Joint Requirements Oversight Council in March, 2001. The ORD describes an evolutionary, block approach to transform the utility helicopter force to one that is more deployable, responsive, and less expensive to operate. Block 1 recapitalizes the oldest UH-60A Black Hawks to the UH-60M configuration. The UH-60M selected upgrade includes airframe service life extension, structural improvements, upgrade of the propulsion system (UH-60A T700-GE-700 engine and drive train to UH-60L T700-GE-701C engine and drive train), and a digital cockpit. The UH-60M provides a common platform for the modernized air ambulance MEDEVAC medical mission equipment package (MEP). RDTE funds are required to develop, integrate, test and qualify the UH-60M configuration. This effort supports the Legacy-to-Objective path of the Transformation Campaign Plan.

FY 2000 Accomplishments

- 543 Initiated Depot Partnership Study by Sikorsky Aircraft Company to determine optimal work mix between Sikorsky, the depots and other concerns.
- 2293 Initiated more than 40 Trade Studies and supported Cost As An Independent Variable (CAIV). Trade studies include new versus remanufactured cabin and 2 versus 4 multifunctional displays.
- 774 Initiated Software (SW) Development, i.e., Joint Technical Compliance Matrix - Army, Software Development Plan and software requirements specifications.

FY 2000 Accomplishments (Continued)

- 4813 Performed Risk Reduction activities, i.e., initiated earned value management, executed risk management planning and assessments, development of Integrated Master Schedule.
- 1124 Initiated preparation of the Master Test Program Plan and detailed test schedule. Began planning for execution of Early User Demonstration #1.

Total 9547

FY 2001 Planned Program

- 5908 Initiate assessment and design activities required for recapitalization/upgrade of UH-60M airframe, avionics and power plant.
- 542 Initiate Producibility Engineering and Planning (PEP) to validate production processes and methods.
- 15411 Initiate Test Article Induction, Preparation/Teardown and Fabrication (4 test articles: UH-60A to UH-60M, L to M, A to MEDEVAC, New Production UH-60M) to include airframe and system System Requirements Review and airframe Preliminary Design Review.
- 371 Initiate Training Course preparation to include Training Program Structure Document, Staff Planners Course and operator's training and maintenance training.
- 2942 Test Planning and Execution - Initiate plans; prepare and conduct Early User Demonstration #1 and #2; begin software integration at Systems Integration Lab (SIL); Qualification of Component/Subsystems; live fire planning & begin Component Live Fire Test.
- 1148 Begin implementation of Continuous Acquisition and Life-Cycle Support (CALS)/Contractor Integrated Technical Information System (CITIS) and delivery of technical drawings and Interface Control Documents (ICDs).
- 163 Deliver initial Depot Partnership Study Report.
- 2268 Continue Software (SW) development - update software requirements specifications and multiplex interface control documents and prepare software design descriptions.
- 881 Small Business Innovative Research/Small Business Technology Transfer Program

Total 29634

FY 2002 Planned Program

- 16285 Complete design of airframe, avionics and powerplant to include airframe Critical Design Review.
- 6310 Continue Producibility Engineering and Planning (PEP) as well as manufacturing planning and control.
- 12760 Complete build and delivery of four test articles to support Development Testing.
- 2090 Preparation of training documentation for Logistics Demonstration Familarization Course, Government Test Pilot Familiarization Course and Test Players Training Course.
- 12570 Initiate Development Testing; complete Component/Subsystem live fire phase 1.
- 460 Deliver CALS/CITIS technical drawings and interface control documentation updates to the allocated baseline specifications.
- 410 Continue Depot Partnership Study data collection for midyear update to reflect input from test article build.
- 7560 Continue software development to include failure modes and effects criticality analysis and preliminary software design descriptions. Continue development and qualification testing of mission critical computer resources.

Total 58445

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June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203744A - Aircraft Modifications/Product Improvement Prog**	**504**

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
AA0492 UH-60 MODS	12654	23305	52269	0	0	0	0	0	0	0

C. Acquisition Strategy:: The UH-60 Black Hawk will serve as the Army's utility helicopter in the Objective Force. The recapitalization/upgrade of the legacy UH-60 fleet for the interim/objective force will be accomplished using an evolutionary, block approach to transform the system. The Block 1 program will selectively upgrade the UH-60A/L fleet to the UH-60M configuration. This includes airframe structural improvements, a propulsion upgrade, and a digital cockpit that will meet lift, range, survivability, and interoperability requirements while decreasing O&S costs. This will extend the useful life of these aircraft another 20 years, or through the FY25 time frame. These improvements will be accomplished through integration of existing technologies, by upgrading the UH-60A propulsion system to that currently in the UH-60L, and by adding the UH-60Q advanced MEDEVAC medical equipment package (MEP) to the air ambulance fleet. This program addresses current UH-60 fleet aging problems such as decreasing operational readiness (OR) and increasing O&S costs, including all top-ten cost drivers, and provides a common, modernized platform for the UH-60 utility and MEDEVAC fleet of the future. The program will be executed over four phases: pre-System Development/Demonstration Phase (FY00-01), System Development/Demonstration Phase (FY01-03), Production/Readiness Phase (FY03-05), and Operations and Sustainment Phase (FY05-FY25).

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Depot Partnership Study	4Q	1-4Q	1-4Q	0	0	0	0	0
Milestone B		2Q		0	0	0	0	0
Depot Partnership Prove-Out				0	0	0	0	0
Test Article Delivery for Testing			3-4Q	0	0	0	0	0
Integration/Qualification (I/Q) Contract Award		3Q		0	0	0	0	0
System Critical Design Review (CDR)			1Q	0	0	0	0	0
Milestone C				0	0	0	0	0
LRIP Lot I Contract Award				0	0	0	0	0
LRIP Lot 2 Contract Award				0	0	0	0	0
Full Rate Production IPR				0	0	0	0	0
First Unit Equipped (FUE)				0	0	0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Prog

PROJECT
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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 . Design, Integration & Qualification Contract	SS/CPAF	Sikorsky Aircraft Co 30 Moffitt Street Stratford, CT 06601	8379	23136	3Q	50668	1Q	0	0	0	0	0
b . Development Support - Organic	WR	UH PMO/matrix	872	2589	1-4Q	3007	1-4Q	0	0	0	0	0
c . Development Support - Contractor	C/FP	O2K Contractors	0	1763	1-4Q	667	1-3Q	0	0	0	0	0
Subtotal:			9251	27488		54342		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 . Cost Analysis Support	WR	AMCOM Matrix	160	210	1-4Q	0		0	0	0	0	0
Subtotal:			160	210		0		0		0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
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PROJECT
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Planning, Test and Evaluation	MIPR	Various Activities	45	395	1-3Q	1226	1-4Q	0	0	0	0	0
Subtotal:			45	395		1226		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Support - Organic		UH PMO/matrix	91	272	1-4Q	1666	1-4Q	0	0	0	0	0
b . PM Support - Contract	C/FP	O2K Contractor	0	388	1-3Q	1211	1-3Q	0	0	0	0	0
c . SBIR/STIR			0	881		0		0	0	0	0	0
Subtotal:			91	1541		2877		0		0	0	0
Project Total Cost:			9547	29634		58445		0		0	0	0

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203744A - Aircraft Modifications/Product Improvement Prog**	**508**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
508	APACHE 2ND GENERATION FLIR	30608	17274	40196	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Apache Second Generation Forward Looking Infrared (FLIR) is a U.S. Army program to develop, test, integrate and produce a Second Generation FLIR (SGF) for the Army's entire fleet of AH-64A and AH-64D aircraft. The FLIR system enables for pilotage of the aircraft and the engagement of targets during night operations and adverse weather conditions. The Apache SGF project will leverage technology already invested in electronics, sensors and optics to provide the best sensor available at the lowest cost. The SGF enhancements, over the present Apache FLIR, include increased range for detection, recognition and identification of targets; higher resolution and improved sensitivity for improved safety and pilotage performance, especially in adverse weather; increased capability to identify friend versus foe during hostilities; and increased reliability with a corresponding reduction in O&S costs. These enhancements will improve the overall warfighting capability of the Apache aircraft by: 1) significantly enhancing the pilot's visibility and safety while improving target designation and acquisition; 2) providing improved clarity and ability to fly and navigate using advanced FLIR imagery; 3) improving aircraft survivability with increased standoff ranges; and 4) reducing the risk of fratricide.
This system supports the Legacy ("L") transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 22802 Engineering & Manufacturing Development (EMD) Contract
- 4406 Standard Advanced Dewar Assembly (SADA1) Contract
- 3400 In-house & Program Management Administration/Complete Source Selection Evaluation (SSEB) for EMD Program.

Total 30608

FY 2001 Planned Program

•	9300	Continue EMD Contract for 2nd Generation FLIR Development/PDR/CDR/First Prototype Delivery/T&E
•	3874	SADA1 Contract/Spt
•	2000	Test and Evaluation - Government
•	2100	Continue In-house and Program Management Administration
Total	17274	

FY 2002 Planned Program

•	20100	Continue EMD Contract for 2nd Generation FLIR Development/Prototype Deliveries/T&E
•	18096	Test and Evaluation - Government (Qualification Testing -Air Worthiness Release - Operational Testing)
•	2000	Continue in-house and Program Management Administration
Total	40196	

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203744A - Aircraft Modifications/Product Improvement Prog**	**508**

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
APA, BA 2, AA6606, AA6607, AA0978, AA6608, Mods; RDTE, BA 7, Proj #50A PE 2374A	849339	813572	957937	0	0	0	0	0	0	0

C. Acquisition Strategy: A cost plus incentive fee (CPIF) type EMD contract was awarded to Team Apache Systems (TAS) on 18 Oct 00. Six prototypes will be designed, developed and tested. The program will culminate with qualification flight testing on the Apache Attack Helicopter. The design will be compatible with both the A and D model Apache helicopters.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
SSEB	2-4Q			0	0	0	0	0
Receive Proposals	2Q			0	0	0	0	0
Contract Award		1Q		0	0	0	0	0
PDR/CDR		2-3Q		0	0	0	0	0
Prototype Deliveries		4Q	1-2Q	0	0	0	0	0
Qual Testing			2Q	0	0	0	0	0
Air Worthiness Release			2Q	0	0	0	0	0
Flight Testing			3Q	0	0	0	0	0
Follow-up Testing				0	0	0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Prog

PROJECT
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . EMD Contract -- 2nd Gen FLIR (SGF)	C, CPIF	Team Apache Systems (TAS), Orlando, FL	22802	9300	1Q	20100	1Q	0	0	0	0	0
b . SADA1 Contract/Spt	SS, CPIF	DRS Infrared Tech, L.D.; CECOM, N.J	4406	3874	2Q	0		0	0	0	0	0
Subtotal:			27208	13174		20100		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 . NONE			0	0		0		0	0	0	0	0
Subtotal:			0	0		0		0		0	0	0

Remarks: None

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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 . GOV'T Qual, Air Worth, Demo, Follow-On Testing		ATTC	0	2000		18096		0	0	0	0	0
Subtotal:			0	2000		18096		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Prog Mgt & Admin, SSEB	NA	PEO AVN REDSTONE ARSENAL, AL	3400	2100		2000		0	0	0	0	0
Subtotal:			3400	2100		2000		0		0	0	0
Project Total Cost:			30608	17274		40196		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203752A - Aircraft Engine Component Improvement Program**	**106**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
106 A/C COMPON IMPROV PROG	3757	5873	13017	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

Aircraft Engine Component Improvement Program (CIP) develops, tests, and qualifies improvements to aircraft engine components to correct service-revealed deficiencies, improve flight safety, enhance readiness and reduce operating and support (O&S) costs. In addition, CIP provides the test vehicles for the testing and qualification efforts required as a part of the Army's Flight Safety Parts program. CIP is included in the RDTE budget vice procurement appropriations in accordance with congressional direction. This system supports the Legacy to Objective (LO) transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 1365 T700 Engine: Started the development of the Improved 701C engine to reduce O&S costs and improve engine on-wing time. Complete heat transfer analysis and start stress analysis modeling for the Power Turbine Module model to re-analyze and update service life limits. Continued development of new repair procedures for high-dollar hardware. Continued work on the GGT spin pit testing to validate service life models. Completed Blackhawk Digital Electronic Unit (DECU) EMI testing to qualify internal component replacement due to obsolescence.
- 909 T55 Engine: Continued qualification of new plumbing system to improve safety, and reduce weight and O&S costs while improving reliability. Continued development of new depot/field level repair procedures to reduce O&S costs and improve readiness. Completed life analysis of GA-714A compressor and turbine sections for improved flight safety. Completed 150 hour endurance test for bearing improvements. Investigated compressor case, impeller shroud, coating delamination on repaired compressor cases.
- 916 Fuel Delivery Units: Development of new technology that is adaptable to fuel delivery units for gas turbine engines.
- 357 GTCP 36 APU: Relocated and redesigned Fuel Solenoid Bracket to preclude damage/fire hazard; Life Analysis of compressor and turbine wheels to insure safe operation. Redesigned gearbox venting system to eliminate excessive oil leakage during cold weather starting.
- 80 IN-HOUSE: In-house support for the CIP engineers.
- 95 Redstone Technical Test Center (RTTC): Digital Electronic Control Unit (DECU) 2000 Support
- 35 Camber: Support of Subsystem Power Unit (SPU)/Fuel Delivery Unit (FDU) and Reversionary Channel Fully Authority Digital Engine Control (FADEC).

Total 3757

FY 2001 Planned Program

•	1460	T700 Engine: Continue the development of the Improved 701C engine to reduce engine O&S costs and improve engine on-wing time. Complete stress analysis modeling and start life analysis modeling for the Power Turbine Module to re-analyze and update service life limits. Perform Apache Digital Electronic Unit (DECU) EMI testing to qualify internal component replacement due to obsolescence. Begin analysis of Titanium Nitride compressor coating for improved on-wing time and reduced O&S costs.
•	941	T55 Engine: Continue development of new repair procedures to reclaim high dollar hardware. Continue applying engineering effort to unanticipated flight safety problems revealed in the field and provide timely support. Complete life analysis of -714 engine. Complete qualification of enhanced plumbing system. Complete bearing redesign qualification testing to optimize all current mainshaft and accessory bearing designs and reduce the overall O&S costs. Design and qualify an improved Stage 2 Disk to improve life and reduce O&S costs. Design and qualify an improved bleed system to improve reliability and reduce support costs.
•	190	T62T APU: Perform component life analysis to determine compressor and turbine wheel safe life limits.
•	178	GTCP 36 APU: Conduct field evaluation of longbow APU oil venting solution. Complete the Dual Alloy Turbine Wheel Development program to improve durability, extend service life, and reduce cost.
•	67	IN-HOUSE: In-house support for the CIP engineers.
•	1800	Design, develop and test a "universal" FADEC utilizing new technology for improved obsolescence resistance and reduced costs.
•	10	Funds provided to Redstone Technical Test Center for Digital Electronic Control Unit (DECU) 2000 support.
•	1000	FDUs: Development of new technology that is adaptable to fuel delivery units (FDU) for gas turbine engines. Develop and qualify a fuel delivery unit for the RAH-66 Comanche Secondary Power Unit (SPU)
•	54	Support Contract for the FDU and FADEC.
•	173	Small Business Innovative Research (SBIR) and Science and Technology Transfer (STTR)
Total	5873	

FY 2002 Planned Program

- 10950 T700 Engine: Continue the development of the Improved 701C engine to reduce engine O&S costs and improve engine on-wing time. Complete Power Turbine Module life analysis modeling and update service life limits. Start development of the Full Authority Digital Electronic Control (FADEC) for the 701C engine to reduce O&S Costs and improve flight safety. Develop an internal coating for the Stage 2 Turbine nozzle to improve on-wing time and reduce O&S costs. Develop a reduced leakage Compressor Discharge Pressure (CDP) seal to improve on-wing life and reduce O&S costs.
- 1398 T55 Engine: Continue development of new repair procedures to reclaim high dollar hardware. Continue applying engineering effort to unanticipated flight safety problems revealed in the field and provide timely support. Continue Improved Bleed System Qualification. Design and qualify an improved 1st Stage GP Nozzle to increase on-wing life and reduce O&S costs. Complete the qualification of the improved tailpipe to reduce removals and O&S costs.
- 280 GTCP36 APU: Determine root cause of Apache gearbox mechanical failures. Update initial cost driver analysis done in 1997 with latest depot repair data. Design a common digital Electronic Control Unit (ECU) for the Apache, Longbow, and Black Hawk APUs. Perform Dual Alloy Turbine Wheel containment analysis.
- 325 T62T APU: Perform Spin Pit Testing to validate compressor wheel life analysis.
- 64 IN HOUSE: In-house support for the CIP engineers.

Total 13017

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	3859	2929	3108	0
Appropriated Value	3900	5929	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-102	0	0	0
c. Omnibus or Other Above Threshold Reductions	-16	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-25	-56	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	9909	0
Current Budget Submit (FY 2002/2003 PB)	3757	5873	13017	0

Increases to FY 2002 and FY 2003 were provided to support component reliability for the UH-60M program.

C. Other Program Funding Summary: There are no other RDTE or other Appropriation efforts.

D. Acquisition Strategy: Improved designs will be implemented via Engineering Change Proposal (ECP) and follow-on procurement or modification to a production contract to introduce the improved hardware.

E. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
T700 - Begin Development of Improved 701C Engine	4Q			0	0	0	0	0
T700 - PT Heat Transfer/Stress Analysis	4Q			0	0	0	0	0
T700 - GGT Spin Pit Testing	3Q			0	0	0	0	0
T700 - Continue Development of Improved 701C Engine		2Q		0	0	0	0	0
T700 - PT Stress Analysis Modeling		2Q		0	0	0	0	0
T700 - Apache DECU EMI Testing		2Q		0	0	0	0	0
T700 - Begin Analysis on TIN Coating		3Q		0	0	0	0	0
T700 - Continue Development of Improved 701C Engine			2Q	0	0	0	0	0
T700 - Complete PT Life Analysis			2Q	0	0	0	0	0
T700 - Start Development of 701C FADEC			2Q	0	0	0	0	0
T700 - Develop Stage 2 Nozzle Internal Coating			2Q	0	0	0	0	0
T700 - Develop Reduced Leakage CDP Seal			2Q	0	0	0	0	0
T700 - Continue Development of Improved 701C Engine				0	0	0	0	0
T700 - Complete Qualification of CDP Seal				0	0	0	0	0
T700 - Redesign to Eliminate Rare/Precious Materials				0	0	0	0	0

E. Schedule Profile (continued)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
T55 - Complete Qualification of Hard Line Plumbing System		4Q		0	0	0	0	0
T55 - Continue Development of New Repair Procedures and Providing Flight Safety Spt		4Q		0	0	0	0	0
T55 - Complete Bearing Redesign Qualification Testing		4Q		0	0	0	0	0
T55 - Design and Qualify Improved Stage 1st GP Nozzle			4Q	0	0	0	0	0
T55 - Design and Qualify Improved Stage 2 Disk			4Q	0	0	0	0	0
T55 - Complete the Qualification of Improved Tailpipe to Reduce Removals & O&S Costs			4Q	0	0	0	0	0
T55 - Develop Improved Bleed System Actuator			4Q	0	0	0	0	0
T55 - Design and Qualify Improved Stage 3 Nozzle				0	0	0	0	0
T55 - Development of Improved EGT Measurement System				0	0	0	0	0
GTCP36 - Complete Life Analysis for Compressor and Turbine Wheels	1Q			0	0	0	0	0
GTCP36 - Relocate & Redesign Fuel Solenoid Bracket	4Q			0	0	0	0	0
GTCP36 - Vent Oil Leakage Investigation and Solution	4Q			0	0	0	0	0
GTCP36 - Field Evaluation of Oil Leakage Solution		1Q		0	0	0	0	0
GTCP36 - Complete Dual Alloy Turbine Wheel Development		2Q		0	0	0	0	0
GTCP36 - Gearbox Failure Investigation			1Q	0	0	0	0	0
GTCP36 - Dual Alloy Turbine Wheel Containment Analysis			2Q	0	0	0	0	0
GTCP36 - Component Qualification Tests				0	0	0	0	0
GTCP36 - Complete Spin Pit testing				0	0	0	0	0
T62T - Complete Material Analysis for Component Lifing		1Q		0	0	0	0	0
T62T - Compressor Wheel Spin Pit Testing			1Q	0	0	0	0	0
T62T - Reduction Drive Housing Design				0	0	0	0	0
T62T - High Reliability Wiring Harness				0	0	0	0	0
T62T - One-piece Cast Turbine Nozzle				0	0	0	0	0
FADEC - Completed MPC 555 and other core schematics	3Q			0	0	0	0	0
FADEC - Initial power supply design, prototype power supply in build	3Q			0	0	0	0	0
FADEC - Preliminary stepper motor control logic defined	4Q			0	0	0	0	0
FADEC - Complete hardware design, conduct CDR		2Q		0	0	0	0	0

E. Schedule Profile (continued)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
FADEC - Initiate fabrication of development units		2Q		0	0	0	0	0
FADEC - Complete preliminary software development		3Q		0	0	0	0	0
FADEC - Initiate engine document support		3Q		0	0	0	0	0
FADEC - Complete software development			2Q	0	0	0	0	0
FADEC - Prototype software qualification testing			2Q	0	0	0	0	0
FADEC - Unit durability test program			3Q	0	0	0	0	0
FADEC - Support HALTS and engine testing				0	0	0	0	0
FADEC - Support system level FMECA/SHA				0	0	0	0	0
FDU - Complete layout reviews for main housing, other components	2Q			0	0	0	0	0
FDU - Support specification review and conduct weight/cost reduction program	3Q			0	0	0	0	0
FDU - Fabricate	3Q			0	0	0	0	0
FDU- Develop torquemeter supplier requirements	4Q			0	0	0	0	0
FDU - Finalize pressure sensor integration		2Q		0	0	0	0	0
FDU - Fabricate developmental units		3Q		0	0	0	0	0
FDU - Complete LOLA pump design and testing		3Q		0	0	0	0	0
FDU - Initiate qualification testing program		3Q		0	0	0	0	0
FDU - Support Subsystem Power Unit (SPU) testing		3Q		0	0	0	0	0
FDU - Complete qualification testing			2Q	0	0	0	0	0
FDU - Accelerated mission/endurance testing			3Q	0	0	0	0	0
FDU - Continued support of SPU tests			3Q	0	0	0	0	0

Schedule Profile provided for FADEC and FDU efforts is in anticipation of receiving additional funds for these efforts.

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203752A - Aircraft Engine Component Improvement Program

PROJECT
106

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . T-700 Engine	SS/CPFF	Lynn, MA	41988	1460	2-3Q	10950	2-3Q	0	0	0	0	0
b . T-55 Engine	SS/CPFF	Phoenix, AZ	20126	941	2-3Q	1398	2-3Q	0	0	0	0	0
c . APU's	MIPR	Air Force, Kelly AFB, TX	13557	0		0		0	0	0	0	0
d . FADEC/FDU	MIPR	CECOM, Ft. Monmouth, NJ	916	2800	1-2Q	0		0	0	0	0	0
e . DECU	MIPR	RTTC, Redstone Arsenal, AL	95	10	1-2Q	0		0	0	0	0	0
f . APU's	MIPR	Air Force, Hill AFB, UT	0	368	2-3Q	605	2-3Q	0	0	0	0	0
Subtotal:			76682	5579		12953		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203752A - Aircraft Engine Component Improvement Program

PROJECT
106

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Contract Engineering	SS/CPFF	Westar, St. Louis, MO	10	0		0		0	0	0	0	0
b . Contract Engineering	SS/CPFF	Camber, Huntsville, AL	145	54	2-3Q	0		0	0	0	0	0
Subtotal:			155	54		0		0		0	0	0

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

Remarks: Not Applicable

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203752A - Aircraft Engine Component Improvement Program

PROJECT
106

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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 Engineering		ATCOM, St. Louis, MO	10342	0		0		0	0	0	0	0
b . In-house Engineering		AMCOM, Redstone Arsenal, AL	229	67		64		0	0	0	0	Continue
c . SBIR/STTR			0	173		0		0	0	0	0	0
Subtotal:			10571	240		64		0		0	0	Continue
Project Total Cost:			87408	5873		13017		0		0	0	Continue

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203758A - Digitization**	**374**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
374	HOR BATTLEFLD DIGITIZN	32235	30384	29302	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

Horizontal Battlefield Digitization is a strategy that allows warfighters, from the individual soldier and platform to echelons above corps, to share critical situational awareness (SA) and command and control information. It applies digital information technologies to acquire, exchange, and employ data throughout the battlespace, providing a clear and accurate common relevant picture for leaders at all levels. This timely sharing of information significantly improves the ability of commanders and leaders to quickly make decisions, synchronize forces and fires, and increase the operational tempo. Digitization is a means of realizing a fully integrated command and control capability to the platoon level, including interoperability links with joint and multinational forces. The major FY02/03 efforts included in the program element are: 1) The horizontal battlefield integration office (Directorate of Integration), formerly Army Digitization Office, responsible for the integration and synchronization of the Army's digitization efforts; coordination of digitization efforts between joint and multi-national forces; and the synchronization of combat material and training efforts to develop and deploy Army XXI information technologies. 2) Systems engineering and integration of physical interfaces and logical mechanisms between and across multiple battlefield operating systems and across multiple Program Executive Offices, providing improved capability to operate in the common battlefield picture/SA and common operating environment (COE) dimensions. Enhances synchronization of maneuver, direct/indirect fires, intelligence and targeting, and reduces fratricide. 3) Unit Set Fielding (USF) outlines the responsibilities, prerequisites, and requirements necessary to operationally release, field, and incorporate materiel systems as part of the whole C4ISR system of systems architecture associated with the critical mission threads the Army requires to support Strategic National Tasks. USF serves as the synchronizing process ensuring that system fieldings are implemented in an integrated and complimentary fashion, supporting a unit's modernization with minimum disruption to unit readiness. USF will apply to all Active and Reserve Component unit modernization. Horizontal Battlefield Digitization will continue to integrate modern information technology throughout the Army well into the 21st Century.

FY 2000 Accomplishments

- 5011 Evaluated data engineering and analysis testing, experimentation and interrelated simulation of hardware/software
- 4150 Supported System/Platform Integration of heavy/light forces; synchronization and integration of fielding plans, assessments, and resources; battlefield digitization impact studies, and system of systems issue resolutions
- 1723 Continued analysis (including modeling/simulation) to predict overall system of systems performance.

FY 2000 Accomplishments (Continued)

- 2955 Supported thorough validation of digital requirements/architecture to ensure realistic/adequate data flows, mission thread analysis, interoperability, human resource engineering, security, and physical layout.
- 3637 Supported Integration planning tools, specifications, and other training, logistics, interface, and configuration management products for the 66 TRADOC identified systems.
- 6289 Evaluated emerging interfaces to ensure interoperability across all functional areas including; improved locating, tracking, and management of transportation assets; supported tactical internet and electronic interfaces required for logistic functions; solution development for Aviation communications requirements for full tactical internet connectivity/mobility, and supported system integration of interoperability analysis, design, and demonstration of capabilities to minimize platform modifications to achieve maximum benefits of open architecture.
- 2375 Applied university academic and research resources to Army modeling, simulation and training to support the Army digitization strategy.
- 3040 Supported Joint and Coalition interoperability programs for improving digitization including C4I Coalition Warfare, Command and Control System Interoperability Program (C2SIP) efforts; specific tasks to include: database development, operational system architecture, and Multilateral Interoperability Program (MIP) Phase I testing and the International Remote Command Post Exercise (CPX).
- 3055 Supported Bradley systems improvements and Land Warrior integration with Command, Control, Communications, Computers, and Intelligence (C4I) systems.

Total 32235

FY 2001 Planned Program

- 5015 Data engineering evaluation and analysis testing, experimentation and interrelated simulation of hardware/software.
- 3843 System/Platform Integration of heavy/light forces, synchronization assessments, battlefield digitization impact studies and system of systems issue resolution.
- 1916 Analysis (including modeling/simulation) to predict overall system of systems performance.
- 3437 Thorough validation of digital requirements/architecture to ensure realistic/adequate data flows, mission thread analysis, interoperability, human resource engineering, security, and physical layout.
- 4689 Integration tools, plans, specifications, and other training, logistics, interface, and configuration management products for the 66 TRADOC identified systems. (e.g. BFIST, Linebacker, BCIS, Aviation Platforms, Ground Combat Platforms, Integ TES into ASAS and AFATDs)

FY 2001 Planned Program (Continued)

- 5120 Evaluate emerging interfaces to ensure interoperability across all functional areas including: support tactical internet and electronic interfaces required for additional logistic functions; additional solution development for Aviation communications requirements for full tactical internet connectivity/mobility; and support system integration of interoperability analysis, design, and demonstration of capabilities to minimize platform modifications to achieve maximum benefits of open architecture.
- 1999 Apply university academic and research resources to the integration of Army modeling, simulation and training to support modernized forces.
- 3500 Joint and Coalition interoperability programs for improving operational integration including C4I Coalition Warfare, Command and Control System Interoperability Program (C2SIP) efforts, interoperability database development, operational system architectures, the Simulation of C2 Information Systems Connectivity Experiments (SINCE) and the Multilateral Interoperability Program (MIP) in accordance with JV 2010.
- 865 SBIR/STTR

Total 30384

FY 2002 Planned Program

- 4552 Conduct technical interoperability studies, perform interoperability/integration analyses, analyze networked weapon system and Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems compatibility, and assess technical and operational test plans, activities, and results.
- 1608 Provide technical, analytical, and management support for implementation of information operations on the digitized battlefield.
- 1518 Coordinate, integrate, and synchronize all aspects of material system fieldings to include tracking, recording, and resolving issues for system of systems synchronization, database management, and Army Order of Precedents.
- 1325 Provide thorough validation of evolving digital requirements/architecture to ensure realistic/adequate data flows, mission thread analysis, interoperability, human resource engineering, security, and physical layout in support of the Transformation Campaign Plan.
- 1019 Develop C4I systems software baselines and manage Horizontal Technology Integration efforts. Provide assessments for risk, interoperability, performance, and scheduling. Perform System Integration functions for baselining, and process improvements.
- 4286 Synchronize system/platform integration, through the use of common components, across ground and aviation programs.
- 3929 Apply emerging horizontal integrated information technologies, capitalizing on the synergism achieved through system of system fieldings across functional areas.
- 3475 Integrate and synchronize modeling and simulation interoperability with C4ISR programs in support of testing and training of system of systems developments.

FY 2002 Planned Program (Continued)

- 1430 Provide strategic planning to the Army Experimentation Campaign Program (AECP). Design and manage Unit Set configuration and execution. Perform management and oversight of the 3 views of architecture (system, operational, and technical).
- 1630 Identify Embedded Training Design Support tasks and methodologies, research, and development in the use of simulation.
- 1030 Apply university academic and research resources to the integration of Army modeling, simulation, and training to support modernized forces including University XXI oversight.
- 3500 Joint and Coalition interoperability programs for improving operational integration including C4I Coalition Warfare, Command and Control System Interoperability Program (C2SIP) efforts, interoperability database development, operational system architectures, the Simulation of C2 Information Systems Connectivity Experiments (SINCE) and the Multilateral Interoperability Program (MIP) in accordance with JV 2010.

Total 29302

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	29941	29671	29202	0
Appropriated Value	30180	30671	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	-215	0	0
b. SBIR / STTR	-761	0	0	0
c. Omnibus or Other Above Threshold Reductions	-117	0	0	0
d. Below Threshold Reprogramming	3055	0	0	0
e. Rescissions	-122	-72	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	100	0
Current Budget Submit (FY 2002/2003 PB)	32235	30384	29302	0

FY 2001: Congressional increase of (+860) for continued Digitization effort at Ft. Hood, Texas
FY 2002-FY 2003: Funds increased in the President's Budget for systems integration/interoperability.

C. Other Program Funding Summary: Not Applicable

D. Acquisition Strategy: To validate/demonstrate concepts and requirements, near term efforts were focused on developing a seamless battlefield software architecture and digitized appliqué hardware systems to include: evaluation of the horizontal battlefield digitization resources for systems, acquisition, integration, and testing of digital capability across multiple command and control, communications, sensors, and weapons platforms. The result will be an integrated digital capability designed to meet the near-term requirements of the First Digitized Division, Second Digitized Division by 2003, First Digitized Corps by the end of 2004, and the Army Transformation Force. Also supports the Army's role in joint and multi-national digitization programs; coordinates/manages security, vulnerability and "Red Teaming" functions; and manages Manpower and Personnel Integration (MANPRINT) modeling, simulations, and analysis.

E. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Interoperability Certification			1Q	0	0	0	0	0
Develop ATCCIS International Standards	1-4Q	1-4Q	1Q	0	0	0	0	0
ATCCIS International Test	1Q			0	0	0	0	0
Develop MIP International Standards	1-4Q			0	0	0	0	0
MIP Phase I Testing (ATCCIS/MIP Stds)	1-4Q	1-3Q		0	0	0	0	0
MIP Phase I Demo		4Q		0	0	0	0	0
MIP Phase I Fielding Decision			1Q	0	0	0	0	0
MIP Phase II Initial Testing		4Q		0	0	0	0	0
MIP Phase II Testing (remote & in Germany)	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Participate in Coalition Exercise (Canada)			3Q	0	0	0	0	0
MIP Phase II Demo & US Fielding Decision			4Q	0	0	0	0	0
MIP Phase II Tests, Integration & Refinement				0	0	0	0	0
Participate in MDIE Coalition Exercise				0	0	0	0	0
Final MIP Solution Demo & Fielding Decision				0	0	0	0	0
EBC Port and Mass storage device upgrades		3Q	1Q	0	0	0	0	0
EBC PowerPC chip Test & Evaluation		1Q	1Q	0	0	0	0	0
FBCB2 Initial Operation Test & Evaluation		1Q	1Q	0	0	0	0	0
FBCB2 Initial Operational Capability		1Q		0	0	0	0	0

E. Schedule Profile (continued)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
FBCB2/EBC Follow-on Tests		3Q	1Q	0	0	0	0	0
FDD Hardware contract award	2Q			0	0	0	0	0
Equip First Digitized Division	1-4Q	1Q		0	0	0	0	0
Evaluate electronic interface to tactical Internet and to C2 systems.	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Conduct analysis to support system design, experimentation and implementation	2-3Q	1-4Q	1-4Q	0	0	0	0	0
Light Force Digitization			1-4Q	0	0	0	0	0
Equip First Digitized Corps	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Equip Second Digitized Division		1-4Q	1-4Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203758A - Digitization

PROJECT
374

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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 Integration	MIPR/PWD	Various	27045	15105	1Q	15981	1Q	0	0	0	0	0
b . International Digitization	MIPR/PWD	Various	5347	3500	1Q	3500	1Q	0	0	0	0	0
c . Technical Analysis	MIPR/PWD	MITRE, Pentagon, McLean, VA	1748	987	1Q	798	1Q	0	0	0	0	0
d . Other Government Agencies	MIPR/PWD	Various	3263	1338	1Q	985	1Q	0	0	0	0	0
Subtotal:			37403	20930		21264		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 . Directorate of Integration Office Operations		Pentagon	3161	1220		1180		0	0	0	0	0
b . Digitization Planning, Internet and graphics support	PWD	Signal Corp. Pentagon and Arlington, VA	2737	1277	1Q	1285	1Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203758A - Digitization

PROJECT
374

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
c . Info Ops, System Eng. Integration & Ops Spt.	PWD	Quantum Res International Pentagon, Ft. Monroe, VA & Ft. Hood, TX	4972	2804	1Q	3470	1Q	0	0	0	0	0
d . Other Integration Support	MIPR/PWD	CRC/UHD/ATC/MPRI, Pentagon and Arlington, VA	993	460	1Q	470	1Q	0	0	0	0	0
e . SBIR/STTR			0	865		0		0	0	0	0	0
Subtotal:			11863	6626		6405		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 . Other Govt. Agencies	MIPR/PWD	Various	4156	558	1Q	221	1Q	0	0	0	0	0
b . University XXI Initiatives	MIPR/PWD	Univ. of Texas and Texas A&M	4232	1755	1Q	1030	1Q	0	0	0	0	0
c . Studies/Analyses/DB2	MIPR/PWD	Pentagon, Arlington, VA	1079	515	1Q	382	1Q	0	0	0	0	0
Subtotal:			9467	2828		1633		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203758A - Digitization

PROJECT
374

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award 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:			58733	30384		29302		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203759A - Force XXI Battle Command, Brigade and Below (FBCB2**	**120**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
120	FORCE XXI BATTLE CMD, BRIGADE & BELOW (FBCB2)	66921	64009	56872	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The mission of PM FBCB2 is to develop, acquire, test, and field a digital information system that provides integrated, on-the-move, real-time/near real-time, situational awareness and command and control information to all tactical combat, combat support, and combat service support commanders, leaders, and soldiers. This capability will be fielded from brigade down to the soldier level across all Battlefield Functional Areas (BFAs), including other division and corp elements necessary to support brigade operations. FBCB2 will be integrated into the mounted and dismounted maneuver (divisional, separate, heavy and light), calvary/reconnaissance and armored cavalry, mechanized infantry, and aviation units. PM FBCB2 is developing and delivering the Applique (computer, software, and installations kits) and FBCB2 (software) products integrated into various platforms. Battlefield digitization allows the Army's primary weapons and battle command systems to see, acquire, and engage threats while sharing the same information, using advanced technologies and digital communications. These platforms are connected through a communications infrastructure called the Tactical Internet. Interoperability is accomplished through the use of joint standard message formats for the exchange of overlays, orders, and command and control messages/Situational Awareness. The FBCB2 system and tactical internet provide the power of the network to share Situational Awareness (SA) and Command and Control (C2) information, promoting an efficient use of resources within the enemy's decision cycle. FBCB2 is integrated with Army Tactical Command and Control Systems (ATCCS) located within the brigades and battalions. The interfaces between FBCB2 and ATCCS systems will provide users at all levels a common picture of their battlespace. This seamless digitization (a computer with a graphics display, global positioning system, communications link, and command and control software) will be applied across the Army. FY02/03 dollars will further develop and test the FBCB2 software. The funding will also support IOT&E, LUT3, and Milestone III, as well as supporting the fielding of ICAV and 1st & 2nd IBCTs.

This system supports the legacy to objective transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 13963 System Engineering
- 7757 Contractor System Integration and Testing
- 4868 Integrated Logistics Support, Speciality Engineering, and Training
- 1420 Site Operations

FY 2000 Accomplishments (Continued)

- 14133 Software Development
- 1870 Hardware Design and Management
- 9423 Government Testing: Electronic Proving Ground (EPG), Army Test & Evaluation Command (ATEC), and Customer Testing (CT)
- 2133 Central Technical Support Facility (CTSF) - Horizontal Integration, testing, and training
- 4177 Time and Material efforts
- 7177 PM FBCB2 Program Management

Total 66921

FY 2001 Planned Program

- 13748 System Engineering
- 8515 Contractor System Integration and Testing
- 5020 Integrated Logistics Support, Specialty Engineering, and Training
- 10206 Software Development
- 16730 Government testing (EPG,ATEC)
- 1339 Site Operations
- 1507 Time & Material Efforts
- 4091 PM FBCB2 Program Management
- 1000 Tactical Navigation Electronic Digital Compass System
- 1853 SBIR/STRR

Total 64009

FY 2002 Planned Program

- 10698 System Engineering
- 3664 Contractor System Integration and Testing
- 1299 Integrated Logistics Support, Specialty Engineering, and Training
- 764 Site Operations
- 11995 Software Development
- 22300 Government Testing: EPG and Army Test & Evaluation Command (ATEC)
- 1450 Time and Material Efforts
- 4702 PM FBCB2 Program Management

Total 56872

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	65176	63601	37699	0
Appropriated Value	65925	64601	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	-452	0	0
b. SBIR / STTR	-1755	0	0	0
c. Omnibus or Other Above Threshold Reduction	-270	0	0	0
d. Below Threshold Reprogramming	3500	0	0	0
e. Rescissions	-479	-140	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	19173	0
Current Budget Submit (FY 2002/2003 PB)	66921	64009	56872	0

FY00: $3.5M was for the Joint Contingency Force (JCF) Advanced Warfighting Experiments (AWE).

FY01: $1M for the Tactical Navigation Electronic Digital Compass System. (Congressional plus-up)
FY02: $9M increase FY02 for LUT3
FY02: $10M increase FY 02 for Testing and other development efforts

C. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Other Procurement Army Activity 2 SSN W61900	66179	62161	74663	0	0	0	0	0	0	0
Other Procurement Army Activity 4 SSN BS9736 (Spares)	0	886	1397	0	0	0	0	0	0	0

D. Acquisition Strategy: Spiral development is the overall FBCB2 software acquisition strategy. It is based on proving functional capabilities through numerous incremental testing events over time, and incorporating results/feedback into the next "spiral". The current competitive contract, awarded in 1995, is a Systems Engineering and Integration (SE&I) effort, with cost plus incentive fees, time, materials, and firm fixed price orders. The contract is for the development of software versions V1-V3, prototype computers, and associated hardware. The follow-on SE&I contract was awarded in FY01 for software versions V3.5. This synchronizes the FBCB2 software with ABCS 7.0. A Low Rate Initial Production (LRIP) Firm Fixed Incentive Target Fee (FFITF) contract was awarded in January 2000 with OPA funds. The LRIP permits establishment of a robust production base and an orderly increase in production sufficient to lead to Full Rate Production upon successful completion of operational testing. The Full Rate Production option will be awarded in 1QFY03 following a Milestone III decision. FBCB2 is integrated with the Army Tactical Command and Control System (ATCCS) located within the brigades and battalions. The interfaces between FBCB2 and ATCCS systems will provide users at all levels a common picture of their battlespace.
PM FBCB2 is the designated lead on the development of the Common Card which is intended to facilitate the integration of FBCB2 into certain weapon system platforms such as Abrams and Bradley.

E. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Version 3.2 FBCB2 Software Delivery	1Q			0	0	0	0	0

E. Schedule Profile (continued)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Production Contract Award (LRIP)	2Q			0	0	0	0	0
Force Development Test & Evaluation/Customer Test	3Q			0	0	0	0	0
Version 3.3 FBCB2 Software Delivery	4Q			0	0	0	0	0
Equip 4TH ID	3Q	1Q		0	0	0	0	0
Bradley/Abrams IOTE/FOTE		1Q		0	0	0	0	0
DCXI/LUT2		3Q		0	0	0	0	0
Follow on SE&I Contract Award		3Q		0	0	0	0	0
Version 3.4 FBCB2 Software Delivery		3Q		0	0	0	0	0
Initial Operational Test & Evaluation (IOTE)			1Q	0	0	0	0	0
LUT 3			2Q	0	0	0	0	0
Version 3.5 FBCB2 S/W Delivery			2Q	0	0	0	0	0
Milestone III Decision/Full Rate Production Review			4Q	0	0	0	0	0
Full Rate Production Contract Award				0	0	0	0	0
Version 4.0 FBCB2 Software Delivery				0	0	0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

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

PROJECT
120

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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/SW Development	CPIF	TRW, LA, CA	282453	40335	1Q	29870	1Q	0	0	0	0	0
b . Hardware Development	FFP	TRW, LA, CA.	5478	0		0		0	0	0	0	0
c . Tactical Navigation Electronic Digital Compass System			0	1000		0		0	0	0	0	0
Subtotal:			287931	41335		29870		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Office Support	N/A	CECOM, Ft. Monmouth	3599	1443	1Q	1406		0	0	0	0	Continue
b . Matrix Support	MIPR	CECOM, Ft. Monmouth	1097	194	1Q	271		0	0	0	0	Continue
c . Misc. Contracts Support	MIPR/PWD	CECOM, Ft. Monmouth	8499	2454	1Q	3025		0	0	0	0	Continue
d . SBIR/STRR	Taxes	DA	0	1853		0		0	0	0	0	0
Subtotal:			13195	5944		4702		0		0	0	Continue

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

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

PROJECT
120

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . CTSF	MIPR	CTSF	2133	0	1Q	0		0	0	0	0	0
b . ATEC	MIPR	ATEC	4800	11100	1Q	22170		0	0	0	0	0
c . EPG	MIPR	EPG	6307	5630	1Q	130		0	0	0	0	0
d . Other	MIPR	Misc	398	0		0		0	0	0	0	0
Subtotal:			13638	16730		22300		0		0	0	0

Remarks: Includes PBD 290 funding, 9M in ATEC for LUT 3

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award 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:			314764	64009		56872		0		0	0	Continue

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203761A - Rapid Acq Program for Transformation (RAPT)**	**394**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
394 FORCE XXI WRAP	0	0	23593	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The Rapid Acquisition Program for Transformation (RAPT) continues as one of the Army's proven Acquisition Reform initiatives. The overall intent of the program is to put proven technologies from successful experimentation in the hands of the warfighter faster and cheaper by reducing acquisition cycle time. Candidates considered for funding through this program are compelling, mature technologies capable of achieving a milestone III decision in the near future or following one to two years of continued development. Initiatives can originate from virtually anywhere. "Good ideas" continue to emerge from such sources as the Training and Doctrine Command (TRADOC) Centers, Schools and Battle Labs, the user community, the Army Materiel Command (AMC), Research Development & Engineering Centers (RDECs), the Project Manager/Program Executive Officer (PM/PEO) community, industry, Academia, Horizontal Technology Integration (HTI), General Officer Steering Committees (GOSCs), and the Federally Funded Research and Development Centers (FFRDCs). The primary sources for initiatives are the Battle Lab Warfighting Experiments (BLWEs), Advanced Concepts and Technology (ACT II) and the Advanced Concept Technology Demonstrations (ACTDs). The RAPT program is the bridge linking Army's compelling successes in experimentation to systems acquisition. This program element was established to support the RAPT program, consistent with Congressional language reflected in the Department of Defense Appropriations Bill. The nature of RAPT funding requires internal fund realignments for initiatives associated with on-going programs typically in other program elements or other appropriations, subject to congressional or legal constraints.

FY 2000 Accomplishments

Funds reprogrammed to RAPT initiatives consistent with Congressional language reflected in the Department of Defense Appropriations bill. See Program Change Summary for details.

FY 2001 Planned Program

No funds appropriated for this effort.

FY 2002 Planned Program

- 23593 Funds to be reprogrammed to approved RAPT systems during year of execution.

Total 23593

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	55921	6021	93813	0
Appropriated Value	36621	0	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reductions	-26121	0	0	0
d. DoD Internal Reprogramming	-10500	0	0	0
e. Rescissions	0	0	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	-70220	0
Current Budget Submit (FY 2002/2003 PB)	0	0	23593	0

FY 00: $1200 reprogrammed to PE 0604778 to support Global Positioning System (GPS) SINCGARS
$1890 reprogrammed to PE 0604715 to support Combat Synthetic Training Range (CSTAR)
$8000 reprogrammed to PE 0604780 to support Close Combat Tactical Trainer (CCTT)
$10500 reprogrammed to PE 0604780 to support AVCATT-A
$15031 reprogrammed to support higher Army priorities
FY 02/03 funds adjusted to fund higher Army priority Transformation issues.

C. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Close Combat Tactical Trainer - 06054780.585	10500	0	0	0	0	0	0	0	0	0

D. Acquisition Strategy: Not applicable.

E. Schedule Profile: Not applicable for this item.

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203761A - Rapid Acq Program for Transformation (RAPT)

PROJECT
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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 . RAPT candidates	Various	TBD	0	0		23593	1-4Q	0	0	0	0	0
Subtotal:			0	0		23593		0		0	0	0

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

Remarks: Not Applicable

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award 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

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203761A - Rapid Acq Program for Transformation (RAPT)

PROJECT
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
Remarks: Not Applicable												
Project Total Cost:			0	0		23593		0		0	0	0

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

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203801A - Missile and Air Defense Prod Improvement Prog

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	10933	12248	8547	0	0	0	0	0	0	0
036 PATRIOT PROD IMP PGM	7233	6635	4535	0	0	0	0	0	0	0
303 STINGER RMP PIP	3700	5613	4004	0	0	0	0	0	0	0
633 THAAD P3I	0	0	8	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The goal of the Air Defense Artillery (ADA) modernization is to provide well-trained soldiers with the most capable systems at the right time to defeat the evolving threat. The ADA systems support the Air and Missile Defense (AMD) force which assists the Army and the Joint Force in gaining Full Spectrum Dominance in any operational requirement. ADA must continually be upgraded and modernized to meet all challenges, from small scale contingencies to major theater wars (MTW). The FY02-03 budget funds critical improvements to the Patriot and Stinger programs.

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	32211	12365	12078	0
Appropriated Value	32485	12365	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-864	0	0	
c. Omnibus or Other Above Threshold Reductions	-133	0	0	
d. Below Threshold Reprogramming	-20153	0	0	
e. Rescissions	-141	-117	0	
Adjustments to Budget Years Since FY2001 PB	0	0	-3539	
Current Budget Submit (FY 2002/2003 PB)	11194	12248	8539	0

FY02 dollars realigned to PE 0603308 to more accurately reflect the purpose of the dollars.

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203801A - Missile and Air Defense Prod Improvement Prog**	**036**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
036 PATRIOT PROD IMP PGM	7233	6635	4535	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The Patriot Product Improvement Program upgrades the Patriot system through a series of individual materiel changes (MC) culminating in the attainment of the Patriot Advanced Capability - 3 (PAC-3) system. The communication upgrades improve Patriot's above and below battalion communication equipment. These changes eliminate Patriot-peculiar communications equipment and improve Patriot's interoperability between systems and the Services. FY00 was the first year for the Remote Launch Communication Enhancement Upgrade (RLCEU) Link 16 Phase 1 and Post Deployment Build 5 (PDB 5). RLCEU Link 16 will develop and test the hardware required for a Link-16 terminal, terminal control, and communications processing equipment to receive and process the Link 16 Joint Data Net information. PDB 5 will improve system capability against advanced threats (Theater Ballistic Missiles and Air-Breathing Threats (TBMs and ABTs) in all environments, to include clutter and/or intense Electronic Counter Measures (ECM). Program objective will be to define the software changes necessary to enhance system capabilities against advanced TBM and cruise missile threats. In addition, interoperability improvements [e.g., Cooperative Engagement Capability (CEC) interface, cueing, and Tactical Data Information Link (TADIL) direct to Fire Unit (FU)], PAC-3 missile integration improvements in ground software, Classification Discrimination & Identification (CDI3) enhancements, and on-line diagnostic evolution will be addressed. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 2452 Initiated RLCEU Link 16 Phase I
- 4781 Continued PDB 5

Total 7233

FY 2001 Planned Program

- 2452 Continue RLCEU Link 16 Phase I
- 3986 Initiate Post PDB 5
- 197 Small Business Innovative Research/Small Business Technology Transfer

Total 6635

FY 2002 Planned Program

- 4535 Continue Post PDB 5

Total 4535

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Budget Activity 3 - Patriot Mod (C50700)	49630	22718	37617	0	0	0	0	0	0	0
Budget Activity 3 - Patriot Mod Initial Spares	3617	2625	731	0	0	0	0	0	0	0
Budget Activity 2 - PAC-3	0	0	676574	0	0	0	0	0	0	0

C. Acquisition Strategy: The design objective of the Patriot system was to provide a baseline system capable of modification to cope with the evolving threat. This alternative minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems. The Patriot program consists of two interrelated acquisition programs - the Patriot growth program and the PAC-3 missile program. Growth program modifications are grouped into configurations, which are scheduled to be fielded in the same timeframe. Configuration groupings are convenient for managing block changes of hardware and software and are not a performance-related grouping. However, incremental increases in performance will be determined for each configuration in order to provide benchmarks for configuration testing and for the development of user doctrine and tactics.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Configuration 3 Contractor Development Test & Evaluation				0	0	0	0	0
Configuration 3 Initial Operational Test & Evaluation				0	0	0	0	0
PDB-5 Software Improvements Continuation	1Q			0	0	0	0	0
Post PDB-5 Software Improvements Initiated		1Q		0	0	0	0	0
RLCEU Link 16 Phase I Program Initiated		1Q		0	0	0	0	0
RLCEU Link 16 Phase I Program Continuation		1-4Q		0	0	0	0	0
PAC-3 FUE-Ground	4Q			0	0	0	0	0
PAC-3 Missile MS III			4Q	0	0	0	0	0
PAC-3 Missile FUE		4Q		0	0	0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203801A - Missile and Air Defense Prod Improvement Prog

PROJECT
036

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DAAH0182CA181		Raytheon/MA	3722	0		0		0	0	0	0	0
b . DAAH0187CA025		Raytheon/MA	22455	0		0		0	0	0	0	0
c . DAAH0189C0458		Raytheon/MA	23228	0		0		0	0	0	0	0
d . DAAH0192C0036		Raytheon/MA	5000	0		0		0	0	0	0	0
e . Small Contracts			1168	0		0		0	0	0	0	0
f . DAAH0187CA006		General Electric/FL	4824	0		0		0	0	0	0	0
g . DAAH0189C0167		Brunswick/Martin Marietta	3100	0		0		0	0	0	0	0
h . DAAH0192C0301	SS/CPFF	Lockheed-Martin/AL	4314	0		0		0	0	0	0	0
i . DAAH0191C0602	SS/CPIF	Raytheon/MA	23077	0		0		0	0	0	0	0
j . DAAH0192C0006	SS/CPAF	Raytheon/MA	56460	0		0		0	0	0	0	0
k . DAAH0195C0043	SS/CPAF	Raytheon/MA	16113	0		0		0	0	0	0	0
l . DAAH0196C0406		Lockheed Martin/AL	200	0		0		0	0	0	0	0
m . DAAH0196C0062		Raytheon/MA	62937	0		0		0	0	0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203801A - Missile and Air Defense Prod Improvement Prog

PROJECT
036

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
n . DAAH0196C0018		Raytheon/MA	5046	0		0		0	0	0	0	0
o . Horiz Btlfld Digit			2768	0		0		0	0	0	0	0
p . DAAH0198CA001		Raytheon/MA	1200	0		0		0	0	0	0	0
q . DAAH0195CA046		Loral Vought/TX	20	0		0		0	0	0	0	0
r . DAAH0199C0028		Raytheon/MA	665	0		0		0	0	0	0	0
s . RLCEU Link 16 Phase I			0	1226		0		0	0	0	0	0
t . Post PDB 5			0	1607		1213		0	0	0	0	0
Subtotal:			236297	2833		1213		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203801A - Missile and Air Defense Prod Improvement Prog

PROJECT
036

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DAAH0187CA008		CAS, Inc/AL	2270	0		0		0	0	0	0	0
b . DAAH0190C0487		CAS, Inc/AL	6266	0		0		0	0	0	0	0
c . DAAH0194C0105	C/CPAF	CAS,Inc/AL	6135	0		0		0	0	0	0	0
d . DAAH0197C0324		CAS,Inc/AL	2934	0		0		0	0	0	0	0
e . In-House Support		RSA/AL	13303	858		800		0	0	0	0	0
f . Matrix Support		RSA/AL	2043	700		604		0	0	0	0	0
g . DAAH0197CA013		CAS,Inc/AL	100	0		0		0	0	0	0	0
Subtotal:			33051	1558		1404		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203801A - Missile and Air Defense Prod Improvement Prog

PROJECT
036

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Missile Command	1095	RSA/AL	12586	1644		1500		0	0	0	0	0
b . White Sands Missile Range	MIPR	WSMR/NM	11740	600		418		0	0	0	0	0
c . Other Govt Agent	MIPR		10410	0		0		0	0	0	0	0
d . RDEC and Other Govt Agent	1095/MIPR	RSA/AL	95732	0		0		0	0	0	0	0
Subtotal:			130468	2244		1918		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:			399816	6635		4535		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203801A - Missile and Air Defense Prod Improvement Prog**	**303**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
303 STINGER RMP PIP	3700	5613	4004	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project provides a product evolution of the Stinger-Reprogrammable MicroProcessor (RMP), improving countermeasure capabilities via externally loaded software downloaded from a reprogrammable module. This concept allows for timely upgrades to correct system deficiencies, rapid reaction to new threats or threat countermeasures, development of specialty software programs and accommodations for new missions. The Block I upgrade adds a roll sensor and enhanced software, solves system performance deficiencies in countermeasures and other engagement conditions, and increases terminal accuracy. The Block II development program was terminated in FY00 due to higher priority requirements of the Army Transformation. Critical evaluation of Block I design obsolescence, improvements, and performance will continue. This system supports the Legacy transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 3000 STINGER Block II Program Termination & Technology Transition
- 550 AIM9X & RAM Technology Evaluation (Producibility & Obsolescence Reduction)
- 150 Lithium Battery Evaluation (Shelf Life Extension)

Total 3700

FY 2001 Planned Program

- 3426 Hybrid Microelectronic Assembly (HMA) Redesign
- 910 Dual Detector Aging/Degradation Test, Evaluation, and Analysis
- 125 Lithium Battery Aging Test
- 275 Roll Frequency Sensor/Seeker Evaluation (Primary and Secondary Seeker Spin Motor and Squibs)
- 245 Guidance Section Software Redesign
- 470 Missile Airframe/Guidance Section Modeling and Simulation Analyses and Performance Predictions

FY 2001 Planned Program (Continued)

•	162	Small Business Innovative Research/Small Business Technology Transfer Program
Total	5613	

FY 2002 Planned Program

•	3100	Roll Frequency Sensor/Seeker (RFSS) Redesign
•	904	Hybrid Microelectronic Assembly (HMA) Redesign
Total	4004	

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Missile Procurement, Army	0	0	0	0	0	0	0	0	0	0
Budget Activity 2 - Stinger Msl (C18600)	0	0	45890	0	0	0	0	0	0	0
Budget Activity 3 - Stinger Mods (C21300)	21858	33033	5830	0	0	0	0	0	0	0

C. Acquisition Strategy: Special interest programs completed in this project in prior years include the MIL-STD Launcher electronics development, and support of a feasibility study as part of an eight-nation Memorandum of Understanding for NATO Very Short and Short Range Air Defense Systems. The Block I development program was a Sole Source/Cost Plus Incentive Fee contract awarded in 1992. The Block II development began in FY 1993 as a Technology Base Broad Agency announcement with a SS/CPFF contract. A SS/CPFF contract was awarded in 1996 for pre-Engineering, Manufacturing, and Development (EMD). Due to termination of the Block II development program, and redefinition of activities to evaluate Block I improvements and performance, a SS/CPFF contract for follow-on Stinger Block I improvements was awarded in 2Q FY2000.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Block II Termination and Block I Contract Award for Technology Transition	2Q			0	0	0	0	0
AIM9X & RAM Technology Evaluation	2-4Q			0	0	0	0	0
Lithium Battery Evaluation/Test	4Q	4Q		0	0	0	0	0
HMA Redesign PDR/CDR		3Q		0	0	0	0	0
Dual Detector Evaluation		2-4Q		0	0	0	0	0
Roll Frequency Seeker Redesign CDR		4Q		0	0	0	0	0
Initiate Guidance Section Software Redesign		1-4Q		0	0	0	0	0
Modeling and Simulation Analyses/Performance Predictions		3-4Q		0	0	0	0	0
Complete RFSS Redesign			3-4Q	0	0	0	0	0
Complete HMA Redesign			3-4Q	0	0	0	0	0
Continue Technology Assessments/Performance Analysis of Components (Seeker, Servo, Pyrotechniques)				0	0	0	0	0
Seeker Head Redesign CDR				0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203801A - Missile and Air Defense Prod Improvement Prog

PROJECT
303

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DAAH0192C0213	SS-CPIF	Hughes,Tucson,AZ	20838	0		0		0	0	0	0	0
b . DAAH0193CR127	SS-CPFF	Hughes,Tucson,AZ	4629	0		0		0	0	0	0	0
c . DAAH0195C0028	SS-CPFF	Hughes,Tucson,AZ	1965	0		0		0	0	0	0	0
d . DAAH0196C0180	SS-CPFF	Hughes,Tucson,AZ	17739	0		0		0	0	0	0	0
e . DAAH0197C0084	SS-CPFF	Raytheon(Hughes), Tucson,AZ	1000	0		0		0	0	0	0	0
f . DAAH0197C0099	SS-CPFF	Raytheon, Tucson,AZ	4964	0		0		0	0	0	0	0
g . DAAH0199C0170 Block I Technology Evaluations	SS-CPFF	Raytheon, Tucson,AZ	1809	3879	3Q	3404	1Q	0	0	0	0	0
h . Block I Aggregate	Various	Various	8569	0		0		0	0	0	0	0
i . BSFV Aggregate	Various	Various	7025	0		0		0	0	0	0	0
j . Government Engineering Support	1095	RDEC, Redstone Arsenal, AL	7794	842	1Q	200	1Q	0	0	0	0	0
k . Other Govt. Agency	MIPR/1095	Various	413	112	2Q	200	2Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203801A - Missile and Air Defense Prod Improvement Prog

PROJECT
303

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:			76745	4833		3804		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 . DAAH0195CA032	SS-FFP	Sigma Tech, Huntsville,AL	1198	0		0		0	0	0	0	0
b . OSD MOU (Barclay Bank 42779277)	SS/C-FFP & 1080	United Kingdom Ministry of Defense	4090	0		0		0	0	0	0	0
Subtotal:			5288	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203801A - Missile and Air Defense Prod Improvement Prog

PROJECT
303

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	Eglin AFB, FL	193	0		0		0	0	0	0	0
b . Test Targets	1095	Targets Management Office	2100	0		0		0	0	0	0	0
c . Telemeters	1095	RTTC, Redstone Arsenal, AL	1269	0		0		0	0	0	0	0
d . Test Instrumentation	MIPR	NSWC, Dahlgren, VA	30	0		0		0	0	0	0	0
e . Test Bed	MIPR	SMDC, Huntsville, AL	170	0		0		0	0	0	0	0
f . Block I Design Tests	MIPR	Various	0	169	3Q	0		0	0	0	0	0
Subtotal:			3762	169		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0203801A - Missile and Air Defense Prod Improvement Prog

PROJECT
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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 . Project Management	In-House	SHORAD PMO, DSA AMCOM	2034	349	1Q	200	1Q	0	0	0	0	0
b . Contracted Services	Various	Various	786	100	2Q	0		0	0	0	0	0
c . DLA90093D00121	SS-FFP	IITRI,Huntsville,AL	775	0		0		0	0	0	0	0
d . SBIR/STTR			0	162		0		0	0	0	0	0
Subtotal:			3595	611		200		0		0	0	0
Project Total Cost:			89390	5613		4004		0		0	0	0

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

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

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

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	13215	55900	84935	0	0	0	0	0	0	0
336 TOW PIP	13215	43736	66633	0	0	0	0	0	0	0
785 LONGBOW HELLFIRE PIP	0	12164	18302	0	0	0	0	0	0	0
797 ATACMS 2020	0	0	0	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The TOW Fire and Forget (F&F) Missile program provides a critical capability to Light Early-Entry Contingency Forces and the Interim Brigade Combat Teams equipped with the TOW Improved Target Acquisition System (ITAS). The TOW F&F supports maximum engagement throughout varying battlefield conditions against a vast array of target types. The TOW F&F provides enhanced range for maximum standoff and improved lethality against new and evolving threat armor systems including those equipped with active protection systems. The TOW F&F may be fired in either of two modes of attack. The primary mode is F&F and the alternate mode uses wireless command to line of sight (CLOS) guidance. The F&F mode eliminates the requirement for the warfighter to be exposed and vulnerable while continuously maintaining track on the target while the missile is in flight. With the F&F mode, the warfighter is able to launch the missile at the target and then immediately move to safety or a new firing position before the enemy is able to return fire. As a result, the F&F mode significantly enhances the warfighter's survivability. The CLOS mode provides the warfighter with the capability to engage targets when conditions preclude F&F engagements and to engage fortifications and buildings. The TOW F&F will have a modular design to facilitate cost effective technology insertion, shelf life extension, and demilitarization. TOW F&F is a technology carrier for the Joint Common Missile Program and supports the Legacy transition path of the Army's Transformation Campaign Plan.

Longbow HELLFIRE is a critical system to the Interim and Objective Forces. Longbow HELLFIRE provides the Army with a fire-and-forget, anti-armor capability for the Apache Longbow (Interim Force) and Commanche (Objective Force) helicopters. The fire-and-forget Longbow HELLFIRE system greatly increases aircrew survivability and dramatically improves target acquisition and engagement capabilities in adverse weather when the battlefield is obscured (smoke, fog, dust), and when the threat is using countermeasures. Evolutionary improvements are required to maintain the current effectiveness of the Longbow HELLFIRE missile against expanding regional power threats. The Longbow HELLFIRE Product Improvement Program (PIP) will improve Home-on-Jam (HOJ)/Anti-Jam (AJ) and add Counter-Active Protection System (CAPS) capabilities for the missile. The HOJ/AJ and CAPS objective is to maintain the Longbow HELLFIRE Missile System's low vulnerability, and susceptibility to any "hard kill" Active Protection System (APS) and battlefield jammer threats. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

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

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

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

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	17687	64418	84555	0
Appropriated Value	17914	56418	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-476	0	0	
c. Omnibus or Other Above Threshold Reductions	-73	0	0	
d. Below Threshold Reprogramming	-3996	0	0	
e. Rescissions	-154	-518	0	
f. Other Withholds	0	0	0	
Adjustments to Budget Years Since FY2001 PB	0	0	380	
Current Budget Submit (FY 2002/2003 PB)	13215	55900	84935	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203802A - Other Missile Product Improvement Programs**	**336**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
336 TOW PIP	13215	43736	66633	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Project D336 -The TOW Fire and Forget (F&F) Missile program provides a critical capability to Light Early-Entry Contingency Forces and the Interim Brigade Combat Teams equipped with the TOW Improved Target Acquisition System (ITAS). The TOW F&F supports maximum engagement throughout varying battlefield conditions against a vast array of target types. The TOW F&F provides enhanced range for maximum standoff and improved lethality against new and evolving threat armor systems including those equipped with active protection systems. The TOW F&F may be fired in either of two modes of attack. The primary mode is F&F and the alternate mode uses wireless command to line of sight (CLOS) guidance. The F&F mode eliminates the requirement for the warfighter to be exposed and vulnerable while continuously maintaining track on the target while the missile is in flight. With the F&F mode, the warfighter is able to launch the missile at the target and then immediately move to safety or a new firing position before the enemy is able to return fire. As a result, the F&F mode significantly enhances the warfighter's survivability. The CLOS mode provides the warfighter with the capability to engage targets when conditions preclude F&F engagements and to engage fortifications and buildings. The TOW F&F will have a modular design to facilitate cost effective technology insertion, shelf life extension, and demilitarization. TOW F&F is a technology carrier for the Joint Common Missile Program and supports the Legacy transition path of the Army's Transformation Campaign Plan.

FY 2000 Accomplishments

- 1698 Released EMD Request for Proposal; Conducted Source Selection; Completed Milestone II; and Awarded EMD Contract.
- 11517 Initiated Component Design, Simulation, and System Engineering Analysis for Preliminary Design Review (PDR).

Total 13215

FY 2001 Planned Program

- 13272 Continue Component Design, Simulation and System Engineering Analysis for Preliminary Design Review.
- 120 Complete PDR.
- 1201 Prepare for Early User Demonstration.
- 24358 Continue Component Design, Simulation and System Engineering Analysis for Critical Design Review.
- 400 Conduct Early User Demonstration.
- 3084 Initiate Pilot Line Development and Preparation.
- 1301 Small Business Innovative Research/Small Business Technology Transfer Programs.

Total 43736

FY 2002 Planned Program

- 1680 Conduct Critical Design Review and Update TOW F&F Simulations.
- 31889 Continue System Engineering Analysis and Design; Pilot Line Development and Preparation; Procure Sub-vendor Prototype Hardware and Test Equipment.
- 28445 Initiate Procurement of Hardware for Pre-Production Test (PPT); Initiate testing; Prepare and update missile design documentation.
- 4619 Continue Pilot Line Development and Preparation.

Total 66633

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203802A - Other Missile Product Improvement Programs**	**336**

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
C61700 ITAS/TOW Mods	71764	63969	96204	0	0	0	0	0	0	0

C. Acquisition Strategy: The TOW F&F missile program utilizes the latest seeker and guidance technology, providing a high performance and reliable fire and forget missile. A competitive EMD contract was awarded 4th quarter FY00. The TOW F&F program includes a 42 month EMD phase, followed by Low Rate Initial Production (LRIP) and Full Rate Production (FRP).

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Release TOW F&F RFP	1Q			0	0	0	0	0
Award TOW F&F EMD contract	3Q			0	0	0	0	0
Conduct TOW F&F PDR		3Q		0	0	0	0	0
Conduct TOW F&F CDR			2Q	0	0	0	0	0
Conduct TOW F&F PPT			3Q	0	0	0	0	0
Conduct TOW F&F PQT				0	0	0	0	0
Conduct TOW F&F Limited User Test (LUT)				0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

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

PROJECT
336

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PY Sunk Cost			145427	0		0		0	0	0	0	0
b . ITAS EMD	C/CPIF/AF	Raytheon, McKinney, TX	59724	0		0		0	0	0	0	0
c . ITAS Training Development	MIPR	STRICOM, Orlando, FL	9128	0		0		0	0	0	0	0
d . Misc.	Various	Various	5325	0		0		0	0	0	0	0
e . TOW F&F EMD	CPIF	Raytheon, Tucson, AZ	9086	33068	2Q	49480	1Q	0	0	0	0	0
Subtotal:			228690	33068		49480		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 . PY Sunk Cost			46912	0		0		0	0	0	0	0
b . Program Mgt Support	PO	PM CCAWS, RSA	6091	3033	1-4Q	4707	1-4Q	0	0	0	0	0
c . Functional Gov't Support	PO	MICOM, RSA, AL	15216	3588	1-4Q	4940	1-4Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

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

PROJECT
336

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 . Misc.	Various	Various	2683	1080	1-4Q	2159	1-4Q	0	0	0	0	0
Subtotal:			70902	7701		11806		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 . PY Sunk Cost			42221	0		0		0	0	0	0	0
b . Program Test Support	MIPR	TECOM, APG, MD	15836	230	1-4Q	299	1-4Q	0	0	0	0	0
c . Program Test Support	MIPR	TEXCOM, Ft. Hood, TX	1557	0		0		0	0	0	0	0
d . Misc.	Various	Various	1827	485	1-4Q	710	1-4Q	0	0	0	0	0
e . Program Test Support	MIPR	TECOM, RTTC	614	2252	1-4Q	4338	1-4Q	0	0	0	0	0
Subtotal:			62055	2967		5347		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

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

PROJECT
336

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award 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:			361647	43736		66633		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0203802A - Other Missile Product Improvement Programs**	**785**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
785 LONGBOW HELLFIRE PIP	0	12164	18302	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Longbow HELLFIRE is a critical system to the Interim and Objective Forces. Longbow HELLFIRE provides the Army with a fire-and-forget, anti-armor capability for the Apache Longbow (Interim Force) and Commanche (Objective Force) helicopters. The fire-and-forget Longbow HELLFIRE system greatly increases aircrew survivability and dramatically improves target acquisition and engagement capabilities in adverse weather when the battlefield is obscured (smoke,fog,dust), and when the threat is using countermeasures. Evolutionary improvements are required to maintain the current effectiveness of the Longbow HELLFIRE missile against expanding regional power threats. The Longbow HELLFIRE Product Improvement Program (PIP) will improve Home-on-Jam (HOJ)/Anti-Jam (AJ) and add Counter-Active Protection System (CAPS) capabilities for the missile. The HOJ/AJ and CAPS objective is to maintain the Longbow HELLFIRE Missile System's low vulnerability, and susceptibility to any "hard kill" Active Protection System (APS) and battlefield jammer threats. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

Project not funded.

FY 2001 Planned Program

- 11436 Product Development
- 367 Management Service Support
- 361 Small Business Innovation Research/Small Business Technology Transfer

Total 12164

FY 2002 Planned Program

- 15062 Product Development
- 1356 Test and Evaluation Support
- 1884 Management Service Support

Total 18302

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
C70300 Longbow Hellfire/LBHF	292851	282745	234911	0	0	0	0	0	0	0

C. Acquisition Strategy: Development of the Longbow Hellfire HOJ/AJ and CAPS will be done jointly, the prime contractor being Longbow Limited Liability Company (LLLC). The U.S. Army Aviation and Missile Command (AMCOM) labs will provide assistance/technical expertise during the development effort.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Concept formulation/acquisition strategy LBHF PIP		1Q		0	0	0	0	0
LLLC contract award LBHF PIP		2Q		0	0	0	0	0
Requirements definition LBHF PIP		3Q		0	0	0	0	0
Complete detailed design LBHF HOJ/AJ			1Q	0	0	0	0	0
Integration and testing LBHF HOJ/AJ			2Q	0	0	0	0	0
Missile firings LBHF HOJ/AJ			3Q	0	0	0	0	0
Engineering Change Proposal LBHF HOJ/AJ			4Q	0	0	0	0	0
Complete detailed design LBHF CAPS				0	0	0	0	0
Integration and testing LBHF CAPS				0	0	0	0	0
Missile firings LBHF CAPS				0	0	0	0	0
Engineering Change Proposal LBHF CAPS				0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

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

PROJECT
785

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	LC/CPIF-AF	Lockheed Martin, Orlando, FL	0	8479	2Q	12722	2Q	0	0	0	0	0
b . Support Contracts	Various	Various	0	2168	1-4Q	1006	1-4Q	0	0	0	0	0
c . Development Engineering	Various	Various	0	789	1-4Q	1334	1-4Q	0	0	0	0	0
Subtotal:			0	11436		15062		0		0	0	0

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

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

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

PROJECT
785

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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		1356	1-4Q	0	0	0	0	0
Subtotal:			0	0		1356		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support	Various	Various	0	728	1-4Q	1884	1-4Q	0	0	0	0	0
Subtotal:			0	728		1884		0		0	0	0

Project Total Cost:			0	12164		18302		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0208010A - Joint Tactical Communications Program (TRI TAC)**	**107**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
107 ISYSCON DEVELOPMENT	16934	38563	21615	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

A requirement exists to provide Signal Corps units the automated capability to manage multiple tactical communication systems in support of battlefield operations. The Integrated System Control (ISYSCON) facility will provide centralized management of the tactical communication network, establish an interface with each technical control facility in the Army Tactical Command and Control System (ATCCS) architecture, and enable automated configuration and management in a dynamic battlefield data network. ISYSCON is being developed with incremental software releases. The ISYSCON Program serves as a baseline foundation to support future network management initiatives tied to and part of the digitized division and the Warfighter Information Network (WIN) architecture. This program element also supports any network management and the required interface with the Warfighter Information Network-Tactical (WIN-T) architecture. The Tactical Internet Management System (TIMS) is also being developed to do network planning and management of the Tactical Internet at Brigade and Below (Enhanced Position Locating Reporting System, Force Battle Command Brigade & Below, etc), as well as the Tactical Operation Center Local Area Network (TOC LAN). The Joint Network Management System (JNMS) is a Commander in Chief (CINC), Commander Joint Task Force (CJTF) communications planning and management tool. It provides the capability to conduct high level planning (war planning); detailed planning and engineering; monitoring; control and reconfiguration; spectrum planning and management; and security of networks, in support of joint operations. The JNMS will be developed in phases: System Architecture, Key Performance Parameters (KPP) Threshold, and Threshold and Objective. Starting in FY02, JNMS funding will transition to a separate Program Element (64783) and Project (D363).

The ISYSCON and TIM systems support the Legacy transition path of the Transformation Campaign Plan (TCP). The JNMS system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 1487 ISYSCON Conducted P2 Inc 1 Training V&V
- 1874 ISYSCON Conducted P2 Inc 1 FQT
- 1500 ISYSCON Conducted P2 Inc 1 Testing
- 1206 ISYSCON Conducted P2 Inc 1 Limited User Test (LUT) Training
- 1774 ISYSCON Conducted P2 Inc 1 LUT Testing

FY 2000 Accomplishments (Continued)

- 1741 ISYSCON Posted LUT Software Activities
- 1800 ISYSCON Performed Post LUT Baseline Regression Test
- 1200 ISYSCON P2 Inc 1 Software Release
- 1252 ISYSCON Initiated System Engineering Activities for P2 Increment 2
- 1200 TIMS Lab Development, test and report (Release 1)
- 400 TIMS Conducted Operational Assessment Test (Release 1)
- 1000 TIMS Initiated Joint Contingency Force Advanced Warfighter Experiment (JCF AWE)
- 500 TIMS Initiated Field Support (Release 2) (Interim Contractor Support)

Total 16934

FY 2001 Planned Program

- 1915 ISYSCON Initiate P2 Inc 2 Systems Requirements Analysis
- 1818 ISYSCON Initiate P2 Inc 2 System Design
- 1832 ISYSCON Initiate P2 Inc 2 Software Coding
- 2031 ISYSCON Initiate P2 Inc 2 Software Unit & System Test
- 1578 ISYSCON Conduct P2 Inc 2 BETA
- 1400 TIMS Complete System Engineering (Release 2.1)
- 1385 TIMS Complete Software Development (Release 2.1)
- 750 TIMS Conduct Test and Evaluation (Release 2.1)
- 1900 TIMS Complete Requirements and Analysis (Release 2.2)
- 1500 TIMS Conduct Operational Assessment(Release 2.2)
- 2493 TIMS Complete Systems Engineering(Release 2.2)
- 3000 TIMS Complete Software Development(Release 2.2)
- 950 TIMS Conduct Test & Evaluation (Release 2.2)
- 1000 TIMS Conduct Field Support(Release 2.1 & 2.2)

FY 2001 Planned Program (Continued)

- 2475 JNMS Initiate Concept Requirement and Analysis
- 4025 JNMS Initiate System Design
- 3591 JNMS Initiate Software Integration
- 409 JNMS Initiate Training for User Evaluation
- 1364 ABCS Systems Engineering and Integration Effort
- 1147 Small Business Innovation Research (1082)/Small Business Technology Transfer Program (65)
- 2000 Reprogrammed to Higher Army Priority

Total 38563

FY 2002 Planned Program

- 1900 ISYSCON Conduct P2 Inc 2 Software Coding
- 1600 ISYSCON Conduct P2 Inc 2 Software Unit & System Test
- 2139 ISYSCON Initiate Support to P2 Inc 2 OT&E
- 2000 ISYSCON Conduct P2 Inc 2 Training and V&V
- 1406 ISYSCON Conduct P2 Inc 2 Regression Test
- 2200 ISYSCON Conduct P2 Inc 2 OT&E Training
- 1500 ISYSCON Conduct P2 Inc 2 OT&E
- 1350 ISYSCON Initiate P2 Inc 3 Concept Requirement Review
- 1550 TIMS Conduct IOT&E (Release 2.2)
- 1100 TIMS Initiate Requirements and Analysis (Release 3.0)
- 1750 TIMS Initiate Systems Engineering (Release 3.0)
- 2200 TIMS Initiate Software Development (Release 3.0)
- 620 TIMS Conduct Test & Evaluation (Release 3.0)
- 300 WIN-Tactical Network Management and Associated Activities

Total 21615

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
President's Previous Budget (FY 2001 PB)	18293	38926	33520	0
Appropriated Value	18432	38926	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-492	0	0	0
c. Omnibus or Other Above Threshold Reductions	-75	0	0	0
d. Below Threshold Reprogramming	-867	-7	0	0
e. Rescissions	-64	-356	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	-11905	0
Current Budget Submit (FY 2002/2003 PB)	16934	38563	21615	0

FY2000: $867K reprogrammed to higher Army priority
FY 2001: -$7K, Dollars realligned due to DA alignment of priorities.
FY 2002: Funding realigned for higher priority requirements to include funding new JNMS Program Element. Decrease of $3M for ABCS System Engineering and Integration Efforts(PBD 703).
FY 2003: Funds for TIMS (+$7M); less small realignment to cover general reduction; and PBD 722 Decrement.

C. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Other Procurement, Army-2, BX0007 ISYSCON	13152	29100	32448	0	0	0	0	0	0	0
RDT&E, PE 64783, Proj D363, JNMS	0	0	26130	0	0	0	0	0	0	0

D. Acquisition Strategy: ISYSCON Competitive Engineering and Manufacturing Development (EMD) contract was awarded to General Dynamics in September 92. ISYSCON Low Rate Initial Production (LRIP) decision - May 95. First Initial Operational Test and Evaluation (IOT&E) - Mar 1998. Second IOT&E conducted/completed - Oct 98. LRIP systems supported IOT&E. Successful Milestone III - Feb 99 for ISYSCON (V)1 and (V)2. ISYSCON Phase 2 Increment 1 software will support fielding of production systems starting with echelon corps and below units. ISYSCON production systems will include acquisition of Government furnished equipment (common hardware and software(CHS)/Standardized Integrated Command Post System(SICPS)) hardware for the integration into system assemblages and fielding. The Tactical Internet Management System (TIMS) was developed from Army Warfighter Experiments that showed tactical network management and planning to be extremely time consuming. A DD-2028 change to the ISYSCON Requirement Operational Capability (ROC) identified the need for Tactical Internet and Tactical Operation Command (TI and TOC) Local Area Network management. In Mar 99, PM WIN-T signed a delivery order under the PM, Force XXI Battle Command Brigade and Below (FBCB2) contract with TRW, and another with Raytheon under the PM, Tactical Radio Communications System (TRCS) contract, in response to the DD-2028 requirements. Raytheon is under contract to develop an Enhanced Position/Location Reporting System Network Manager (ENM) capability while TRW will develop the remaining TIMS functionality (TOC LAN MGT, Router Configurations, Tactical Internet Configurer /Tactical Internet Designer, etc.) and integrate the ENM software onto a single platform. The TIMS is closely coupled to FBCB2 program events. A TIMS Operation Requirements Document (ORD) is in development to supercede the 2028 ISYSCON ROC and will be approved in 3QFY01. Release I of TIMS software was formally tested at the contractor's facility prior to the FBCB2 Customer Test (Apr 00). Release 2.1 was used for the FBCB2 Field Test 2 development test in Jan 00 and Release 2.2 was issued to 4th ID in Feb 01 to support the Division Capstone Exercise at NTC and the FBCB2 Limited User Test 2. Release 2.2 will be assessed at TIMS IOT&E in Dec 01 with a Milestone C decision in Jun 02. Joint Network Management System (JNMS): A competitive contract will be awarded on a best value basis for the development and integration of the JNMS software. TRADOC approved ORD dated 16 May 00.

E. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
ISYSCON Phase 2-Increment 1 FQT	2Q			0	0	0	0	0
ISYSCON LUT P2 Inc 1	3Q			0	0	0	0	0
ISYSCON Phase 2-Increment 2 Software Build		4Q		0	0	0	0	0
ISYSCON Phase 2 - Increment 2 FQT			3Q	0	0	0	0	0
ISYSCON OT&E for Phase 2 Increment 2			4Q	0	0	0	0	0
ISYSCON Phase 2-Increment 3 FQT				0	0	0	0	0
ISYSCON Phase 3-Increment 1 Software Build				0	0	0	0	0

E. Schedule Profile (continued)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
ISYSCON Phase 3-Increment 1 FQT				0	0	0	0	0
ISYSCON Phase 3-Increment 2 Software Build				0	0	0	0	0
ISYSCON Phase 3-Increment 2 FQT				0	0	0	0	0
TIMS Release 1	1Q			0	0	0	0	0
TIMS Release 2.1		1Q		0	0	0	0	0
TIMS Release 2.2		3Q		0	0	0	0	0
TIMS IOT&E Release 2.2			1Q	0	0	0	0	0
TIMS Milestone C Production			3Q	0	0	0	0	0
TIMS Release 3.0				0	0	0	0	0
TIMS Release 4.0				0	0	0	0	0
TIMS Release 4.1				0	0	0	0	0
JNMS Milestone I/II	4Q			0	0	0	0	0
JNMS Contract Award		3Q		0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0208010A - Joint Tactical Communications Program (TRI TAC)

PROJECT
107

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ISYS SW Development	CPAF	GD, Taunton, MA	99825	6607	1Q	11384	1Q	0	0	0	0	0
b . ISYS Award Fee Contingencies	CPAF	GD, Taunton, MA	5427	901		1354		0	0	0	0	0
c . ISYS GFE	FFP	GD, Taunton, MA	2239	0		0		0	0	0	0	0
d . TI MGR (1) Software Development	IDIQ	Raytheon, Fullerton, CA	650	0		0		0	0	0	0	0
e . TI MGR (2) Software Development	CPFF/TM	TRW, Carson, CA	11309	11834	1Q	5446	1Q	0	0	0	0	0
f . TI MGR GFE	FFP	GSA and GD, Taunton, MA	933	550	1Q	0		0	0	0	0	0
g . JNMS Development	CPFF/TM/ FFP	TBD	0	9044	3Q	0		0	0	0	0	0
h . ABCS Systems Engineering and Integration Effort			0	1364		0		0	0	0	0	0
i . Small Business Innovation Research (1082)/Small Business Technology Transfer Program (65)			0	1147		0		0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0208010A - Joint Tactical Communications Program (TRI TAC)

PROJECT
107

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 . Below Threshold Reprogramming of $2000 to WIN-T			0	2000		0		0	0	0	0	0
Subtotal:			120383	33447		18184		0		0	0	0

Remarks: I.a. Supports ongoing ISYS (V)1/2 software development to produce incremental software products. (Prior year cost includes $5.7M for Force XXI).
I.b. ISYSCON Award Fee cycles are semi-annual. (Prior to FY99 the rate was 7%. FY99 and beyond is at 12%).
I.e. Supports ongoing JNMS software development to produce phased products. TRADOC ORD dated 16 May 00. FY02 and beyond funding for JNMS will reside in PE/Project 64783/D363.

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

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0208010A - Joint Tactical Communications Program (TRI TAC)

PROJECT
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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 . ISYS Test Support	N/A	TEXCOM/APG/EPG	2375	200	1Q	0		0	0	0	0	0
b . ISYS Accreditation	N/A	Software Engineering Center	0	110	1Q	139	1Q	0	0	0	0	0
c . TI MGR (V)4 Test Support	TBD	TEXCOM/APG/EPG	0	1000	1Q	1000	1Q	0	0	0	0	0
d . JNMS Accreditation	TBD	Software Engineering Center	0	100	1Q	0		0	0	0	0	0
Subtotal:			2375	1410		1139		0		0	0	0

Remarks: III.a. Prior year funds provided to TEXCOM, Aberdeen Proving Ground (APG) and Electronic Proving Ground (EPG) test support for IOT&E 1 & II activity.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ISYS Contractor Engr	See remarks	MISC	17166	352	1Q	461	1Q	0	0	0	0	0
b . ISYS Government Engr	N/A	MISC	11750	704	1Q	739	1Q	0	0	0	0	0
c . ISYS PM Support-Core	N/A	PM WIN-T	1156	150	1Q	168	1Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0208010A - Joint Tactical Communications Program (TRI TAC)

PROJECT
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IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
d . ISYS Travel	N/A	MISC	989	150		150		0	0	0	0	0
e . TI MGR Contractor Engr	TBD	MISC	299	438	1Q	259	1Q	0	0	0	0	0
f . TI MGR Govermentt Engr	N/A	MISC	556	424	1Q	360	1Q	0	0	0	0	0
g . TI MGR PM Support-Core	N/A	PM, WIN-T	0	52	1Q	55	1Q	0	0	0	0	0
h . TI MGR Travel	N/A	MISC	65	80	1-4Q	100	1-4Q	0	0	0	0	0
i . JNMS Contractor Engr	TBD	MISC	0	512	1Q	0		0	0	0	0	0
j . JNMS Government Engr	N/A	MISC	0	486	1Q	0		0	0	0	0	0
k . JNMS PM Support-CORE	N/A	PM, WIN-T	0	158	1Q	0		0	0	0	0	0
l . JNMS Travel	N/A	MISC	0	200	1-4Q	0		0	0	0	0	0
Subtotal:			31981	3706		2292		0		0	0	0

Remarks: IV.a. Contractor engineering includes PM Support [Nations (T&M)], software development support [MITRE (FFRDC-CPFF) & JSC (CPAF 8%)], and $2M of Post Deployment SW Support (PDSS) in FY01.
IV.d,h,l. Travel will be expended throughout the year for Program Management Support.
IV.i,j,k,l. Starting in FY02 JNMS will transition to a separate Program Element (64783), and Project (D363).

Project Total Cost:			154739	38563		21615		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0208053A - JT Tactical Grd Sta (P3I) (TIARA)**	**635**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
635	JOINT TACT GRD STATION-P3I(TIARA)	27824	6208	5221	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This program element supports development of critical improvements to the Joint Tactical Ground Station (JTAGS). JTAGS is a transportable information processing system which receives and processes in-theater, direct down-linked data from Defense Support Program satellites and the follow-on Space Based Infrared System satellites. JTAGS disseminates warning, alerting and cueing information on Tactical Ballistic Missiles (TBMs) and other tactical events of interest throughout the theater using existing communication networks. JTAGS is designated the in-theater element of the United States Space Command's Theater Event System. JTAGS supports all Theater Missile Defense pillars and by being located in-theater, provides the shortest sensor to shooter connectivity. The objectives of the JTAGS improvements are to integrate the Joint Tactical Distribution System (JTIDS) into the communication net, increase system accuracy and timeliness, and upgrade JTAGS to the Multi-Mission Mobile Processor (M3P) for operation with the next generation of the space based infrared satellites. The M3P development for the Space Based Infrared System is a combined development effort with the U.S. Air Force. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 14491 Continue Phase II M3P development
- 12197 Continue Phase II M3P Integrated Product & Process Development (IPPD) support
- 343 Continue Phase II M3P Management support
- 793 Complete Phase I development

Total 27824

FY 2001 Planned Program

- 4556 Continue Phase II M3P IPPD support
- 1341 Continue Phase II M3P development
- 311 Continue Phase II M3P management support

Total 6208

FY 2002 Planned Program

- 3600 Continue Phase II M3P IPPD
- 1361 Continue Phase II M3P development
- 260 Continue Phase II M3P management support

Total 5221

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	28061	6267	5203	0
Appropriated Value	28061	6267	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	-115	0	0	0
b. SBIRS / STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-122	-59	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	18	0
Current Budget Submit (FY 2002/2003 PB)	27824	6208	5221	0

Misc reductions for the purpose of database balances.

C. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
BZ8420 Joint Tactical Ground Station Mods	0	0	0	0	0	0	0	0	0	0

D. Acquisition Strategy: Critical JTAGS improvements under this program element will be developed making maximum use of Non-Developmental Items/Commerical Off-The-Shelf elements. After selection and assembly, the modification design will be subject to thorough integration and performance testing to verify operational effectiveness and suitability. Phase II M3P will be a joint development effort with the U.S. Air Force and will involve cost sharing of the acquisition effort.

E. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Continue P3I Phase II Development	1Q			0	0	0	0	0
Complete P3I Phase I Development	1Q			0	0	0	0	0
Continue P3I Phase II Development		1Q		0	0	0	0	0
Continue P3I Phase II Development			1Q	0	0	0	0	0
Continue P3I Phase II Development				0	0	0	0	0
Continue P3I Phase II Development				0	0	0	0	0
Continue P3I Phase II Development				0	0	0	0	0
Initiate P3I Phase III Development				0	0	0	0	0
Continue P3I Phase III Development				0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0208053A - JT Tactical Grd Sta (P3I) (TIARA)

PROJECT
635

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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/CPAF	Lockheed / Sunnyvale, CA	20851	1341	2Q	1361	1Q	0	0	0	0	0
b . Engineering Services	C/CPFF	Aerojet / Azusa, CA	3258	0		0		0	0	0	0	0
c . In-House IPPD Support	N/A	Various	6901	1893		1976		0	0	0	0	0
d . Contractor Engineering IPPD Support	C/CPFF	Various	6666	1178	1Q	1198	1Q	0	0	0	0	0
e . Government Engineering IPPD Support	N/A	Various	7437	1485		426		0	0	0	0	0
f . Government Furnished Equipment	N/A	Various	465	0		0		0	0	0	0	0
Subtotal:			45578	5897		4961		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0208053A - JT Tactical Grd Sta (P3I) (TIARA)

PROJECT
635

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award 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
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 . Management Support	N/A	N/A	679	311		260		0	0	0	0	0
Subtotal:			679	311		260		0		0	0	0
Project Total Cost:			46257	6208		5221		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0303028A - INTEL SPT TO FORCE XXI**	**H13**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
H13	INFORMATION DOMINANCE CENTER (IDC) - TIARA	6684	0	452	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

Funds used for the development of a prototype for intelligence analysis and counter-intelligence operations supporting information operation missions. Denying, disrupting, and suppressing the adversary's information flow and his ability to effectively command and control his operations is the Army's goal of waging information-age warfare. The Information Dominance Center (IDC) is a beta development and demonstration facility, which uses advanced indigenously developed software and architectures for harvesting, visualizing, displaying, sharing across organizations, analyzing, fusing, and developing courses of action for commanders and decision makers in a real-time environment. The center can address both a tactical or strategic threat across a wide array of transnational and asymmetrical foes.

The IDC will play a critical role in Army's development of a full spectrum information operations capability that spans both the offensive and protective arenas. Key to waging an information war against an enemy will be gaining and maintaining full spectrum battlefield visualization, comprehension of enemy and friendly centers of gravity, knowledge of battlefield deception, Psychological Operations (PSYOP), public affairs, civil affairs, electronic warfare, Operations Security (OPSEC), and understanding of impact upon destruction or disruption of critical nodes (regional and local). The IDC will support Force Protection/anti-terrorism operations by providing predictive analysis and indications and warnings of attacks on our soldiers or infrastructure. The IDC also will be employed in support of peacekeeping and humanitarian aid missions. The IDC will demonstrate and test methodologies and Science and Technology tools that can provide operational plans to fight asymmetric and asynchronous warfare against transnational and non-aligned threats. This new capability would provide the unique collaborative environment to rapidly acquire diverse information, dynamically achieve situational awareness through advanced fusion and visualization techniques, and provide tailored courses of action to warfighters and DA decision-makers.

The IDC will correlate data from local and international media as well as operational and intelligence sources. The center will perform evaluation and prototyping of how threat mapping of political, military, economic, and social fabrics will aid in force protection/facilities protection for U.S. forces on the ground now or that might be sent in later. The IDC will be the prototype for fused battlefield visualization picture of the affects of air war at one location on a big screen display; collateral damage; infrastructure damage; location of paramilitary and military forces (Freedom fighters and Serbs); and dislocation of refugees and resultant humanitarian aid issues. The IDC will demonstrate a fused battlefield visualization picture of foreign and U.S. centers of gravity in support of contingency operations to help support diplomatic initiatives. It will prototype a fused, object oriented, GIS-oriented, visualization picture of the major political and economic players at international, national, regional, local levels in Serbia and surrounding regions. In addition, the IDC will leverage an ability to analyze a tactical view of the conflict enabling Army to

conduct offensive information operations (PSYOP, computer attack, deception and denial, media influence, cover operations) that could be used to compliment the air strikes.

FY 2000 Accomplishments

- 2687 Core IDC Software/Hardware Integration Contractor Support: This is the key team for integration and prototyping of leading edge technologies into the IDC. In addition, this team prior to integration will perform continuous prototyping of novel solutions. They are fundamentally responsible for overall architectural control and evolution of the composable architecture, which is the foundation for the Land Information warfare Act's (LIWA) operational uniqueness.
- 3997 TUAV Source Selection/System Capabilities Demo Data Storage and Support: This money enables a state of the art 200 Terabyte storage, retrieval, backup and querying capability for a distributed architecture. The IDC is based on a database centric paradigm enabling state of the art business enterprise applications to be incorporated.

Total 6684

FY 2001 Planned Program

Program not funded

FY 2002 Planned Program

- 450 Contractor will continue to develop means of integrating leading edge technology into the Information Dominance Center's intelligence production and analysis capability.

Total 450

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0303028A - INTEL SPT TO FORCE XXI**	**H13**

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
President's Previous Budget (FY 2001 PB)	6866	0	0	0
Appropriated Value	7000	0	452	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-184	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-132	0	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	0	0
Current Budget Submit (FY 2002/2003 PB)	6684	0	452	0

C. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Security and Investigative Activities, BA411128)	2700	4200	0	0	0	0	0	0	0	0

D. Acquisition Strategy: The Army strategy is to add emerging command and control information technology to existing information and decision support architectures. Systems will largely be off-the-shelf procurements. A time and materials contract, awarded to Sterling Software, is used for software and hardware integration. A time and materials contract awarded to SYTEX, Inc. is used for development of intelligence modeling support.

E. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Develop Establish Data warehousing/Data mining capability	1Q-4Q			0	0	0	0	0
Develop Establish Conectivity/Collaboration Capability	1Q-4Q			0	0	0	0	0
Develop Information Visualization Capability	1Q-4Q			0	0	0	0	0
C2 Development/Improvements	1Q-4Q			0	0	0	0	0
Design extended IDC capability		1Q		0	0	0	0	0
Develop software/hardware architecture		1Q	1Q-4Q	0	0	0	0	0
Integrate extended capability with current systems		2Q-3Q		0	0	0	0	0
Develop tailored database schema and ontology		3Q		0	0	0	0	0
Conduct preliminary system tests		4Q		0	0	0	0	0
Conduct field tests		4Q		0	0	0	0	0

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

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303140A - Communications Security (COMSEC) Equipment

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	14861	14503	8261	0	0	0	0	0	0	0
491 INFORMATION ASSURANCE DEVELOPMENT	13603	13229	7127	0	0	0	0	0	0	0
501 ARMY KEY MGT SYSTEM	1258	1274	1134	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The Communications Security Equipment Program develops Information Systems Security (ISS) equipment and techniques required to combat threat Signal Intelligence capabilities and to insure the integrity of data networks. This program will also develop, integrate, and demonstrate C2 Protect Common Tools into C4I systems that consist of hardware, software, and applications that can manage, protect, detect and react to C2 system vulnerabilities, threats, reconfigurations, and reconstitution. The Army's Research Development Test and Evaluation (RDTE) ISS program objective is to implement National Security Agency (NSA) developed security technology in Army information systems. The Communications Security Equipment Technology (COMSEC) insures total signal and data security for all Army information systems, to include any operational enhancement and specialized Army configurations. The Army Key Management System (AKMS) automates key generation and distribution while supporting joint interoperability. It provides communications and network planning with key management. AKMS is a part of the management/support infrastructure for the Warfighter Information Network (WIN) program. Additional modifications to the AKMS baseline are required to support the emerging WIN architecture. System security engineering, integration of available Information Security (INFOSEC) products, development, and testing are provided to ensure that C4I systems are protected against malicious or accidental attacks. Modeling, simulation, and risk management tools will be used to develop C2 Protect capabilities, enabling the warfighter to distribute complete and unaltered information and maintain a dynamic, continuous synchronous operational force. Several joint service/NSA working groups exist in the area of key management in order to avoid duplication and assure interoperability between all systems, including the establishment of standards and testing. The Defense Information Systems Agency (DISA) Multi-Level Security (MLS) working group coordinates all the different ongoing technology efforts.

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

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303140A - Communications Security (COMSEC) Equipment

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	9426	8140	8234	0
Appropriated Value	15426	14640	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-386	0	0	
c. Omnibus or Other Above Threshold Reductions	-59	0	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	-120	-135	0	
Adjustments to Budget Years Since FY2001 PB	0	0	27	
Current Budget Submit (FY 2002/2003 PB)	14861	14505	8261	0

FY01 funds increased $6.5M due to Congressional adds to the President's Budget. $4.5M for PKI Finishing Application and $2.0M for National Ground Intelligence/National Collaborative Environment.

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0303140A - Communications Security (COMSEC) Equipment**	**491**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
491	INFORMATION ASSURANCE DEVELOPMENT	13603	13229	7127	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Project D491 - Command and Control (C2) Protect Development: Project implements National Security Agency (NSA) developed security technology in Army information systems. Project objectives are to provide systems security mechanisms through encryption, trusted software or standard operating procedures, to protect the information, and to integrate these mechanisms into specified systems, securing operations in as transparent a manner possible. This entails architecture studies and modeling, development models, system integration and testing, installation kits, and certifications and accreditation of Automation Information Systems. Project will also assess, develop, integrate and demonstrate C2 Protect Common tools (hardware and software) providing protection for fixed infrastructure post, camp and station networks as well as efforts on tactical networks. Efforts are also leveraged into and complement the Tactical C2 Protect program in PEs 0602782A and 0603006A. This program supports the Legacy to Objective transition path of the Transformation Campaign.

FY 2000 Accomplishments

- 1570 Performed in-house evaluations and integration of INFOSEC Non-Developmental Item (NDI) equipment into both trusted and untrusted computer platforms and secure applications.
- 470 Provided support for TACLANE/FASTLANE thru development of installation kits and providing engineering support during system fielding.
- 250 Performed in-house study/evaluation for Secure Gateway (SEGAT) providing seamless, secure connectivity between major Army tactical communication networks at different security levels.
- 3581 Developed and evaluated C2 Protect Common Tools as follows:

  - Selected and adapted Commercial off the shelf (COTS)/Government off the shelf (GOTS) Security Management tools, developing for use in First Digitized Division (FDD) and beyond.

  - Investigated and evaluated COTS/GOTS C2 protect tools for tactical and/or sustaining base security requirements to include updates to currently selected tools in the areas of vulnerability assessment, host and network based intrusion detection, and firewalls.

  - Stressed and evaluated commercial or developmental protect tools being considered for use in Army tactical networks.

  - Conducted code analysis of C2 protect tools for weaknesses, Trojan Horses, and vulnerabilities that can render systems and networks at high risk for attack.

FY 2000 Accomplishments (Continued)

- 1732 Supported Army Electronics Key Management System (EKMS) Tier One
- 6000 Started deployment of Defense Health Care Information Assurance Program.

Total 13603

FY 2001 Planned Program

- 903 Support development efforts on Secure Gateway program.
- 1000 Support in-house evaluations of NDI and NSA INFOSEC devices and chips, provide engineering/fielding support to TACLANE and Asynchronous Transfer Mode (ATM) encryption program with development of necessary installation kits.
- 4713 Support the development and evaluation of C2 Protect Common Tools as follows:
  - Ensure remote monitoring and host agent operation.
  - Extend security management concept for framework that can manage echelons, corps and below.
  - Tie in protect tools at sustaining base.
  - Support Information Assurance Network Assessment to verify robustness of network tools.
- 4455 - Support for Information Assurance Program, PKI (Public Key Infrastructure).
  - Accelerate the development and use of Public Key Infrastructure (PKI) services and enable applications to support a broad range of security services.
- 1932 - National Ground Intelligence Center/National Collaborative Environment
- 226 -Funds reprogrammed for SBIR/STTR Programs

Total 13229

FY 2002 Planned Program

- 2241 - Support development of Secure Gateway and begin testing of the developing products.
  - Continue the in-house evaluations of new Non Developmental Item (NDI) and NSA infosecurity products and development of installation kits for Network Security Equipments.
  - Support TACLANE/FASTLANE installation and integration thru installation kit development.
- 4886 Support the development of information assurance tools as follows:
  - Perform post FDD information assurance network assessment to improve security posture.
  - Select and assess advanced COTS/GOTS information assurance tools.
  - Conduct field test "red teaming".
  - Tailor tool enhancement for unique tactical applications.

Total 7127

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0303140A - Communications Security (COMSEC) Equipment**	**491**

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA TA0600	48600	79234	42244	0	0	0	0	0	0	0

C. Acquisition Strategy: The object of the C2 Protect Program is to develop, integrate, and validate hardware and software tools that will secure the Tactical Internet (TI) in the FDD. FY 2000 and beyond focuses on completing development and evaluation of C2 Protect tools for the FDD and beyond that will support the procurement of C2 Protect tools and will secure the TI for the lower and upper levels of the Tactical Internet.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
AIRTERM (KY-100)				0	0	0	0	0
· OEC Test				0	0	0	0	0
· Type Classification (conditional)				0	0	0	0	0
· Installation Kit Development				0	0	0	0	0
· Installation Kit Test & Evaluation				0	0	0	0	0
· Acquisition of Installation Kits	1-4Q			0	0	0	0	0
· OEC Test of Wideband Mode of KY-100	1-4Q			0	0	0	0	0
· Type Classification Standard (TC Standard)	1-4Q			0	0	0	0	0
· Full fielding of AIRTERM		1-4Q		0	0	0	0	0
TISM				0	0	0	0	0
· Prototype Development				0	0	0	0	0
· Laboratory Testing	1-4Q	1-4Q		0	0	0	0	0
Environmental				0	0	0	0	0
Secure Gateway				0	0	0	0	0
Field Testing				0	0	0	0	0
· Study	1-4Q			0	0	0	0	0
· Prototype Development Initiation		1-4Q	1-4Q	0	0	0	0	0
C2 Protect				0	0	0	0	0
· Network Access Control	1-4Q	1-4Q	1-4Q	0	0	0	0	0
· Intrusion Detection Control	1-4Q	1-4Q	1-4Q	0	0	0	0	0

D. Schedule Profile (continued)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
· Host Machine Vulnerabilities	1-4Q	1-4Q	1-4Q	0	0	0	0	0
· Risk Management	1-4Q	1-4Q	1-4Q	0	0	0	0	0
· Anti-Viruses	1-4Q	1-4Q	1-4Q	0	0	0	0	0
· Purge Tools	1-4Q	1-4Q	1-4Q	0	0	0	0	0
· Audit Analysis	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Security Management	1-4Q	1-4Q	1-4Q	0	0	0	0	0
TACLANE				0	0	0	0	0
Type Classification (conditional)		2Q		0	0	0	0	0
Installation Kit Development	1-4Q			0	0	0	0	0
Installation Kit Test & Evaluation	1-4Q			0	0	0	0	0
Acquisition of Installation Kits		1-4Q		0	0	0	0	0
Type Classification Standard (TC Standard)			1-4Q	0	0	0	0	0
INE Upgrades				0	0	0	0	0
LPI Technigques - Investigate Techniques				0	0	0	0	0
LPI - Prototype & Test				0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303140A - Communications Security (COMSEC) Equipment

PROJECT
491

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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		CECOM, RDEC	14508	4399	1Q	2323	1Q	0	0	0	0	0
b . TACLANE	MIPR	NSA	2684	0		0		0	0	0	0	0
c . SEGAT	CPFF	CSC, Eatontown, NJ	40	500		0		0	0	0	0	0
d . EKMS	MIPR	Navy, Washington	2000	0		0		0	0	0	0	0
e . Contracted Services			0	0		0		0	0	0	0	0
f . (1)	TBD	Quantum Research, TX	0	43	1-4Q	0		0	0	0	0	0
g . (2)	C-CPFF	Booz, Allen & Hamilton, Linthicum MD	1603	159		0		0	0	0	0	0
h . (3)	C-CPFF	SYTEX, Inc Tinton Falls, NJ	1182	56		0		0	0	0	0	0
i . (4)	T&M	CSC, Eatontown, NJ	0	140	1-4Q	0		0	0	0	0	0
j . (5)	C-Reimb.	Mitre, McLean, VA	513	200	1-4Q	0		0	0	0	0	0
k . (6)	CPAF	Telos, Tinton Falls, NJ	281	219	1-4Q	0		0	0	0	0	0
l . (7)	C-CPFF	Atlantic Consulting Services, GA	0	900	1-4Q	0	1-4Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303140A - Communications Security (COMSEC) Equipment

PROJECT
491

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
m . C2 Protect	C-CPFF	TBD	0	0		4804	1-4Q	0	0	0	0	0
n . DHIAP	C-Reimb	SCRA/Adv Tech Inst, SC	6271	0		0		0	0	0	0	0
o . DHIAP	PO	Health Tech Strategies, McLean Va	229	0		0		0	0	0	0	0
p . Information Assurance Program		TBD	0	4455	1-4Q	0		0	0	0	0	0
q . NGI Ctr/Natl Collaborative Environment		TBD	0	1932	1-4Q	0		0	0	0	0	0
r . Def Health Care Info Assurance Prgrm			5527	0		0		0	0	0	0	0
s . SBIR/STTR			0	226		0		0	0	0	0	0
Subtotal:			34838	13229		7127		0		0	0	0

Remarks: FY01 Includes Congressional Plus-up of $4.5M for Information Assurance PKI (Public Key Infrastructure) and $2.0M for the National Ground Intelligence Center/National Collaborative Environment.

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303140A - Communications Security (COMSEC) Equipment

PROJECT
491

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award 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
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

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

Remarks: Not Applicable

Project Total Cost:			34838	13229		7127		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0303140A - Communications Security (COMSEC) Equipment**	**501**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
501 ARMY KEY MGT SYSTEM	1258	1274	1134	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Project D501 - Army Key Management System (AKMS): This program provides decentralized and automated key generation, distribution and management while enhancing joint interoperability. It eliminates paper encryption and provides communications network planning with key management.
This system supports the Legacy transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 1258 Continued software development upgrades to the AKMS Workstation development environment that allows support of emerging and future weapons systems.

Total 1258

FY 2001 Planned Program

- 1099 Develop next set of software tools for the AKMS Workstation development environment.
- 112 Government Engineering
- 25 Testing
- 38 Small Business Innovation Research (36)/Small Business Technology Transfer Program (2)

Total 1274

FY 2002 Planned Program

- 1020 Continue development of next set of software tools for the AKMS Workstation development environment.
- 114 Government Engineering

Total 1134

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA BA1201	10990	10868	12203	0	0	0	0	0	0	0

C. Acquisition Strategy: AKMS Initial Operational Test and Evaluation (IOTE) occurred in August - September FY97. Direction was provided to separate the Local COMSEC Management Software (LCMS) from the Automated Communication Engineering System (ACES). Milestone III was conducted in June 1999 and the acquisition strategy and type classification for LCMS was approved. The IOC for LCMS was completed in 4Q FY00 and the IOC for ACES is scheduled for 4Q FY01.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Materiel Release (LCMS)	4Q			0	0	0	0	0
LCMS IOC	4Q			0	0	0	0	0
ACES Software Functional Testing	3Q			0	0	0	0	0
ACES LUT	4Q			0	0	0	0	0
Materiel Release (ACES)		3Q		0	0	0	0	0
ACES IOC		4Q		0	0	0	0	0
AKMS Materiel Release for new Army Acquisition Programs			1-4Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303140A - Communications Security (COMSEC) Equipment

PROJECT
501

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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/T&M	GTC, Tampa, FL	20919	90	1Q	0		0	0	0	0	0
b . Software development	TBD	TBD	0	1047	3Q	1020	2Q	0	0	0	0	0
c . EKMS	MIPR	Navy, Washington	3900	0		0		0	0	0	0	0
Subtotal:			24819	1137		1020		0		0	0	0

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

Remarks: Not Applicable

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303140A - Communications Security (COMSEC) Equipment

PROJECT
501

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	N/A	SPARWAR, San Diego, CA	0	25	2Q	0		0	0	0	0	0
Subtotal:			0	25		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 . Contractor Engineering	C/T&M	TELOS System Integration, Ashburn, VA	154	0		0		0	0	0	0	0
b . Government Engineeering	N/A		324	112	1-2Q	114	1-2Q	0	0	0	0	0
Subtotal:			478	112		114		0		0	0	0

Remarks: Not Applicable

Project Total Cost:			25297	1274		1134		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0303141A - Global Combat Support System**	**083**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
083	GLOBAL COMBAT SUPPORT SYS - ARMY (GCSS-ARMY)	0	73664	94177	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The Global Combat Support System-Army (GCSS-A) is a premier information system being developed to support logistics management. It integrates and consolidates the 13 legacy system baselines which now supports Army tactical logistics. Consists of six major modules - Supply/Property (SPR), Maintenance (MNT), Supply Support Activity (SSA), Integrated Materiel Management (IMM), Management (MGT), and Ammunition Supply. Implementation of the Global Combat Support System (Retail/Tactical) is a modernization and integration of the current 13 legacy system baselines. They are being transformed from multiple stovepipe and non-integrated systems to a seamless, integrated and modern web-based application.

FY 2000 Accomplishments

Project funded in Operation & Maintenance, Army (OMA)

FY 2001 Planned Program

- 68912 Software and web-based development, system engineering, incorporation of new functionalities, integration, and testing for fielding decision on the Supply/Property (SPR) module and Build 1 of the Integrated Materiel Management (IMM) and Management (MGT) modules.
- 2052 SIBR/STTR
- 2700 PMO operations

Total 73664

FY 2002 Planned Program

- 91377 Provides for software and web-based development, incorporation of new functionalities, integration, system engineering, and testing to support a Milestone C decision on the Supply/Property module Build 1, Build 2, and Build 3 and a fielding decision for the Maintenance (MNT) module.
- 2800 PMO operations

Total 94177

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	0	71955	92453	0
Appropriated Value	0	71955	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0	0
d. Below Threshold Reprogramming	0	2369	0	0
e. Rescissions	0	-660	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	1724	0
Current Budget Submit (FY 2002/2003 PB)	0	73664	94177	0

FY02 increase a result of realignment of funds to higher priorities.

C. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA SSN: W00800, STACOMP	27569	29754	51955	0	0	0	0	0	0	0
OMA APE: 432612/432615	52607	10982	11609	0	0	0	0	0	0	0

D. Acquisition Strategy: The process owner is Deputy Chief of Staff for Logistics. GCSS-Army is managed by Project Manager, GCSS-Army. PM GCSS-Army is assigned to the PEO, STAMIS, who reports directly to the Army Acquisition Executive. Integrated Process Teams (IPT) were used to formally manage the acquisition process and continue to be used for requirements definition through the Joint Application Development (JAD). The software developers hold numerous JAD meetings bringing the users to a central location, discussing user needs and developing system requirements. The Army Corporate Information Officer (CIO) has oversight of the GCSS-Army project. The acquisition Program Baseline documents all cost, schedules, and technical performance criteria. Performance goals are defined in the Mission Essential Tasks (METs) and non-METs lists. 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. GCSS-Army has developed a Risk Management Plan that identifies risk descriptions, their initiating events and appropriate mitigation/contingency strategies.

E. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
New functionalities/Web development		1-4Q	1-4Q	0	0	0	0	0
Milestone C, Supply Property Module			1Q	0	0	0	0	0
Fielding Decision, Integrated Materiel Mgt and Mgt Module				0	0	0	0	0
Fielding Decision, Maintenance Module Build 1			4Q	0	0	0	0	0
Fielding Decision, Maintenance Module Build 2				0	0	0	0	0
Fielding Decision, Supply Support Activity Modules				0	0	0	0	0
Fielding Decision, Ammunition Supply Module				0	0	0	0	0
Functional Enhancements		1-4Q	1-4Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303141A - Global Combat Support System

PROJECT
083

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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 Dev, Engineering, Testing, Program Management	C/CPIF	TBS	0	24735	3Q	29409	3Q	0	0	0	0	0
b . New Functionalities/Web-based	C/FP	TBS	0	30700	3Q	49187	3Q	0	0	0	0	0
c . Integrated Concept Team	MIPR	CASCOM, Ft Lee,VA	0	1364	1Q	1165	1Q	0	0	0	0	0
d . Software Dev	MIPR	SDC-L, Ft Lee, VA	0	2300	1Q	2300	1Q	0	0	0	0	0
Subtotal:			0	59099		82061		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	SRC, Petersburg, VA	0	2400	4Q	2400	4Q	0	0	0	0	0
b . Engrg, Security & Testing	NA	NA	0	3050	1-2Q	3098	1-2Q	0	0	0	0	0
Subtotal:			0	5450		5498		0		0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303141A - Global Combat Support System

PROJECT
083

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ATEC	MIPR	TEXCOM, Ft Hood, TX	0	4000	4Q	3500	4Q	0	0	0	0	0
b . Ft. Hood Facility	C/FP	Killeen, TX	0	300	4Q	300	4Q	0	0	0	0	0
Subtotal:			0	4300		3800		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PMO Operations	NA	NA	0	2763	1-4Q	2818	1-4Q	0	0	0	0	0
b . Other (SBIR/STTR)			0	2052		0		0	0	0	0	0
Subtotal:			0	4815		2818		0		0	0	0
Project Total Cost:			0	73664		94177		0		0	0	0

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

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303142A - SATCOM Ground Environment

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		34760	42926	47647	0	0	0	0	0	0	0
253	DSCS-DCS (PHASE II)	8676	9842	13193	0	0	0	0	0	0	0
384	SMART-T	13462	17168	19028	0	0	0	0	0	0	0
456	MILSATCOM SYSTEM ENGINEERING	6081	8875	15426	0	0	0	0	0	0	0
559	AUTO COM MGT SY (ACMS)	5601	6033	0	0	0	0	0	0	0	0
561	MIL INDIV COMM (MIC)	940	1008	0	0	0	0	0	0	0	0
562	MBAND INT SAT TERM MIST	0	0	0	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

Military Satellite Communication (MILSATCOM) systems are joint program/project efforts to satisfy ground mobile requirements for each Service, the Joint Chiefs of Staff (JCS), the National Command Authority, the Commanders-In-Chief (CINCs), the National Security Agency, the Office of the Secretary of Defense, and other governmental, non-DoD users. The worldwide MILSATCOM systems are: Ultra High Frequency (UHF) Fleet Satellite/Air Force Satellite (FLTSAT/AFSAT) system; the Super High Frequency (SHF) Defense Satellite Communications System (DSCS); the Extremely High Frequency (EHF) MILSTAR system; the UHF Follow-On Satellite system; the Automated Communications Management System (ACMS); the Joint Network Planning and Central Tool; the Military Individual Communicator (MIC); and all MIL-STD-1582C compatible payloads. As the lead service for MILSATCOM Ground Subsystems, the Army is responsible for developing, and procuring satellite terminals, satellite control subsystems, communication subsystems, and all related equipment. This responsibility also includes maintaining the life cycle logistics support required to achieve end-to-end connectivity, satisfying JCS Command, Control, Communications, and Intelligence (C3I) in support of the President, JCS, CINCs, Military Departments, Department of State, and other government Departments and Agencies.

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303142A - SATCOM Ground Environment

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	35958	43229	37087	0
Appropriated Value	36230	43229		
Adjustments to Appropriated Value				
a. Congressional General Reductions				
b. SBIR / STTR	-962			
c. Omnibus or Other Above Threshold Reductions	-148			
d. Below Threshold Reprogramming				
e. Rescissions	-124	-303		
Adjustments to Budget Years Since FY2001 PB		0	10554	
Current Budget Submit (FY 2002/2003 PB)	34996	42926	47641	0

FY02/03: Fund increases due to re-alignments based on critical Army priorities.

D456 MILSATCOM System Engineering (FY02 $4617K & FY03 $10,578K)
D384 SMART-T (FY02 $4,068K & FY03 $3,049K)
D253 DSCS (FY02 $1,869K & FY03 $672K)

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

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0303142A - SATCOM Ground Environment**	**253**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
253 DSCS-DCS (PHASE II)	8676	9842	13193	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Project D253 - DSCS-DCS Phase II: This project provides funds to develop strategic and tactical Ground Subsystem equipment in support of JCS validated Command, Control, Communications and Intelligence (C3I) requirements for the worldwide Super High Frequency (SHF) Defense Satellite Communications System (DSCS) and the Wideband Gapfiller System (WGS) program. Continuing upgrades for the DSCS and WGS are vital to support the emerging power projection and rapid deployment role of the Armed Forces. DSCS and WGS provide warfighters multiple channels of tactical connectivity as well as interfaces with strategic networks and national decision-makers. This system supports the legacy transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 3001 Continue the DSCS Integrated Management System (DIMS) Interface Software program
- 4338 Continue the Common Network Planning Software (CNPS) program
- 1337 Continue Software Engineering Lab (SEL), PM Admin, and Systems Engineering Technical Assistance (SETA) efforts

Total 8676

FY 2001 Planned Program

- 3246 Continue the DIMS Interface Software program
- 4935 Continue the CNPS program
- 1385 Continue SEL, PM Admin, and SETA efforts
- 276 Small Business Innovative Research / Small Business Technology Transfer Program (SBIR/STTR)

Total 9842

FY 2002 Planned Program

- 3644 Continue the DIMS Interface Software program
- 5759 Continue the CNPS program
- 2290 Continue SEL, PM Admin, and SETA efforts
- 1500 Support of CNPS development for Wideband Gapfiller System

Total 13193

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA 2 - SSN: BB8500	68194	70837	99420	0	0	0	0	0	0	0

C. Acquisition Strategy: The DSCS Integrated Management System (DIMS) and Common Network Planning Software (CNPS) programs will not have follow-on production programs. DIMS provides the capability to electronically disseminate network plans to the monitoring and controlling DSCS Operations Control System (DOCS) subsystems, and retrieve and display subsystem monitoring data. It also provides a comprehensive view of network operations at DSCS Operations Centers and DISA management sites. CNPS will plan strategic and Ground Mobile Forces (GMF) satellite communication networks for DSCS, Wideband Gapfiller, and commercial satellites. DIMS and CNPS will be installed at DSCS Operations Centers and DISA Management Sites at worldwide locations.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
CNPS Critical Design Review (CDR)		1Q		0	0	0	0	0
Complete CNPS Testing				0	0	0	0	0
DIMS Version 3.0 Software Testing	2Q			0	0	0	0	0
DIMS Version 4.0 Software Testing			1Q	0	0	0	0	0
DIMS Version 5.0 Software Testing - Beginning				0	0	0	0	0
DIMS Version 5.0 Software Testing - Ending				0	0	0	0	0
DIMS Version 6.0 Software Testing - Beginning				0	0	0	0	0
DIMS Version 6.0 Software Testing - Ending				0	0	0	0	0

CNPS CDR and DIMS V3.0 Testing milestones are completed.

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

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PROJECT
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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 . DIMS Software	C / CPFF	JHU/APL, Laurel, MD	9904	2778	1-2Q	3119	1-2Q	0	0	0	0	0
b . CNPS	C / FFP	Logicon, Winter Park, FL	3654	4230	1-2Q	6434	1-2Q	0	0	0	0	0
Subtotal:			13558	7008		9553		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	Fort Monmouth, NJ	676	916	1-2Q	950	1-2Q	0	0	0	0	0
b . SETA Support	C / CPFF	Fort Monmouth, NJ	272	257	1-2Q	300	1-2Q	0	0	0	0	0
c . Engineering Support	C / CPFF	JHU/APL, Laurel, MD	100	0		100	1-2Q	0	0	0	0	0
d . Core Support	Various	Fort Monmouth, NJ	455	449	1-4Q	505	1-4Q	0	0	0	0	0
Subtotal:			1503	1622		1855		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303142A - SATCOM Ground Environment

PROJECT
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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 . SEL	MIPR	Fort Monmouth, NJ	1816	328	1-2Q	1125	1-2Q	0	0	0	0	0
Subtotal:			1816	328		1125		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Admin	Various	Fort Monmouth, NJ	1371	608	1-4Q	660	1-4Q	0	0	0	0	0
b . SBIR/STTR			0	276		0		0	0	0	0	0
Subtotal:			1371	884		660		0		0	0	0
Project Total Cost:			18248	9842		13193		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0303142A - SATCOM Ground Environment**	**384**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
384 SMART-T	13462	17168	19028	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Project D384 - SMART-T: The Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T) will provide a range extension capability for the Army's Mobile Subscriber Equipment (MSE) to support the Force Projection Army. Specifically, it will provide a satellite interface to permit uninterrupted communications as our advancing forces move beyond the line-of-sight capability of MSE. This equipment will communicate at both low and medium data rates (LDR/MDR) over the MILSTAR satellite constellation. It will also be compatible with the UHF Follow-On (UFO), the Navy Fleet SATCOM EHF satellite packages, and MIL-STD-1582C compatible payloads. It will provide the security, mobility, and anti-jam capability required to defeat the threat and satisfy the critical need. The SMART-T will also have Low Probability of Interception and Low Probability of Detection (LPI/LPD), avoiding targeting for destruction, jamming, or intercept. The prime mover will be a High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) configured with all the electronics and the self-erectable antenna. In order to maintain proficiency with the terminal, given limited satellite access for training, two new EHF payload simulators are under development for training at Fort Gordon and other RDTE activity sites. The SMART-T provides mobile anti-jam reliable communications for the warfighter. Program also includes an upgrade to the SMART-T terminals to attain AEHF capability for synchronization with the National Team Schedule. This system supports the Legacy transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 4781 Complete development of Demand Assigned Multiple Access (DAMA) and continue development of Packet DAMA
- 3650 Begin EHF satellite payload simulator development efforts for new simulators
- 2731 Continued payload specification change development
- 1300 Operated interim EHF "lab configured" payload simulator at Fort Hood
- 1000 Began initial Advanced EHF (AEHF) component efforts

Total 13462

FY 2001 Planned Program

- 262 Complete Packet DAMA development efforts and continue payload specification change development
- 2706 Continue development of AEHF satellite payload simulators
- 13700 Continue AEHF development efforts
- 500 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)

Total 17168

FY 2002 Planned Program

- 2000 Continue payload specification change development
- 2984 Continue development of AEHF satellite payload simulators
- 14044 Continue AEHF development efforts

Total 19028

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Other Procurement Army 2 - SSN: BC 4002	924	31561	21704	0	0	0	0	0	0	0
Other Procurement Army 4 - SSN: BS 9720	0	5148	2569	0	0	0	0	0	0	0

C. Acquisition Strategy: The SMART-T program employed a competitive development strategy. The development phase included two contractors performing under Cost-Plus-Incentive-Fee (CPIF) contracts. The contracts were awarded on 9 November 1992 to Raytheon Company (Marlborough, MA) and Rockwell International (Richardson, TX). Twelve Engineering Development Model (EDM) terminals (6 from each contractor) were developed under the two contracts. The streamlining features of this phase included a reliability growth plan to achieve the required levels by Follow-On Test and Evaluation (FOT&E). The Low Rate Initial Production (LRIP) and Full Rate Production (FRP) contract was competitively awarded to Raytheon Company on 7 February 1996. SMART-T Milestone III Decision was successfully completed Nov 98. Award of the first FRP Option occurred in Jan 99. The total terminals procured to date through the LRIP/FRP are 141 terminals (88 Army, 29 Air Force, and 24 Marines). Additional quantities will be procured to satisfy the Army, Joint Services and other DoD activities. The development of an AEHF capability for the SMART-T terminal began in FY00, and will result in production terminals in FY06.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
FOT&E		4Q		0	0	0	0	0
Complete Packet DAMA Development		2Q		0	0	0	0	0
IOC		2Q		0	0	0	0	0
Begin New EHF Simulator Development	2Q			0	0	0	0	0
Complete New EHF Simulator Development				0	0	0	0	0
Complete AEHF Development				0	0	0	0	0
Complete Payload Specification Change Development				0	0	0	0	0
Award Production Block Mod Contract				0	0	0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303142A - SATCOM Ground Environment

PROJECT
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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 . Dual Development Contracts	C / CPIF	Rockwell Richardson, TX / Raytheon Marlborough, MA	117173	0		0		0	0	0	0	0
b . Baseline Mods	SS / CPAF	Raytheon Marlborough, MA	57733	12357	3Q	15118	2Q	0	0	0	0	0
c . Govt Support	MIPR	Various	13139	602	1Q	600	1Q	0	0	0	0	0
d . GFE	MIPR	Various	149	0		0		0	0	0	0	0
Subtotal:			188194	12959		15718		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Other Contracts	MIPR	Various	11290	0		0		0	0	0	0	0
b . Core Support	N/A	PM MILSATCOM Ft. Monmouth, NJ	4752	426	1Q	400	1Q	0	0	0	0	0
c . Lab Activities	MIPR	Various	6206	700	1Q	600	1Q	0	0	0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			22248	1126		1000		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 . Simulator Development	MIPR	Lincoln Labs Lexington, MA	16160	2583	2Q	2310	2Q	0	0	0	0	0
b . DT&OT Test Support	MIPR	Lincoln Labs Lexington, MA	6700	0		0		0	0	0	0	0
c . Test Bed Development	MIPR	Lincoln Labs Lexington, MA	2980	0		0		0	0	0	0	0
Subtotal:			25840	2583		2310		0		0	0	0

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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 . Tech Support of SMART-T Development	MIPR	Lincoln Labs Lexington, MA	7900	0		0		0	0	0	0	0
b . SBIR/STTR			0	500		0		0	0	0	0	0
Subtotal:			7900	500		0		0		0	0	0
Project Total Cost:			244182	17168		19028		0		0	0	0

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

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0303142A - SATCOM Ground Environment**	**456**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
456	MILSATCOM SYSTEM ENGINEERING	6081	8875	15426	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Project D456 - MILSATCOM System Engineering: The Army is responsible for developing, procuring, and maintaining the life cycle logistics support for satellite terminals, satellite control subsystems, communications subsystems, and all related equipment required to achieve end-to-end connectivity satisfying JCS Command, Control, Communications, and Intelligence (C3I) requirements. SATCOM assets also support the President, JCS, CINCs, Military Departments, Department of State, and other government Departments and Agencies. This project provides centralized funding for advanced systems engineering, analysis, research, development, test, and evaluation of new and emerging technologies, optimizing terminal performance and interoperability on the digitized battlefield. This system supports the Legacy transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 2074 Conducted various developmental efforts or analysis to provide enhanced terminal capability
- 1632 Continued Battlefield Digitization architecture efforts for 4ID and III Corps/IBCT
- 1200 Advanced SATCOM architecture development and System Engineering Support (Advanced EHF (AEHF) and Wideband Gapfiller System (WGS))
- 964 AEHF waveform development
- 211 Software modifications to support SATCOM-On-The-Move (SOTM) tactical internet interface

Total 6081

FY 2001 Planned Program

- 2147 Conduct various developmental efforts or analysis to provide enhanced terminal capability (EHF, SHF, UHF and Commercial Bands)
- 1624 Continue Battlefield Digitization architecture efforts for III Corps/IBCT
- 1541 Advanced SATCOM architecture development and System Engineering Support (AEHF, AWB and ANS/MUOS)
- 3300 Initiate Ka Band development for Army Tactical terminals

FY 2001 Planned Program (Continued)

- 263 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)

Total 8875

FY 2002 Planned Program

- 1900 Conduct various developmental efforts or analysis to provide enhanced terminal capability (EHF, SHF, UHF, and Commercial Bands)
- 641 Continue Battlefield Digitization Architecture efforts for Army Digitization and Transformation
- 1415 Continue development, integration and fielding of interim SATCOM networking management tools and support the AEHF Management Planning Element (AMPE) development process.
- 2170 Advanced SATCOM architecture development and System Engineering Support (AEHF, AWB and ANS/MUOS)
- 5300 Continue Ka Band development for Army Tactical terminals
- 4000 Test Support

Total 15426

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Other Procurement Army 2 - SSN: K77200	6519	16945	12640	0	0	0	0	0	0	0
Other Procurement Army 2 - SSN: BB8417	498	1465	2492	0	0	0	0	0	0	0
Other Procurement Army 2 - SSN BA9350	15340	27743	16951	0	0	0	0	0	0	0
Other Procurement Army 2 - SSN BC4002	924	31561	21704	0	0	0	0	0	0	0

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

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Comm-On-The-Move (COTM) UHF Terminal Integration with Tactical Internet	1-4Q	1-4Q	1-2Q	0	0	0	0	0
Intersegment Launch Verification (Flight 4)		2Q		0	0	0	0	0
Intersegment Post Launch Verification (Flight 5)			2Q	0	0	0	0	0
Intersegment Post Launch Verification (Flight 6)				0	0	0	0	0
Conduct Advanced EHF and Wideband System Engineering Support	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Conduct Integration of SATCOM Systems into Digitized Architecture	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Conduct System Testing			3-4Q	0	0	0	0	0
Initiate design of Ka Band into Army Tactical terminals		3Q		0	0	0	0	0
Initiate Ka Band Testing/Prototype				0	0	0	0	0
Initiate Ka Band Prototype Manufacturing				0	0	0	0	0
ABCS System Engineering Efforts Related to MILSATCOM	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Development/Analysis for Enhanced Terminal Capability/Interoperability (EHF/SHF/UHF-Commercial Band	1-4Q	1-4Q	1-4Q	0	0	0	0	0
Development, Integration, Milstar Communications Planning Tool - Integrated (MCPT-I), ACMS and AMPE	1-4Q	1-4Q	1-4Q	0	0	0	0	0

D. Schedule Profile (continued)

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

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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 . Terminal Upgrades	Various	Various	1524	0		0		0	0	0	0	0
b . Ka Band Development	SS/CP	Raytheon Marlborough, MA	0	3300	3Q	5300	2Q	0	0	0	0	0
Subtotal:			1524	3300		5300		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering (In-House)	MIPR	Various	3034	1075	2Q	2839	2Q	0	0	0	0	0
b . Engineering (Contract)	Various	Various	2810	1235	2Q	1100		0	0	0	0	0
c . System Architecture & Analysis	Various	Mitre	0	0		600		0	0	0	0	0
Subtotal:			5844	2310		4539		0		0	0	0

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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	Lincoln Labs, Lexington, MA	2050	619	2Q	0		0	0	0	0	0
b . Test Support	Various	Various	1321	573		4600		0	0	0	0	0
Subtotal:			3371	1192		4600		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 . Advanced EHF & Architecture	MIPR	Lincoln Labs Lexington, MA	3393	1810	2Q	987	2Q	0	0	0	0	0
b . SBIR/STTR			0	263		0		0	0	0	0	0
Subtotal:			3393	2073		987		0		0	0	0
Project Total Cost:			14132	8875		15426		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0303150A - Army Global Command & Control System**	**C86**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C86 ARMY GLOBAL C2 SYSTEM	10904	14101	13501	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

Project DC86 - Army Global Command and Control System (AGCCS): This project is the Army component system that directly supports the implementation of the Joint Global Command and Control System (GCCS). AGCCS provides automated command and control tools for Army Strategic and Theater Commanders to enhance warfighter capabilities throughout the spectrum of conflict during joint and combined operations in support of the National Command Authority (NCA). This support is being accomplished through the Army's Global Command and Control System (AGCCS), which is a selection of the Army's best-of-breed command and control functionality. The AGCCS-developed software systems will dramatically improve the Army's ability to analyze courses of action; develop and manage Army Forces supporting joint war plans; and ensure that the Army portions of war plans are feasible. The AGCCS will provide a layered architecture and functional best-of-breed software applications to develop a totally integrated component of the joint GCCS. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 2011 Perform Systems Engineering
- 5279 Continue Prime Mission Software Development
- 650 Perform Data Engineering
- 1349 Conduct Systems Test and Evaluation
- 1615 Perform Program Support and Management Efforts

Total 10904

FY 2001 Planned Program

- 1911 Perform Systems Engineering
- 7179 Continue Prime Mission Software Development
- 839 Perform Data Engineering
- 998 Conduct Systems Test and Evaluation
- 1800 Perform Program Support and Management Efforts
- 1054 ABCS System Engineering and Integration Efforts
- 320 SBIR/STTR

Total 14101

FY 2002 Planned Program

- 2232 Perform Systems Engineering
- 7179 Continue Prime Mission Software Development
- 770 Perform Data Engineering
- 1022 Conduct Systems Test and Evaluation
- 2298 Perform Program Support and Management Efforts

Total 13501

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0303150A - Army Global Command & Control System**	**C86**

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	11542	14234	14070	0
Appropriated Value	11606	0	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	-100	0	0
b. SBIR / STTR	-227	0	0	0
c. Omnibus or Other Above Threshold Reduction	-35	0	0	0
d. Below Threshold Reprogramming	-411	0	0	0
e. Rescissions	-29	-33	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	-569	0
Current Budget Submit (FY 2002/2003 PB)	10904	14101	13501	0

C. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
BA8250 Army Global Cmd & Cont Sys (AGCCS)	13207	10184	8622	0	0	0	0	0	0	0

D. Acquisition Strategy: The AGCCS software integration and development effort is a multi-year incrementally funded spiral development effort. Spiral development will ensure interoperability with Joint and ABCS Systems as well as continuing development of objective Operation Requirements Document (ORD) capabilities. A hybrid (Cost-Plus-Award Fee and Firm-Fixed- Price) contract was awarded to Lockheed Martin Corporation (LMC) in December 1994. The contract consists of software development, software maintenance and relocation/de-installation of the test facility upon completion of the contract. PM STCCS established an Integrated Process Team (IPT) to review the status of software integration and development functional deliveries. The results of the IPT were instituted providing the users of AGCCS, mission software deliveries identified as Capability Package 1 (CP1), Deliveries one through four, followed by required functional enhancements. CP1, which was delivered in second quarter FY 1996 and designated IOC in fourth quarter FY 1996, provided the replacement for the AWIS strategic mission support applications/software and the Army's GCCS interface to selected HQDA, and FORSCOM sites. Deliveries one through four, provide the integration and migration of selected STACCS, TACCIMS, and CSSCS Echelons Above Corps (EAC) mission support applications/software into a common baseline. Deliveries one through four have been/are being delivered to ten Army-managed sites located throughout the world. A common hardware platform will be used within the Army to implement AGCCS/GCCS. This will include products from the Army's Common Hardware/Software-2 (CHS-2) contract, which consists of Commercial Off-the-Shelf (COTS) hardware and software. The COTS hardware and software will provide computers with expanded processing, storage and communications capability, as well as office-automation and management software.

E. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Incremental Enhancements Start	2Q			0	0	0	0	0
ABCS/FDD Interoperability	3-4Q	1-4Q	1-4Q	0	0	0	0	0
AGCCS Delivery 3 Complete	4Q			0	0	0	0	0
AGCCS Delivery 4		3-4Q	1-3Q	0	0	0	0	0
Incremental Enhancements Complete		4Q		0	0	0	0	0
ORD Objective Capabilities Start		3Q		0	0	0	0	0
ORD Objective Capabilities Continue		4Q	1-4Q	0	0	0	0	0
AGCCS Delivery 4 Complete			3Q	0	0	0	0	0
AGCCS Delivery 5			4Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303150A - Army Global Command & Control System

PROJECT
C86

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	HYBRID	Lockheed Martin Corp, Springfield, VA	62668	9509	1Q	10160	1Q	0	0	0	0	0
b . COE Support	MIPR	Various	1766	0		0		0	0	0	0	0
c . GFE	MIPR	Various	1464	0		0		0	0	0	0	0
d . ABCS System Engineering & Integration Efforts	MIPR	TBD	0	1054	2Q	0		0	0	0	0	0
e . SBIR/STTR			0	320		0		0	0	0	0	0
Subtotal:			65898	10883		10160		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303150A - Army Global Command & Control System

PROJECT
C86

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	Various	2121	595	1Q	625	1Q	0	0	0	0	0
b . FCBS/CSC	MIPR/Del Ord	Various	2389	0		0		0	0	0	0	0
c . SAIC	MIPR/Del Ord	Various	2391	0		0		0	0	0	0	0
d . INRI	MIPR	Various	0	200	1Q	206	1Q	0	0	0	0	0
Subtotal:			6901	795		831		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Government	MIPR	Various	2155	0		0		0	0	0	0	0
b . EPG	MIPR	Various	786	0		0		0	0	0	0	0
c . ATEC	MIPR	Various	402	100	1Q	100	1Q	0	0	0	0	0
Subtotal:			3343	100		100		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0303150A - Army Global Command & Control System

PROJECT
C86

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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 ATCCS	N/A	Various	17919	2323	1Q	2410	1Q	0	0	0	0	0
Subtotal:			17919	2323		2410		0		0	0	0
Project Total Cost:			94061	14101		13501		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0305114A - Traffic Control/Approach/Landing System (JPALS)**	**711**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
711 JPALS	0	775	785	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The Joint Precision Approach Landing System (JPALS) is a precision approach and landing system providing joint operational capability for U.S. forces assigned to conventional and special operations missions including those operating from fixed base, ship, tactical and austere environments. This effort evaluates alternative approaches for incorporating JPALS into Army aircraft while considering aircraft environment, electrical power, system space, weight, antenna placement and electromagnetic compatibility without nullifying low observable capability requirements. Project in this Program Element supports research efforts in the Architecture and Requirements Definition phase of the modified acquisition life cycle approved by the Defense Acquisition Executive in September of 1998. JPALS supports the Legacy-to-Objective transition path of the Transformation Campaign Plan.

FY 2001 Planned Program

- 752 Provide system engineering, logistics and technical documentation for JPALS Development effort in preparation for JPALS systems currently under development by the Air Force for use in Army aircraft.
- 23 Small Business Innovative Research (SBIR)/Small Business Technology Transfer Program (STTR)

Total 775

FY 2002 Planned Program

- 785 Continue to provide system engineering, logistics and technical documentation for JPALS Development effort.

Total 785

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0305114A - Traffic Control/Approach/Landing System (JPALS)**	**711**

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	0	783	781	0
Appropriated Value	0	783	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	0	-8	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	4	0
Current Budget Submit (FY 2002/2003 PB)	0	775	785	0

C. Other Program Funding Summary: JPALS is a joint program with the Air Force (lead service) funding FY99/00: PE 0603860F, Project 644652.

D. Acquisition Strategy: The acquisition strategy is to support the joint research and development effort leading to production of a joint system.

E. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Supports JPALS efforts		1Q-4Q	1Q-4Q	0	0	0	0	0

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

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0305204A - Tactical Unmanned Aerial Vehicles

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		45087	34110	38210	0	0	0	0	0	0	0
114	TACTICAL UNMANNED AERIAL VEHICLE (TUAV) (JMIP)	45087	31846	19503	0	0	0	0	0	0	0
11A	ADVANCED PAYLOAD DEVELOPMENT & SUPPORT	0	0	16400	0	0	0	0	0	0	0
123	JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (JMIP)	0	2264	2307	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The Tactical Unmanned Aerial Vehicle (TUAV), provides Army brigades/battalions with dedicated day/night, reconnaissance, surveillance and target acquisition (RSTA) and intelligence. TUAV provides the tactical warfighting commander with critical battlefield information in the rapid cycle time required for success at the tactical level. The TUAV system consists of multiple air vehicles, each configured with an electro-optic (EO)/infrared (IR) sensor payload, ground control equipment, including communications equipment, launch and recovery equipment, remote video terminal, and High Mobility Multipurpose Wheeled Vehicles with trailer(s). Each system is supported by a maintenance section-multifunctional as well as a divisional Mobile Maintenance Facility capable of supporting up to four TUAV systems. This TUAV development effort provides systems for use in developmental test, Initial Operational Test and Evaluation and will provide systems to brigades as quickly as possible. Tactical Control System (TCS) software will be integrated with the TUAV system when available and validated. This effort also provides for development of advanced sensor payloads, including Synthetic Aperture Radar/Moving Target Indicator (SAR/MTI) for near all-weather capability and advanced EO/IR for improved detection and recognition.

The Joint Technology Center/System Integration Lab (JTC/SIL) is a joint integration center that develops simulations of tactical UAVs and strategic reconnaissance and imagery. It also utilizes the Modernized Imagery Exploitation System (MIES), the Enhanced Tactical Radar Correlator (ETRAC), and a variety of C4I systems and interfaces, namely the TCS. The Multiple Unified Simulation Environment (MUSE) system provides for the development of real-time, interoperable hardware and operator in-the-loop simulations of multiple intelligence systems that may be integrated with larger simulations in support of Service exercises. MUSE development provides a realistic operational environment that supports a wide range of information efforts.

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

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

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0305204A - Tactical Unmanned Aerial Vehicles

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	43087	29427	14181	0
Appropriated Value	43866	34427		
Adjustments to Appropriated Value	0	0		
a. Congressional General Reductions	0	0		
b. SBIR / STTR	0	0		
c. Omnibus or Other Above Threshold Reduction	-179	0		
d. Below Threshold Reprogramming	2000	0		
e. Rescissions	-600	-317		
Adjustments to Budget Years Since FY2001 PB	0	0	24029	
Current Budget Submit (FY 2002/2003 PB)	45087	34110	38210	0

Change Summary Explanation:
FY00 funds directed to higher Army priority
FY01 funding was increased (+5000) to fully fund the TUAV planned program in accordance with the Army Cost Position, and to initiate Advanced Payload Development efforts.
FY02 and FY03 funding was increased to fund TUAV advanced payload development and objective capability development efforts. (FY02+24029),(FY03+21708).

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0305204A - Tactical Unmanned Aerial Vehicles**	**114**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
114	TACTICAL UNMANNED AERIAL VEHICLE (TUAV) (JMIP)	45087	31846	19503	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The Tactical Unmanned Aerial Vehicle (TUAV), provides Army brigades/battalions with dedicated day/night, reconnaissance, surveillance and target acquisition (RSTA) and intelligence. TUAV provides the tactical warfighting commander with critical battlefield information in the rapid cycle time required for success at the tactical level. The TUAV system consists of multiple air vehicles, each configured with an electro-optic (EO)/infrared (IR) sensor payload, ground control equipment, including communications equipment, launch and recovery equipment, remote video terminal, and High Mobility Multipurpose Wheeled Vehicles with trailer(s). Each system is supported by a maintenance section-multifunctional as well as a divisional Mobile Maintenance Facility capable of supporting up to four TUAV systems. This TUAV development effort provides systems for use in developmental test, Initial Operational Test and Evaluation and will provide systems to brigades as quickly as possible. Tactical Control System (TCS) software will be integrated with the TUAV system when available and validated. This effort also provides for development of advanced sensor payloads, including Synthetic Aperture Radar/Moving Target Indicator (SAR/MTI) for near all-weather capability and advanced EO/IR for improved detection and recognition.

FY 2000 Accomplishments

- 21443 Tactical UAV LRIP I Program
- 2036 Government Furnished Equipment for 4 LRIP TUAV systems for development and IOT&E
- 3727 Program Management Support
- 8550 Risk Reduction Testing/ST&E/IOT&E Preparation
- 2648 Advanced Payload Development / Modification / Integration
- 92 Tactical Common Data Link Integration
- 446 Objective Capability Assessment for Block Upgrades
- 1500 Incorporated baseline TUAV simulation into the MUSE to support TUAV TUCS embedded trainer and IMS trainer/Transitioned MUSE visualization component hardware and software to PC based platform
- 2320 Complete TUAV Ground Control Station Architecture

FY 2000 Accomplishments (Continued)

- 2075 Institutional Mission Simulator (IMS)
- 250 Tactical Control System

Total 45087

FY 2001 Planned Program

- 16786 Complete Tactical UAV Low Rate Initial Production (LRIP I) Program
- 3524 Program Management Support
- 4559 Risk Reduction Testing/Development Testing
- 1980 C4I Testing
- 1000 OPTEMPO Demonstration
- 810 Data Acquisition System (DAS) Instrumentation Van
- 750 IOT&E Preparation and Support/Travel
- 1200 Advanced Payload Development / Modification / Integration
- 500 Institutional Mission Simulator (IMS)
- 250 Tactical Control System
- 411 Objective Capability Development

Total 31770

FY 2002 Planned Program

- 2995 Program Management Support
- 10158 Objective Capability Development / Modification / Integration
- 1000 Update C4I Interfaces (EPLRS, FBCB2, A2C2, etc.)
- 4050 Objective Capability Testing / Limited User Testing
- 1300 30 Level Maintenance Training

Total 19503

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
TUAV Procurement (BA0330)	800	37442	84300	0	0	0	0	0	0	0

Note: Other related Navy dollars fund the development of TCS software for integration into the TUAV under this project.

C. Acquisition Strategy: A System Capability Demonstration (SCD) was conducted with four contractors. The results from the SCD in conjunction with proposal evaluations resulted in the competitive down select of a Best Value TUAV system. A successful Milestone II ASARC was conducted on 21 December 1999, and a TUAV LRIP contract was awarded to the AAI Corporation on 27 December 1999. A successful LRIP program will lead to a MS III decision and award of full rate production. In addition, PEO IEW&S has accelerated fielding of the TUAV system using a second LRIP in FY 01 and increasing the production rate in following years. Continued development of the selected TUAV system will be accomplished through a series of upgrades to incorporate improvements such as extended range and endurance, increased payload weight space and power capability, TCS, TCDL and advanced sensor payloads as they mature and are operationally proven.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Conduct System Capabilities Demonstration	1Q			0	0	0	0	0
Milestone II / LRIP Decision & LRIP Award	1Q			0	0	0	0	0
First LRIP System Delivery		1Q		0	0	0	0	0
Deliver LRIP Systems to Training Base		2Q		0	0	0	0	0
OPTEMPO Demonstration		2Q		0	0	0	0	0
Special In-Process Review/LRIP Decision		2Q		0	0	0	0	0
IOT&E Preparation and IOT&E	4Q	1-3Q		0	0	0	0	0
Field IOT&E LRIP system to IOT&E User		4Q		0	0	0	0	0
Milestone III / Production Decision		4Q		0	0	0	0	0
Award Full Rate Production			1Q	0	0	0	0	0
TUAV First Unit Equipped (FUE)		4Q		0	0	0	0	0
Objective Capability Test/Limited User Test			4Q	0	0	0	0	0
Payload Development/Improvements	1-4Q	1-4Q	1-4Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0305204A - Tactical Unmanned Aerial Vehicles

PROJECT
114

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TUAV LRIP Program	Comp / FPIF	AAI Corporation	38544	16786	1Q	0		0	0	0	0	0
b . Government Furnished Equipment	MIPR	USAIC/RTTC/USASC BSC/CECOM/PM ATCCS/PM TRCS	2036	0		0		0	0	0	0	0
c . Advanced Payload Development/Modification/ Integration	MIPR	PM TESAR	2918	1200		0	1Q	0	0	0	0	0
d . Digital Data Link	CPFF	TRW/TBD	342	0		0		0	0	0	0	0
e . Objective Capability Assessment/Development	Comp/FPIF	AAI Corporation	500	411	1Q	10158	1Q	0	0	0	0	0
f . SIL/MUSE	MIPR	Sys Integration Lab, AMCOM Redstone	1500	0		0		0	0	0	0	0
g . TUAV Ground Control Station Architecture	MIPR	Sys Integration Lab, AMCOM Redstone	7275	0		0		0	0	0	0	0
h . Institutional Mission Simulator	MIPR	Sys Integration Lab, AMCOM Redstone	2410	500	1Q	0		0	0	0	0	0
i . Tactical Control System	PWD	AMCOM RDEC Redstone	450	250	1Q	0		0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0305204A - Tactical Unmanned Aerial Vehicles

PROJECT
114

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 . C4I Interfaces (EPLRS, FBCB2, A2C2	MIPR	Sys Integration Lab, AMCOM Redstone	0	0		1000	1Q	0	0	0	0	0
k . TUAV Source Selection/System Capabilities Demo	Various Methods/Type	Various AMCOM Contractors	7200	0		0		0	0	0	0	0
l . Army Apache/UAV Interoperability Demonstration	MIPR	AMCOM RDEC Redstone	350	0		0		0	0	0	0	0
m . Outrider Advance Concept Technology Demonstration Bridge Contract	SS/FPIF	Alliant Techsystems, Hopkins, MN	10600	0		0		0	0	0	0	0
n . Hunter UAV non-recurring support	SS/FPIF	TRW, Sierra Vista, AZ	4140	0		0		0	0	0	0	0
o . Improved EO/IR Payload Modification/Integration Assessment for Demo on Hunter	Comp/Opt	AMCOM RDEC Redstone	200	0		0		0	0	0	0	0
p . 30 Level Maintenance Training	Comp/FPIF	AAI Corporation	0	0		1300	1Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0305204A - Tactical Unmanned Aerial Vehicles

PROJECT
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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:			78465	19147		12458		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 . Contractor Engineering Support	CPFF	Various AMCOM Contractor/Locations	2420	1500	1Q	1095	1Q	0	0	0	0	0
b . Government Engineering Support	PWD	AMCOM Redstone	2026	1024	1Q	900	1Q	0	0	0	0	0
Subtotal:			4446	2524		1995		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0305204A - Tactical Unmanned Aerial Vehicles

PROJECT
114

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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 Testing/ST&E	MIPR	ATEC/PM/Various AMCOM Contractors	8972	4559	1Q	0		0	0	0	0	0
b . Objective Capability Testing / Limited User Testing	MIPR	AAI/ATEC/PM/Various AMCOM Contractors	0	0		4050	1Q	0	0	0	0	0
c . C4I Testing	MIPR	AAI/Various AMCOM Contractors	0	1980	1Q	0		0	0	0	0	0
d . OPTEMPO Demo	MIPR	ATEC/PM	0	1000	1Q	0		0	0	0	0	0
e . Data Aquisition System (DAS) Instrumentation Van	MIPR	Redstone Technical Test Center/PM	0	810	1Q	0		0	0	0	0	0
f . IOT&E Preparation and Support/Travel	MIPR	ATEC/PM/OGA Ft. Hood, TX	0	750	1Q	0		0	0	0	0	0
Subtotal:			8972	9099		4050		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0305204A - Tactical Unmanned Aerial Vehicles

PROJECT
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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 Mgt Personnel		PM UAV Redstone	3393	1076	1Q	1000	1Q	0	0	0	0	0
Subtotal:			3393	1076		1000		0		0	0	0
Project Total Cost:			95276	31846		19503		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0305204A - Tactical Unmanned Aerial Vehicles**	**11A**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
11A	ADVANCED PAYLOAD DEVELOPMENT & SUPPORT	0	0	16400	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The Tactical Unmanned Aerial Vehicle (TUAV), provides Army brigades/battalions with dedicated day/night, reconnaissance, surveillance and target acquisition (RSTA) and intelligence. TUAV provides the tactical warfighting commander with critical battlefield information in the rapid cycle time required for success at the tactical level. Near term efforts will include the transition of current mature technologies into an operational capability, while maturing existing technology initiatives to increase the force multiplying effects of the TUAV. To support these efforts, the funds will be used to establish the infrastructure to evaluate the maturity of the technology efforts and transition an employable TUAV capability. Specifics include entering development and fielding of the TSM UAV's top 5 priorities. These include SAR/MTI, Communication Relay Payload, Laser Designation, and Objective EO/IR. To support these efforts, a modeling and simulation capability/process is being developed to assess the operational benefit of these advanced technologies. Future initiatives will be focused on the transition of technologies that will directly support the Army's objective force. These include the development and fielding of countermine, counter camouflage, NBC and other specialty payloads as appropriate.

FY 2002 Planned Program

- 2100 Program Management Support
- 8700 SAR/MTI Deveolpment/Modifications/Integration
- 1600 Advanced Payload Modeling and Simulation
- 2500 Objective EO/IR Operational Capability Assessment
- 700 Laser Designator feasibility assessment
- 200 Communication Relay Payload A-Kit Development
- 600 Payload Test Bed to support DT/OT of advanced development integration and modification

Total 16400

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

Procurement funding in support of these RDTE efforts are now planned as part of the TUAV Procurement funding line (BA0330). Efforts have also begun to establish a separate funding line for the Advanced Payloads.

C. Acquisition Strategy: 1. SAR/MTI will enter MS-B during FY-02 and award an SDD contract for the Design/Modification and Integration into the TUAV. Upon successful DT and MS-C decision, LRIP option will be exercised for test articles to support a Limited User Test (LUT) in FY-03. After a successful LUT, Full Rate Production will begin with deliveries in FY-05.

2. Multifunctional EO/IR payload will be pursued for the TUAV. In FY-02, will enter at MS-A Component Advanced Development and during this phase will codify requirements, demonstrate the objective EO/IR capability, and conduct feasibiity assessments for Laser designator/Illuminator and countermine capabilities. In FY-03 award an SDD contract for the Design/Modification and Integration into the TUAV. Upon successful DT and MS-C decision, LRIP option will be exercised for articles to support deliveries in FY-05. Incorporate increased capabilities through a block upgrade approach (Laser, Countermine,etc) as the technology matures and is operational proven.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
SAR/MTI				0	0	0	0	0
MS B/ SDD Decision and Award			1Q	0	0	0	0	0
DT Test Article Deliveries and Testing				0	0	0	0	0
MS C/ LRIP Option Exercise				0	0	0	0	0
Delivery of LRIP Systems and LUT				0	0	0	0	0
Award FRP Contract				0	0	0	0	0
FRP Deliveries to TUAV				0	0	0	0	0
EO/IR				0	0	0	0	0
MS A			1Q	0	0	0	0	0
Conduct Operational Capabilities Assessment			1-3Q	0	0	0	0	0
Laser Designator Technical Feasibility Study			1-2Q	0	0	0	0	0
MS B				0	0	0	0	0
Contract Award for SDD				0	0	0	0	0

D. Schedule Profile (continued)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete DT and LUT on Shadow 200				0	0	0	0	0
MS C and exercise LRIP Option				0	0	0	0	0
LRIP Deliveries				0	0	0	0	0
FRP Contract Award				0	0	0	0	0
FRP Deliveries				0	0	0	0	0

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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 . SAR/MTI Program	SS/CPIF	Northrop-Grumman Baltimore, MD	0	0	1Q	8700		0	0	0	0	0
b . Advanced Payload Modeling and Simulation	SS/FFP	Teledyne Brown, Huntsville, AL	0	0	1Q	800		0	0	0	0	0
c . Advanced Payload Modeling and Simulation	MIPR	TRAC White Sands Missle Range	0	0	1Q	800		0	0	0	0	0
d . Objective EO/IR Operational Capabilities Assessment	PWD	CECOM NVESD Ft. Monmouth NJ	0	0	2Q	2500		0	0	0	0	0
e . Laser Designator Feasibility Assessment	Comp/CPFF	TBD	0	0	2Q	700		0	0	0	0	0
f . CRP A-Kit Development	MIPR	PM TUAV	0	0	2Q	200		0	0	0	0	0
g . Payload Test Bed	PWD	CECOM I2WD, Ft. Monmouth NJ	0	0	2Q	600		0	0	0	0	0
Subtotal:			0	0		14300		0		0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

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0305204A - Tactical Unmanned Aerial Vehicles

PROJECT
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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 . Engineering Support	CPFF/PWD	Various CECOM Contractors and RDEC Support	0	0	1Q	1900		0	0	0	0	0
Subtotal:			0	0		1900		0		0	0	0

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

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BUDGET ACTIVITY
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PROJECT
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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 Mgt Personnel		PM TESAR, Ft. Monmouth, NJ	0	0	1Q	200		0	0	0	0	0
Subtotal:			0	0		200		0		0	0	0
Project Total Cost:			0	0		16400		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0305204A - Tactical Unmanned Aerial Vehicles**	**123**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
123	JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (JMIP)	0	2264	2307	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The Joint Technology Center/System Integration Laboratory (JTC/SIL) is a joint facility that develops, integrates and supports the enhancement of its Multiple Unified Simulation Environment (MUSE) capability for Army systems and operational concepts, primarily for the Tactical UAV Project Office. The JTC/SIL conducts prototype hardware and software development (TUAV Tactical Unmanned Control System (TUCS), TUAV Institutional Mission Simulation (IMS) Trainer, TUAV C4I module), modeling and simulation support. The MUSE provides for the development of real-time, operator in-the-loop simulations that are capable of tactical Hardware-In-the-Loop (HWIL) interoperability for multiple intelligence systems that may be integrated with larger simulations in support of Service training and exercises. MUSE development provides a realistic operational environment that supports a wide range of C4I applications. This project funds the management of the JTC/SIL and MUSE enhancements. This system supports the Legacy to Objective transition path of the Transformatoin Campaign Plan (TCP).

FY 2000 Accomplishments

Program funded in project D114.

FY 2001 Planned Program

- 150 Initiate Moving Target Indicator/Fixed Target Indicator (MTI/FTI) Sensor Simulation Development/Upgrade SAR Simulation
- 175 MUSE Remote Support Capability
- 50 Provide Direct JSTARS Common Ground Station (CGS) Interface
- 150 Develop MUSE Fixed Target Damage State Visualization
- 50 Technical Suport of MUSE Integration with IEWTPT
- 195 Upgrade HLA Certification and DITSCAP
- 125 MUSE Hardware Consolidation into Single PC-Based Platform

FY 2001 Planned Program (Continued)

- 100 Initiate MUSE TUAV Flight Performance Model Verification and Validation Process
- 120 Provide MUSE Configuration Management and Help Desk Services
- 830 MUSE Equipment
- 319 JTC/SIL Management

Total 2264

FY 2002 Planned Program

- 150 Develop and integrate Tactical Common Data Link into MUSE in support TUAV ORD
- 240 Develop and upgrade Terrain and Target databases
- 175 MUSE Remote Support Capability
- 120 Upgrade HLA Certification and DITSCAP
- 50 Technical support of MUSE integration with IEWTPT
- 190 MUSE TUAV Flight Performance Model Verification and Validation Process
- 300 MUSE Configuration Management and Help Desk Services
- 785 MUSE Equipment
- 300 JTC/SIL Management
- -3 Due to DA realignment and technical changes to the database, the above effort shows accomplishment amount for $2.307M, however, the amount was for $2.310M

Total 2307

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

Other Air Force and Navy funds are provided for the development of JTC/SIL MUSE.

C. Acquisition Strategy: Continued MUSE development will be accomplished through a combination of Government in-house functional directorate support and contractor support using a variety of existing RDEC contract vehicles and the OMNIBUS 2000 contract.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
JTC/SIL MUSE Enhancement and Management		2-4Q	1-4Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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PROJECT
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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 . Initiate MTI/FTI Sensor Sim Develop/Upgrade SAR	SS/CPFF	Draper Laboratory/Cambridge, MA	0	150	3Q	0		0	0	0	0	0
b . MUSE Remote Support Capability	SS/CPFF	ITC/Arlington, VA	0	175	3Q	175	1Q	0	0	0	0	0
c . Develop MUSE Fixed Target Damage Site Visualization	SS/CPFF	ITC/Arlington, VA	0	150	3Q	0		0	0	0	0	0
d . Upgrade HLA Certification for DITSCAP	SS/CPFF	ITC/Arlington, VA	0	195	3Q	120	1Q	0	0	0	0	0
e . MUSE Equipment	C/FFP	TBD	0	673	3Q	627	1Q	0	0	0	0	0
f . MUSE Hardware Consolidation into Single PC-Based Platform	SS/CPFF	ITC/Arlington, VA	0	125	3Q	0		0	0	0	0	0
g . Develop & Integrate TCDL into MUSE in Support of TUAV ORD	SS/CPFF	ITC/Arlington	0	0		150	1Q	0	0	0	0	0
h . Develop & Upgrade Terrain & Target Databases	SS/CPFF	ITC/Arlington, VA / Quality Research/HSV, AL / SAIC/HSV, AL / Draper Laboratory	0	0		240	1Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0305204A - Tactical Unmanned Aerial Vehicles

PROJECT
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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
i . Incorporate New Technology Sensors & Platforms into MUSE	SS/CPFF	ITC/Arlington, VA	0	0		0		0	0	0	0	0
j . Integrate Weapon Employment Capabilities into MUSE	C/FFP	TBD	0	0		0		0	0	0	0	0
k . Evaluate and Integrate New Visualization Technologies into MUSE	C/FFP	TBD	0	0		0		0	0	0	0	0
l . Due to DA realignment&technical changes to the database the following figures reflect the difference			0	-1	1Q	-3	1Q	0	0	0	0	0
Subtotal:			0	1467		1309		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

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0305204A - Tactical Unmanned Aerial Vehicles

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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 . Provide Direct JSTARS CGS Interface	SS/CPFF	ITC/Arlington, VA	0	50	3Q	0		0	0	0	0	0
b . Technical Support of MUSE Integration with IEWTPT	C/CPFF	SAIC/Huntsville, AL	0	50	3Q	50	1Q	0	0	0	0	0
c . Initiate MUSE TUAV Flight Performance Model V&V Process	C/CPFF	SAIC/Huntsville, AL	0	100	3Q	190	1Q	0	0	0	0	0
d . Provide MUSE Configuration Mgt and Help Desk Services	C/CPFF	SAIC/Huntsville, AL / ITC, Arlington, VA	0	120	3Q	300	1Q	0	0	0	0	0
e . JTC/SIL Management	C/CPFF	TBD	0	93	3Q	60	1Q	0	0	0	0	0
f . MUSE Equipment	C/CPFF	SAIC/Huntsville, AL	0	158	3Q	158	1Q	0	0	0	0	0
g . Incorporate New Technology Sensors & Platforms into MUSE	C/CPFF	SAIC/Huntsville, AL	0	0		0		0	0	0	0	0
Subtotal:			0	571		758		0		0	0	0

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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 . TBD	TBD	TBD	0	0		0		0	0	0	0	0
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . JTC/SIL Management Personnel		JTC/SIL/Redstone Arsenal, AL	0	226	2-4Q	240	1-4Q	0	0	0	0	0
Subtotal:			0	226		240		0		0	0	0
Project Total Cost:			0	2264		2307		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0305206A - Airborne Reconnaissance Advanced Development**	**K98**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
K98	MASINT SENSOR INTEGRATION (JMIP)	4895	4852	6862	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This project continues development of advanced tactical reconnaissance and surveillance sensor technologies that were developed from the Defense Airborne Reconnaissance Office and develops technology for the on-board fusion of multidiscipline intelligence sensors, i.e. Signals Intelligence (SIGINT), Moving Target Indicator/Synthetic Aperture (MTI/SAR) Radar, Measure and Signature Intelligence (MASINT). Hyperspectral, multi-spectral, interferometric synthetic aperture radar sensors, advanced target and image exploitation software will be developed for imagery intelligence (IMINT) and measurement and signature intelligence (MASINT) applications. The Hyperspectral Longwave Imager for the Tactical Environment (HyLITE) effort is executed by U.S. Army CECOM, Night Vision and Electronic Sensors Directorate. HyLITE develops the next generation airborne day/night hyperspectral reconnaissance sensor for the detection and identification of camouflaged and concealed targets in all terrain environments. The Signals Warfare Project Office will leverage and continue development of the MASINT/IMINT technologies for Aerial Common Sensor (ACS). The Interferometric Synthetic Aperture Radar (IFSAR) Program is executed out of the Joint Precision Strike Demonstration Office (JPSD PO). IFSAR provides the capability to rapidly generate three-dimensional (3-D) high resolution Digital Terrain Elevation Data (DTED III-V). This data will be used in the generation of high-resolution digital terrain databases to support crisis response and force projection operations within the timelines required by the joint force commander. The IFSAR development supports the Rapid Terrain Visualization (RTV) Advanced Concept Technology Demonstration (ACTD). Future efforts will be directed toward the development of advanced multi-mode Electroptic/Infrared (EO/IR), multi-mode MTI/SAR radar, foliage penetration radar, multi-spectral/hyperspectral imageries (MSI/HSI), MASINT on-board fusion and registration, and cueing of the EO/IR/SAR/HSI imaging sensor. FY02 funds complete integration of the HyLITE System into the testbed, data collection demonstrations and analysis. FY02 also funds the development of multi-mode MTI/SAR technologies and MSI/HSI technologies. FY03 continues the development MTI/SAR and MSI/HSI technologies and supports integration of these technologies for system demonstrations.
This system supports the Legacy transition path of the Transformation Campaign Path. (TCP)

FY 2000 Accomplishments

- 3963 -Conducted Critical Design Review (CDR) of the Hyperspectral Longwave Imager for the Tactical Environment (HyLITE) sensor.
  -Participated in joint spectral data collection and exercises of various terrain and environmental backgrounds for algorithm development (day only).
  -Developed and integrated multiple algorithm exploitation and processing techniques for advanced spectral detection and recognition (day only).

FY 2000 Accomplishments (Continued)

- 932 -Integrated Interferometric Synthetic Aperture Radar (IFSAR) sensor system on board a de-Havilland-7 aircraft.
  -Demonstrated near real time Digital Terrain Elevation Data (DTED) Level III-V capability.
  -Demonstrated very fine resolution geographically accurate IFSAR imagery for 3-D earth-centered targeting.

Total 4895

FY 2001 Planned Program

- 1893 -Complete sensor development and conduct integration of the HyLITE system
  -Conduct integration of HyLITE with the NVESD testbed aircraft.
  -Conduct integration of the HyLITE with the hyperspectral processor.
  -Conduct spectral algorithm development for day/night system.
- 2959 Collect IFSAR data and develop/process high resolution data sets.
  Complete evaluation of military utility of IFSAR sensor, data, Rapid Terrain Visualization (RTV) process and products with XVIII ABN and III Corp.

Total 4852

FY 2002 Planned Program

- 1959 -Complete integration of HyLITE system and installation with the algorithm processor and the NVESD testbed aircraft.
  -Conduct day and night data collection and real time demonstrations with the HyLITE system.
  -Conduct data analysis of advanced day and night hyperspectral sensor utility for future airborne reconnaissance applications.
- 4903 Award technology contract(s)for the development of multi-mode MTI/SAR/MSI/HSI/EO/IR capablities.

Total 6862

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0305206A - Airborne Reconnaissance Advanced Development**	**K98**

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	4932	4898	6837	0
Appropriated Value	4932	4898	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-37	-46	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	25	0
Current Budget Submit (FY 2002/2003 PB)	4895	4852	6862	0

C. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
0305206D00000 DARPA (ASRP)	1150	100	0	0	0	0	0	0	0	0
63734/DT12 Rapid Terrain Visualization	11693	0	0	0	0	0	0	0	0	0
0203744A/D028 ACS	7104	13160	25873	0	0	0	0	0	0	0

D. Acquisition Strategy: The HyLITE system acquisition strategy provides for the award of a 24 month R&D effort which began in FY 1999 under best value full and open competition procedures. Data collection efforts to support analytic studies began in FY1998 using existing sensor and hardware integrated on a NVESD testbed aircraft.

The MTI/SAR/MSI/HSI and multi-sensor technologies to be developed are those that are identified and found critical to the Aerial Common Sensor (ACS) program based upon the ACS Concept Exploration (CE) Phase. The ACS CE phase completes in 1QFY02. It is the intent to competitive solicitation to award a contract(s) for the development of these technologies that will provide yearly demonstration of the technologies and transition into the ACS baseline program.

E. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
XVIII Airborne Corps WFX ; Interferometric Synthetic Aperture Radar (IFSAR)	3Q			0	0	0	0	0
Functional Capability Demo at JPSD IEC (IFSAR)	4Q			0	0	0	0	0
End to End Demonstration (IFSAR)		3Q		0	0	0	0	0
Provide Leave Behind Support (IFSAR)		1-4Q		0	0	0	0	0
Conduct data collections and real-time algorithm operations (ASRP)	1-4Q			0	0	0	0	0
Develop HyLITE	1-4Q	1-4Q	1-2Q	0	0	0	0	0
Algorithm Design and Implementation (day/night)		2-4Q	1-2Q	0	0	0	0	0
Integrate HyLITE onto testbed aircraft		4Q	1-2Q	0	0	0	0	0
Test and Demonstrate HyLITE			2-4Q	0	0	0	0	0
MTI/SAR/MSI/HSI/EO/IR technology contract			2-4Q	0	0	0	0	0
MTI/SAR/MSI/HSI/EO/IR technology demonstrations				0	0	0	0	0

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PE NUMBER AND TITLE
0305206A - Airborne Reconnaissance Advanced Development

PROJECT
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labor; IFSAR	FF/SS/MIPR	Sandia Nat'l Labs	1041	442	1Q	0		0	0	0	0	0
b . Travel; IFSAR	FF/SS/MIPR	Sandia Nat'l Labs	89	38	1Q	0		0	0	0	0	0
c . Systems Management; IFSAR	FF/SS/MIPR	Sandia Nat'l Labs	1395	595	1Q	0		0	0	0	0	0
d . Systems Engineering ; IFSAR	FF/SS/MIPR	Sandia Nat'l Labs	1681	726	1Q	0		0	0	0	0	0
e . Software Engineering ; IFSAR	FF/SS/MIPR	Sandia Nat'l Labs	206	183	1Q	0		0	0	0	0	0
f . Development Support; HyLITE	C/CPFF	BAE Systems, NY	4782	1465	1Q	600	1Q	0	0	0	0	0
g . Technology contract for MTI/SAR/MSI/HSI/EO/IR	C-CPXF	TBD	0	0		4628	1Q	0	0	0	0	Continue
Subtotal:			9194	3449		5228		0		0	0	Continue

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BUDGET ACTIVITY
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0305206A - Airborne Reconnaissance Advanced Development

PROJECT
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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 . Systems Engineering IFSAR	MIPR	Sandia Nat'l Labs	400	0		0		0	0	0	0	0
b . Testing Support; IFSAR	MIPR	Sandia Nat'l Labs	75	0		0		0	0	0	0	0
c . Technical Support; IFSAR	MIPR	Sandia Nat'l Labs	15	45	1Q	0		0	0	0	0	0
d . Configuration Mgt.; IFSAR	MIPR	Sandia Nat'l Labs	15	45	1Q	0		0	0	0	0	0
e . Equipment; IFSAR	MIPR	Sandia Nat'l Labs	105	45	1Q	0		0	0	0	0	0
f . System Engineering; HyLITE	C/T&M	EOIR, Fredricksburg VA	840	75	1Q	500	1Q	0	0	0	0	0
g . Technical Support; HyLITE	C/T&M	SAIC Corp, San Diego, CA	150	78	1Q	100	1Q	0	0	0	0	0
h . Technical Support; HyLITE	C/T&M	IDA; Washington, DC	60	100		0		0	0	0	0	0
Subtotal:			1660	388		600		0		0	0	0

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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 . Systems Evaluation; IFSAR	MIPR	Sandia Nat'l Labs	980	420	1Q	0		0	0	0	0	0
b . Systems Evaluation: HyLITE	MIPR	BCBL; Ft. Huachuca AZ	10	0		0		0	0	0	0	0
c . Test & Demonstration; HyLITE	MIPR	CECOM; NVSED	142	0		539	1Q	0	0	0	0	0
d . Integration and Demonstration of MTI/SAR/MSI/HSI/EO/IR technologies	Multiple		0	0		0		0	0	0	0	Continue
Subtotal:			1132	420		539		0		0	0	Continue

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0305206A - Airborne Reconnaissance Advanced Development

PROJECT
K98

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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; IFSAR	MIPR	Sandia Nat'l Labs	398	70	1Q	0		0	0	0	0	0
b . Government Engineering Support; IFSAR	MIPR	CECOM, NVESD	715	350	1Q	0		0	0	0	0	0
c . Program & Engineering Support; HyLITE	MIPR	CECOM; NVESD	734	175	1Q	220	1Q	0	0	0	0	0
d . Program & Engineering Support; MTI/SAR/MSI/HSI/EO/IR	MIPR	CECOM; I2WD	0	0		275	1Q	0	0	0	0	Continue
Subtotal:			1847	595		495		0		0	0	Continue
Project Total Cost:			13833	4852		6862		0		0	0	Continue

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0305208A - Distributed Common Ground Systems**	**956**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
956	DISTRIBUTED COMMON GROUND SYSTEM (DCGS) (JMIP)	8004	7821	85242	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

This project supports the engineering development of the Distributed Common Ground Station, Army (DCGS-A). DCGS-A supports network centric warfare by providing timely, multi-INT battle management and targeting information to Field Commanders at all echelons. Advanced networking, sensor connectivity and processing will provide commanders at all echelons a common intelligence view of the battlefield and access to intelligence data and products that are currently available only within echelons or not available in a timely manner. Modular and scalable components will provide flexibility in deploying assets and capabilities in support of all echelons and across a broad spectrum of conflicts. DCGS-A efforts include common unified software and hardware infrastructure across IEW BOS systems. Tactical Exploitation System (TES), Division TES (DTES), Guardrail Information Node (GR/IFN), Prophet, ASAS Block II SS, Tactical UAV Ground Control Station (GCS), and Common Ground Station (CGS) migrate to a common architecture infrastructure. The Army & Air Force have co-chairing authorship of the Joint DoD Capstone Requirements Document for the OSD Digitized Common Ground System (DCGS). This project also supports the engineering development and acquisition of Army Common Imagery Ground/Surface Systems (CIGSS). The objective of CIGSS is to enable all systems to receive, process, exploit, and report any imagery source regardless of platform or sensor type to meet the intelligence and targeting needs of tactical commanders. The CIGSS project provides the warfighter with an integrated and interoperable airborne reconnaissance imagery processing and exploitation capability that can be tailored for all levels of conflict. This project incorporates Army funds originally divested from Defense Airborne Reconnaissance Office for the imagery portion of the TES. 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). Specific details are provided in the Joint Military Intelligence Programs (JMIP) and Tactical Intelligence and Related Activities (TIARA) Congressional Budget Justification Book (CBJB)

FY 2000 Accomplishments

- 1940 Continued CIG/SS elements sustaining engineering to implement software upgrades and enhancements to maintain compatibility with changing national and tactical interfaces (ETRAC and MIES).
- 1450 Advanced Synthetic Aperture Radar (ASAR) Improvement Program (AIP) upgrade into TES.

FY 2000 Accomplishments (Continued)

- 4614 Continued CIG/SS elements sustaining engineering to implement software upgrades and enhancements to maintain compatibility with changing national and tactical interfaces (TES).

Total 8004

FY 2001 Planned Program

- 1000 Continue CIG/SS elements sustaining engineering to implement software upgrades and enhancements to maintain compatibility with changing national and tactical interfaces (MIES).
- 540 Advanced Synthetic Aperture Radar (ASAR) Improvement Program (AIP) upgrades into TES.
- 6281 Continue CIG/SS elements sustaining engineering to implement software upgrades and enhancements to maintain compatibility with changing national and tactical interfaces (TES).

Total 7821

FY 2002 Planned Program

- 7492 Continue CIG/SS elements sustaining engineering to implement software upgrades and enhancements to maintain compatibility with changing national and tactical interfaces (TES)
- 750 AIP Upgrades into TE
- 20000 Tactical Exploitation System - Main (TES-M) to III Corps - key element of Block I DCGS-A Architecture
- 20000 Fabrication, integration, test and fielding of a Guardrail Information Node (GR/IFN) to replace the GR/CS System 2 Integrated Processing Facility (IPF)as a part of DCGS-A
- 5000 Development of TES and GR/IFN interface for DCGS-A Block I
- 7000 Studies and analysis for DCGS-A Blocks II and III with an emphasis on the necessary communications/dissemination infrastructure and trade off analysis, database structure, and data element synchronization
- 10600 Conduct non-recurring engineering (NRE) to segment the TCS/MTI code.
- 5300 Develop and integrate the appropriate motion imagery capabilities into application subsets.
- 6100 Conduct NRE for common processing, exploitation and visualization application segments in an effort to derive a uniform application/toolset across and among Services.
- 3000 Development of Tactics, Techniques and Procedures (TTPs) and associated developmental, operational and interoperability (Joint Interoperability Test Center - JITC) testing.

Total 85242

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	8066	7894	8212	0
Appropriated Value	8066	7894	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-62	-73	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	77030	0
Current Budget Submit (FY 2002/2003 PB)	8004	7821	85242	0

$77 million was added to the FY2002 budget for Block I of the DCGS-A. DCGS-A funding will be used for development and integration of initial DCGS-A Block I system for the Counter-Attack Corps (III Corps), including integration of the functionalities of current and planned Ground Processing and Exploitation stations (Joint STARS Common Ground Station (CGS), Guardrail IPF, TUAV's Ground Control Station, Tactical Exploitation System (TES)). DCGS-A Block I is the first step to achieving a Intelligence, Surveillance, and Reconnaissance (ISR) networking capability and will include the integration of Synthetic Aperture Radar (SAR), Moving Target Indicator (MTI), National and theater imagery, as well as national and national and tactical SIGINT processing capabilities.

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0305208A - Distributed Common Ground Systems**	**956**

C. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PE 0603766A Project D907 (TIARA)	0	0	16749	0	0	0	0	0	0	0
PE 0604766A TES/DCGS-A (TIARA)	71879	57884	68205	0	0	0	0	0	0	0
BZ7315 TENCAP (TIARA)	4351	12735	0	0	0	0	0	0	0	0
BZ7316 CIG/SS (JMIP)	2779	2807	2611	0	0	0	0	0	0	0
BZ7317 Tactical Surveillance System (TIARA)	0	0	26168	0	0	0	0	0	0	0

D. Acquisition Strategy: The DCGS-A program Block I will be awarded primarily to original manufacturers of the legacy systems working together to establish the necessary interfaces and data sharing capabilities. As the program move from Block II to Block III, it will progress to a competitive development effort for a more robust common ground architecture solution based on an objective hardware configuration.

E. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete development of TES Main to III Corps				0	0	0	0	0
Guardrail Information Node (GR/IFN) component of DCGS-				0	0	0	0	0
Integration of Common Ground Station (CGS) capability into DCGS-A Block I				0	0	0	0	0
TES and GR/IFN interface				0	0	0	0	0
Complete Imagery portion of TES-Forward #1 and field	2Q			0	0	0	0	0
Complete Imagery portion of TES-Main #1 and field	4Q			0	0	0	0	0
Field Imagery portion of TES #2 - #6 *		4Q	4Q	0	0	0	0	0

* The majority of TES system funding is under PE 0604766A (TES/DCGS-A)

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0305208A - Distributed Common Ground Systems

PROJECT
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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 . ETRAC CIG/SS	C/CPAF	Northrop Grumman, Linthicum, MD	5537	0		0		0	0	0	0	Continue
b . MIES CIG/SS	SS/CPFF	DBA, Melbourne FL	3187	1000	1Q	0		0	0	0	0	Continue
c . TES CIG/SS *	C/CPFF	Northrop Grumman, Linthicum, MD	7855	6821	2Q	8242	2Q	0	0	0	0	Continue
d . III Corps TES MAIN	C/CPFF	Northrop Grumman, Linthicum, MD	0	0		20000	2Q	0	0	0	0	0
e . GR/IFN component of DCGS-A	SS/CPFF	TRW, Sunnyvale,CA	0	0		20000	1Q	0	0	0	0	0
f . TES and GR/IFN interface	C/CPFF	Northrop Grumman, Linthicum, MD	0	0		5000	1Q	0	0	0	0	0
g . Software Segmetation	T&M	Motorola, Scottsdale, AZ	0	0		11700	2Q	0	0	0	0	0
h . Software Integration	CP	Northrup Grumman, Baltimore, MD	0	0		1300	2Q	0	0	0	0	0
i . Software Integration	T&M	TRW, El Segundo, CA	0	0		1100	2Q	0	0	0	0	0
j . Software Integration	T&M	Lockheed Martin, Denver, CO	0	0		1100	2Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0305208A - Distributed Common Ground Systems

PROJECT
956

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 . Software Development	T&M	Northrup Grumman, Baltimore, MD	0	0		2000	1Q	0	0	0	0	0
l . Exploitation	TBD	TBD	0	0		1800	1Q	0	0	0	0	0
m . Visualization	TBD	TBD	0	0		2100	1Q	0	0	0	0	0
Subtotal:			16579	7821		74342		0		0	0	Continue

Remarks: * Majority of TES development is funded under PE 0604766A.

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DCGS Imagery IPT	MIPR	OGAs at various locations for Support	0	0		700	2Q	0	0	0	0	0
b . Doctrine/TTP Development	MIPR	Ft. Huachuca, AZ	0	0		1000	1Q	0	0	0	0	0
c . Architecture (all views) Development	MIPR	Ft. Huachuca, AZ	0	0		2400	3Q	0	0	0	0	0
d . CONOPS & TTP Refinement	MIPR	Ft. Huachuca, AZ	0	0		1500	3Q	0	0	0	0	0
e . Communications/Dissemination Trade Study	MIPR	DCSINT	0	0		2000	1Q	0	0	0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0305208A - Distributed Common Ground Systems

PROJECT
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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		7600		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 . Operational Testing	MIPR	USAIC&FH Battlelab	0	0		200	2Q	0	0	0	0	0
b . Integrated Developmental Testing	TBD	TBD	0	0		700	2Q	0	0	0	0	0
c . Operational Testing	MIPR	ATEC	0	0		800	3Q	0	0	0	0	0
d . Interoperability Certification Update	MIPR	JTIC, Ft. Huachuca, AZ	0	0		500	3Q	0	0	0	0	0
e . Participation in DCGS & Transformation Precursor Events	MIPR	Various OGAs	0	0		1100	2Q	0	0	0	0	0
Subtotal:			0	0		3300		0		0	0	0

Remarks: Not Applicable

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0305208A - Distributed Common Ground Systems

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
Remarks: Not Applicable												
Project Total Cost:			16579	7821		85242		0		0	0	Continue

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

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0603778A - MLRS Product Improvement Program

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	64794	68886	111389	0	0	0	0	0	0	0
090 MLRS HIMARS	34816	51360	51145	0	0	0	0	0	0	0
093 MLRS JOINT TECH ARCHITECTURE	3213	0	12556	0	0	0	0	0	0	0
784 GUIDED MLRS	26765	17526	47688	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

An evolutionary improvement program to maintain the effects of the Multiple Launch Rocket System (MLRS) is essential due to the expansion of regional power threats. This Product Improvement Program (PIP) provides for the maturation of a High Mobility Artillery Rocket System (HIMARS), the Joint Technical Architecture-Army (JTA-A), and the Engineering and Manufacturing Development (EMD) of a Guided MLRS (GMLRS) Rocket. The HIMARS will replace the M198 towed howitzer and allow MLRS capability to be C-130 transportable, mounting one rocket or missile pod on a 5-ton truck. It gives early entry forces immediate fire support within a hot landing zone without waiting for heavy-lift aircraft. The JTA-A will implement the capability for situational awareness in M270A1 and HIMARS launchers and trainers. A multinational GMLRS program will greatly enhance the capability of the existing MLRS, providing greater range, significantly enhanced accuracy, and interoperability among the nations covered under the MLRS Memorandum of Understanding (MOU). The improvement in accuracy and range will reduce the number of rockets required to defeat targets, thus dramatically reducing the logistics burden and increasing crew survivability. These systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

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

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0603778A - MLRS Product Improvement Program

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	66595	59523	49475	0
Appropriated Value	67440	69523		
Adjustments to Appropriated Value				
a. Congressional General Reductions				
b. SBIR / STTR	-1792			
c. Omnibus or Other Above Threshold Reductions	-276			
d. Below Threshold Reprogramming	-9			
e. Rescissions	-569	-637		
f. Other Withholds				
Adjustments to Budget Years Since FY2001 PB			61914	
Current Budget Submit (FY 2002/2003 PB)	64794	68886	111389	0

Change Summary Explanation:
FY 02: Funds increased for HIMARS ($20.239M), JTA-A ($12.556M), and GMLRS ($29.119M)

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0603778A - MLRS Product Improvement Program**	**090**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
090 MLRS HIMARS	34816	51360	51145	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The High Mobility Artillery Rocket System (HIMARS) fully supports the Army Transformation to a more deployable, affordable, and lethal force. It provides MLRS capability through a lighter weight, more deployable system in both early and forced entry scenarios. Mounted on a medium tactical wheeled vehicle, HIMARS is transportable on a C-130 aircraft, is self-locating and self-loading . It provides full MLRS and Army TACMS (ATACMS) Family of Munitions capability yet requires significantly reduced airlift resources to transport a battery as opposed to a MLRS tracked battery. HIMARS gives the 21st century force commander an ability to maneuver fires instead of forces. The current HIMARS supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP). HIMARS is the Light Force and Objective Force choice for high volume General Support and Reinforcing fire against time sensitive high payoff targets.

FY 2000 Accomplishments

- 28581 System Design
- 1233 Government Furnished Equipment (GFE), Communications & Trucks
- 3846 Resupply Vehicle and Resupply Trailer Integration
- 200 Preparation of Milestone Decision Documentation, Technical Assessments
- 956 Development Testing

Total 34816

FY 2001 Planned Program

- 49532 System Design, Test and Integration and Cost Reduction Initiatives
- 130 GFE, Communications and Trucks
- 1498 Development Testing (3 Test Articles)
- 200 Technical Assessments and Milestone Documentation

Total 51360

FY 2002 Planned Program

- 42022 Hardware Assembly, Contractor Development Test (CDT) and Critical Design Review (CDR)
- 8973 Extended System Integration Test (ESIT), Automotive Flight Test Series 1 & 2 and Ground Test, Resupply Vehicle and Resupply Trailer Integration Test (3 Test Articles)
- 150 Technical Assessments and Milestone Documentation

Total 51145

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Missile Procurement, Army	0	0	0	0	0	0	0	0	0	0
Budget Activity 3:	0	0	0	0	0	0	0	0	0	0
HIMARS Modifications (C67501)	0	0	0	0	0	0	0	0	0	0
Budget Activity 4:	0	0	0	0	0	0	0	0	0	0
HIMARS Modifications: Initial Spares (CA0289)	0	0	0	0	0	0	0	0	0	0
Initial Spares, HIMARS (CA0288)	0	0	0	0	0	0	0	0	0	0

C. Acquisition Strategy: The First Unit Equipped (FUE) is planned for FY05. The contracting strategy will be sole source.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Maturation IPR/Contract Award/WIU (40 months), Integrated Baseline Review (IBR)	1-3Q			0	0	0	0	0
Design IPR 1, Design IPR 2, First Launcher Delivered, Development Testing Begins		1-4Q		0	0	0	0	0
Functional Qualification Test (FQT), Functional Configurational Audit (FCA), Launcher 2-6 Delivered			1-4Q	0	0	0	0	0
LLI IPR, LRIP IPR				0	0	0	0	0

D. Schedule Profile (continued)

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

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0603778A - MLRS Product Improvement Program

PROJECT
090

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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/ Maturation Contract	SS/CPIF & CPAF	LMMFCS, TX	26804	43610		36022	1-3Q	0	0	0	0	0
b . Cab Improv./ OGA	N/A	TACOM (S&S)	3946	422		775	1-3Q	0	0	0	0	0
c . GFE,Comm,Trks & Trls	N/A	TACOM & CECOM	2105	130		250	1-3Q	0	0	0	0	0
d . Government Support	N/A	MRDEC, IMMC, RSA	3216	4136		813	1-3Q	0	0	0	0	0
Subtotal:			36071	48298		37860		0		0	0	0

Remarks: MRDEC - Msl Res, Dev & Eng Ctr, IMMC - Integ Matl Mgmt Ctr
RSA - Redstone Arsenal, AL, S&S - Stewart & Stevenson
LMMFCS - Lockheed Martin Missile and Fire Control System

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Support Contract	C & CPFF	Camber Research, AL	377	197	2Q	150	2Q	0	0	0	0	0
Subtotal:			377	197		150		0		0	0	0

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BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0603778A - MLRS Product Improvement Program

PROJECT
090

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	N/A	APG MD,WSMR NM & RTTC RSA	2022	1498	1-3Q	11818	1-3Q	0	0	0	0	0
Subtotal:			2022	1498		11818		0		0	0	0

Remarks: APG MD - Aberdeen Proving Ground, Maryland
WSMR NM - White Sands Missile Range, New Mexico
RTTC RSA - Redstone Technical Test Center, Redstone Arsenal, AL

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support	N/A	MLRS Proj Ofc , RSA	1661	1367	1-4Q	1317	1-4Q	0	0	0	0	0
Subtotal:			1661	1367		1317		0		0	0	0
Project Total Cost:			40131	51360		51145		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0603778A - MLRS Product Improvement Program**	**093**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
093 MLRS JOINT TECH ARCHITECTURE	3213	0	12556	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The JTA-A hardware and software development effort will provide Force XXI, First Digitized Corps with a fully digitized launcher and will integrate situational awareness into the M270A1. This supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 2877 Developed Engineering Development Test (EDT) Units
- 336 Development Testing

Total 3213

FY 2001 Planned Program

Project not funded in FY 2001

FY 2002 Planned Program

- 11272 Conduct requirements analysis, configure prototype hardware, receive prototype common cards and begin integration testing.
- 1284 Development testing

Total 12556

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0603778A - MLRS Product Improvement Program**	**093**

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Missile Procurement, Army	0	0	0	0	0	0	0	0	0	0
Budget Activity 2:	0	0	0	0	0	0	0	0	0	0
MLRS Launcher (C65900)	140680	186958	148294	0	0	0	0	0	0	0
Budget Activity 3:	0	0	0	0	0	0	0	0	0	0
MLRS Mods(C67500)	5791	16347	23599	0	0	0	0	0	0	0
Budget Activity 4:	0	0	0	0	0	0	0	0	0	0
MLRS Initial Spares (CA0257)	3108	6397	9979	0	0	0	0	0	0	0
MLRS Mod Initial Spares (CA0265)	3	830	862	0	0	0	0	0	0	0

C. Acquisition Strategy: The Joint Technical Architecture-Army (JTA-A) standards will be implemented for the M270A1 launcher to provide Force XXI capabilities for the First Digitized Corps.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Prototype hardware, system integration and test	3Q			0	0	0	0	0
Conduct rqts analysis, configure prototype h/w and receive common cards, begin integration test			2-4Q	0	0	0	0	0
Perform system integration test				0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0603778A - MLRS Product Improvement Program

PROJECT
093

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Contract (FBCB2 Integration)	CPAF	LMMFC Dallas, TX	4344	0		9647	1-3Q	0	0	0	0	0
b . Government Support	N/A	RDEC,IMMC,RSA	983	0		0		0	0	0	0	0
Subtotal:			5327	0		9647		0		0	0	0

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

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0603778A - MLRS Product Improvement Program

PROJECT
093

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	N/A	TBD	442	0		1284	1-3Q	0	0	0	0	0
Subtotal:			442	0		1284		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support	N/A	MLRS Proj Ofc, RSA	725	0		1625	1-4Q	0	0	0	0	0
Subtotal:			725	0		1625		0		0	0	0

Project Total Cost:			6494	0		12556		0		0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0603778A - MLRS Product Improvement Program**	**784**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
784 GUIDED MLRS	26765	17526	47688	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The Guided Multiple Launch Rocket System (GMLRS) is a precision strike, artillery rocket system. Coupled with the HIMARS launcher platform, the GMLRS provides the warfighter with a highly mobile, rapidly deployable, precision guided munition with a reduced logistics burden effective against counterfire, air defense, light materiel, and personnel targets. The GMLRS is a major upgrade to the M26 series rocket and replaces the aging M26 inventory. GMLRS will integrate a guidance and control package and a new rocket motor to achieve greater range and precision accuracy requiring fewer rockets to defeat targets than current artillery rockets. Since fewer rockets will be required to defeat a target, the logistics burden will be reduced. The GMLRS will also become the primary munition for the artillery units fielded with the M270A1 launcher. The GMLRS supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 26167 Engineering Development Test (EDT) Ground Tests, Hardware Assembly and Integration
- 130 Technical Assessments/Evaluations and Simulation Support
- 468 Development Testing

Total 26765

FY 2001 Planned Program

- 15156 EDT Ground and Flight Tests, Hardware Assembly, Test Results Analysis
- 150 Technical Assessments/Evaluations and Simulation Support
- 1699 Development Testing (8 Test Articles)
- 521 Small Business Innovation Research Program (SBIR) and Science and Technology Transfer (STTR)

Total 17526

FY 2002 Planned Program

- 24807 EDT Flight Test, PQT Ground and Flight Tests, Test Results Analysis, Hardware Assembly and Prove Out
- 10000 Qualification and Integration of an Alternative Self Destruct Fuze
- 1800 Advanced Field Artillery Tactical Data System (AFATDS) Interface Development
- 300 Technical Evaluations/Assessments and Support
- 10781 Development Tests (32 Test Articles)

Total 47688

B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Missile Procurement, Army	0	0	0	0	0	0	0	0	0	0
Budget Activity 2:	0	0	0	0	0	0	0	0	0	0
ER-MLRS (C65402)	4447	9327	0	0	0	0	0	0	0	0
GMLRS (65404)	0	0	8480	0	0	0	0	0	0	0

C. Acquisition Strategy: The GMLRS acquisition strategy is a streamlined product improvement program which permits entrance into Low Rate Initial Production (LRIP) and subsequent Full-Scale Production after completion of the EMD program. The primary objective of the EMD phase is to develop a rocket with greater range and significantly enhanced accuracy with minimum impact on existing MLRS companion hardware and software. This effort will incorporate the results of other development efforts for a modified submunition and increased range for a new rocket motor. The acquisition alternative most advantageous to the government is a sole source EMD contract with the system prime contractor, Lockheed Martin Missile & Fire Control Systems (LMMFCS), and maximum competition of non-developmental item (NDI) components at the vendor level.

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
EDT Grd & Flt Test, CDR		1-4Q	1-3Q	0	0	0	0	0
PQT Grd Test, PQT Flt Test			2-4Q	0	0	0	0	0
Functional Configuration Audit (FCA), Facilitization IPR, Final PDDP, LRIP IPR				0	0	0	0	0
Production Validation Test (PVT) Grd & Flt Test,1st LRIP Rocket Development				0	0	0	0	0
Initial Operational Test (IOT), Ground and Flight Test				0	0	0	0	0
MS III, FSP Contract, Initial Operational Capability (IOC)				0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0603778A - MLRS Product Improvement Program

PROJECT
784

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	SS & CPAF	LMMFCS Dallas, TX	45896	9855	1-3Q	15600	1-3Q	0	0	0	0	0
b . Government Support	N/A	RDEC, IMMC, RSA	5765	3660	1-3Q	8022	1-3Q	0	0	0	0	0
Subtotal:			51661	13515		23622		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 . Support Contract	C & CPFF	Camber Research, AL	802	188	1-3Q	556	1-3Q	0	0	0	0	0
Subtotal:			802	188		556		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0603778A - MLRS Product Improvement Program

PROJECT
784

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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	N/A	WSMR NM & Meppen,GE	979	1699	1-3Q	20781	1-3Q	0	0	0	0	0
Subtotal:			979	1699		20781		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support	N/A	MLRS Proj Ofc, RSA	2827	2124	1-4Q	2729	1-4Q	0	0	0	0	0
Subtotal:			2827	2124		2729		0		0	0	0

Project Total Cost:			56269	17526		47688		0		0	0	0

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

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
0708045A - INDUSTRIAL PREPARDEDNESS

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	84285	89067	45697	0	0	0	0	0	0	0
E25 MFG SCIENCE & TECH	55630	60770	31323	0	0	0	0	0	0	0
E27 RELIABILITY, MAINTAINABILITY & SUSTAINABILITY(RMS)	28655	18450	14374	0	0	0	0	0	0	0
E32 COSSI	0	9847	0	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The goal of this program element (PE) is to work with industry to find new ways to improve readiness and reduce Total Ownership Cost for the Army through new manufacturing technologies and enhancements/improvements to legacy systems. The technologies introduced through this PE support the Army transition to the Objective Force. This program element comprises three projects: Manufacturing Technology (ManTech); Reliability, Maintainability and Supportability (RM&S); and the Commercial Operations and Support Savings Initiative (COSSI). The goal of the Army ManTech program is to provide essential manufacturing technologies that will enable affordable production and sustainment of future and legacy weapon systems. Objectives include development of advanced manufacturing processes, equipment and systems; enhancement in quality while achieving reduction in cost of Army materiel; and transferring improved manufacturing technologies to the industrial base. The ManTech program is especially important in the current environment because of the large decline in weapon system production investments. Projects selected to be funded under this program have the potential for high payoff across the spectrum of Army weapon systems as well as significant impact on national manufacturing issues and the U.S. industrial base. The RM&S program funds projects that reduce operations and support costs through reliability, maintainability, and/or supportability improvements to fielded weapons systems or major end items. The mission of the COSSI program is to reduce operations and support costs by developing, testing, and implementing a method to insert commercial items into fielded military systems on a routine and expedited basis. COSSI was funded in DOD PE 0603805E through FY 1998, transferred to Army PE 0604824 in FY 1999, and then to PE 0708045A in FY 2000.

The cited work is consistent with the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan and Project Reliance. This program supports the Objective Force transition path of the Transformation Campaign Plan (TCP).

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	99528	57906	57474	0
Appropriated Value	100667	89906	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-2614	0	0	
c. Omnibus or Other Above Threshold Reductions	-401	0	0	
e. Below Threshold Reprogramming	-12629		0	
f. Rescissions	-738	-839	0	
Adjustments to Budget Years Since FY2001 PB	0	0	-11777	
Current Budget Submit (FY 2002/2003 PB)	84285	89067	45697	0

Change Summary Explanation: Funding - In FY 2001, Congressional adds were received for the following Manufacturing Technology (ManTech) projects: TIME (+7000), Optics manufacturing (+2000), Continuous and manufacturing technology (ManTech) (+3000), SINCGARS (+1000), Munitions manufacturing (+15000), Printed Wiring Board Manufacturing and Technology Center (+3000), and Air compressors (+1000).

FY 2002 and FY 2003: Reductions due to realignment to higher priority activities of the Army Transformation.

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0708045A - INDUSTRIAL PREPARDEDNESS**	**E25**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
E25 MFG SCIENCE & TECH	55630	60770	31323	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The goal of the Army Manufacturing Technology (ManTech) program is to provide essential manufacturing technologies that will enable the affordable production and sustainment of future and legacy weapon systems including support for Future Combat Systems (FCS) and the Objective Force. Objectives include development of advanced manufacturing processes, equipment and systems; enhancement in quality while achieving reduction in cost of Army materiel; and transferring improved manufacturing technologies to the industrial base. The ManTech program is especially important in the current environment because of the large decline in weapon system production investments since most manufacturing technology was formerly accomplished within individual production programs. Projects selected to be funded under this program have the potential for high payoff across the spectrum of Army weapon systems as well as significant impact on national manufacturing issues and the U.S. industrial base. Other factors considered for project selection include cost share with both industry and the program managers as well as return on investment. Major programs are identified as Manufacturing Technology Objectives (MTOs). This program supports the Objective Force transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 20689 Ammunition - Developed architecture for totally integrated munitions enterprise systems to include product data management, resource planning systems, change control systems and logistics systems. Demonstrated production runs for improved manufacturing of CL20 energetic material, conducted process analysis and developed demonstration process for automated concurrent engineering system to assist the construction of composites in munitions and improved manufacturing processes of explosively formed penetrators. Tested the 120mm Practice Mortar Fins statically and ballistically to reduce the cost of producing the sabot for the M829E3 kinetic energy projectile by 7% in support of the knowledge and process tools for manufacturing of affordable composites MTO.
- 7446 Aviation - Developed technology and demonstration equipment to increase manufacturing yield of ultraviolet filter materials to meet the optical requirements of the Common Missile Warning System sensor. Demonstrated manufacturing processes at the Instrumented Factory for Gears (INFAC) to include automated robotic deburring and face hobbing of gears for Comanche, Apache and Black Hawk helicopters; created and institutionalized a depot life cycle repair environment for rotary wing aircraft sustainment to reduce repair cycle time and costs; developed thin wall casting manufacturing technique for demonstration on Apache 36-155 auxiliary power unit. Through an MTO, optimized the Comanche fabrication processes and improved other process capabilities to reduce the time required to manufacture large scale composite components for rotary wing aircraft.

FY 2000 Accomplishments (Continued)

- 2197 Command and Control - Developed prototype large bulk ceramics and supporting components of X-band phase shifters for the manufacture of electronic scanning antennas to reduce size of radar by a factor of 5 with a 50% weight reduction. Scaled-up manufacturing capabilities and developed manufacturing improvements for active matrix electro-luminescent displays; improved production yield of active matrix liquid crystal displays by reducing defects during manufacturing.
- 4245 Combat Service Support - Completed cost reduction process enhancements for the manufacturing of ceramic plates used in next generation body armor. Reduced weapon system costs through a sustainment center targeted at supportability issues to reduce repair and remanufacturing requirements. Integrated seam sealing with existing sewing equipment to reduce labor costs and prevent leakage in tents. Developed and demonstrated a natural gas engine drive air compressor for military use.
- 10282 Fire Support - Demonstrated modeling process for increased performance and decreased cost of weapon system gun barrels to meet a Tantalum Sputtering MTO goal to increase barrel life by 600%. Through an MTO, developed improvements in the warhead for the Objective Individual Combat Weapon (OICW) and Objective Crew-Served Weapon (OCSW) to reduce its cost from $10.11 to $5 - $6. Through an MTO for wafer applied seal for plastic encapsulated microcircuit protection, developed a coating process for use during manufacturing of military application integrated circuits subjected to long term, unpowered storage, increased the manufacturing yield by 5%, decreased testing requirements, and increased the shelf life. Prepared for the development of affordable inertial guidance units for air-to-ground missile systems using micro-electro-mechanical systems (MEMS) in support of an MTO. Constructed a semi-automated cannon tube reshaping machine and conducted accuracy tests to demonstrate large caliber cannon tube reshaping to enhance lethality and survivability of the M1A1 tank and future combat systems through an MTO. Demonstrated manufacturing technologies for improved digital signal processing systems for guidance and control packages used in fire support.
- 8943 Intelligence and Electronic Warfare - Demonstrated yields greater than 50% for 240x320 uncooled Focal Plane Arrays (FPAs), demonstrated low cost anti-reflective coatings for IR optics, and demonstrated batch manufacturing processes for net shape lenses in support of the Cooled and Uncooled Staring Sensors MTO that impacts Drivers Vision Enhancer, Thermal Weapons Sight, Javelin, and Objective Individual Combat Weapon/Objective Crew-Served Weapon (OICW/OCSW). Developed manufacturing processes for electro-optical materials. Developed and demonstrated an automated reverse engineering system that will non-destructively extract information necessary to remanufacture obsolete printed wiring assemblies for mobile subscriber equipment, AH-64 Apache, Stinger Missile, Guardrail and ground communication systems. Demonstrated rapid response system for the reverse engineering of printed wiring assemblies at Tobyhanna Army Depot; through an MTO, continued optics manufacturing development for weapons system affordability. Developed manufacturing technologies to demonstrate an affordable short-wave infra-red gated camera tube devoted to target detection.
- 1828 Maneuver - Automated pre-form technologies for large, light-weight composite structures for new tactical vehicles, determined process capabilities through simulation of Comanche, and developed non-proprietary cost models and process models for thin section resin transfer moldings to reduce manufacturing costs by 30% through an MTO.

Total 55630

FY 2001 Planned Program

- 304 Ammunition - Conduct pre-qualification test and initiate production improvement program to lower the cost and improve the manufacturing processes for the 120mm Practice Motar Fins in support of the knowledge and process tools for the Manufacturing of Affordable Composites MTO.
- 1710 Aviation - Achieve 30% to 60% component cost reduction of thin wall castings for auxiliary power units and propulsion systems; through Power Transfer Systems Manufacturing (PTSM) develop a manufacturing process for chemical surface finishing of rotating shafts and gears to extend service life and increase load-carrying ability for aerospace components. Through an MTO, demonstrate Comanche pilot structural composite manufacturing improvement processes that significantly reduce the weight and cost of manufacturing large scale composite components.
- 2235 Command and Control - Fabricate and test phase shifters for electronic scanning antennas and demonstrate 20X reduction in power requirements for phase shifters. Demonstrate manufacturing processes to control cell gap uniformity to lower cost of active matrix liquid crystal displays to lower the cost from $12K to less than $2K per system. Demonstrate phosphor and metals deposition manufacturing processes to increase yields of Active Matrix Electro-Luminescent displays used in Land Warrior and Thermal Weapons System.
- 350 Combat Service Support - Refine seam-sealing technology process, expand production capability and field test.
- 14077 Fire Support - Increase performance and decrease cost of weapon system gun barrels with specific subtasks to include the manufacture and installation of sputtering targets and development of manufacturing processes for large caliber gun barrels through the MTO in tantalum sputtering. Insert special coated integrated circuits into selected military systems for demonstration and validation through the MTO in wafer applied plastic encapsulated microcircuit protection to demonstrate a 78% improvement in resistance to internal corrosion and improve fabrication and packaging yields by 5% (significant for large production volume). Develop manufacturing processes for inertial measurement units utilizing micro-electro-mechanical systems (MEMS) and model process flow of the assembly process in an MTO. Through the Uniform Cannon Tube Reshaping MTO, improve centerline bore measurement and integrate computer control for large caliber cannon tube reshaping to enhance lethality and survivability of the M1A1 and Future Combat Systems. Demonstrate affordable advanced tungsten warhead and steel warhead designs through an MTO for the Objective Individual Combat Weapon (OICW) and Objective Crew-Served Weapon (OCSW). Utilize commercial digital signal processors and alternative design guidance and control modules to reduce new upgrade procurement costs by 25% for Army TACMS 2000 and Patriot PAC3 guidance and control modules.
- 6616 Intelligence and Electronic Warfare - Demonstrate 15% yield for 240x320 cooled dual color FPAs and transfer processes to 480x640 cooled dual color FPAs through the Cooled and Uncooled Staring Sensors MTO. Through an MTO, demonstrate an Advanced Asphere Optic to reduce weight and cost of optical subsystems such as that used on Objective Individual Combat Weapon (OICW). Demonstrate manufacturing processing for square photocathodes that are more efficient than round photocathodes to reduce the cost of short wave infrared gated camera tubes used in target detection and recognition. Develop several viable production methods to integrate electrical and optical conductive networks, miniature sensors, and electronic devices into textile based clothing and equipment to support Future Warrior systems.

FY 2001 Planned Program (Continued)

- 1708 Maneuver - Implement investment strategy for risk reduction, knowledge base development, and tooling for the MTO in knowledge and process tools for manufacturing affordable composite structures, and optimize the Armor Tile Processing and Placement to reduce the cost of the Crusader turret by 37%.

FY01 Congressional adds:

- 7000 Totally Integrated Munitions Enterprise (TIME) will continue another year of effort supported by previous Congressional adds that enables cost effective, agile, rapidly reconfigurable, distributed enterprise and control technologies for munitions manufacture. Goals: Develop manufacturing technologies essential to the affordable production of conventional and precision munitions; develop, integrate, and demonstrate the TIME system architecture, Open Modular Architecture Controller (OMAC) modules/application programming interfaces for machine tools and other process controllers, communications, software, and other critical technologies necessary to achieve the objectives of TIME.
- 2000 Optics manufacturing provides for a one year effort toward enabling the affordable fabrication, testing and assembly of complex optical elements. Goals: Develop and characterize processes for shaping and finishing optical glasses and infrared transmitting materials for military systems and develop processes for fabricating durable multi-spectral transmitting windows.
- 3000 Continuous and manufacturing technology (MANTECH) provides for a one year effort toward essential manufacturing technologies that will enable the affordable production and sustainment of future weapon systems. Goal: Demonstrate a continuous manufacturing process to produce low-cost, low weight aluminum metal matrix composite components with tailorable properties.
- 1000 Single Channel Ground and Airborne Radio System (SINCGARS) provides for a one year manufacturing process development effort for rechargeable bipolar wafer-cell nickel metal hydride (NiMH) batteries for the SINCGARS radio system.
- 15000 Munitions Manufacturing will continue another year of effort supported by previous Congressional adds to reduce product variability and reduce cost of production. Goal: Develop manufacturing technologies essential to the affordable production of conventional and precision munitions.
- 3000 The Printed Wiring Board Manufacturing and Technology Center will continue another year of effort supported by previous Congressional adds for the development and application of printed wiring board technology for weapon systems. Goal: Develop manufacturing technologies essential to the affordable production of advanced printed wiring boards (PWBs) for DoD weapon systems.
- 1000 Air compressors will continue research supported by previous Congressional adds to apply natural gas engine driven air compressor technology to Army installations. Goal: Conduct cost-shared demonstration to achieve savings in operational budgets through the high efficiency and low overall cost of environmentally benign natural gas engine-driven air compressor technology.
- 1770 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 60770

FY 2002 Planned Program

•	1754	Aviation - Refine surface finishing process, fabricate test specimens and conduct rolling contact fatigue tests for aerospace power transfer systems components through Power Transfer Systems Manufacturing (PTSM). Initiate transition of 6-Sigma improved composite manufacturing processes through an MTO to reduce the labor required to produce Comanche lower forward fuselage and Apache Longbow mid fuselage by 25%. Reduce manufacturing cost of sensor element material used in advanced threat/countermeasures/common missile warning systems.
•	841	Command and Control - Demonstrate active matrix electro-luminescent display manufacturing and process improvements and cost reductions early in the fielding cycle.
•	20556	Fire Support - Demonstrate increased performance and decreased cost through the MTO for Tantulum Sputtering of Large Caliber Gun Barrels including the manufacture and set-up of 120mm and 155mm sputtered barrels. Develop manufacturing processes and model process flow of the assembly process for inertial measurement units utilizing micro-electro-mechanical systems through an MTO. Conduct fatigue testing and validate cannon tube reshaping process and precision reshaping algorithms to improve cannon tube straightness on 120mm barrels through an MTO. Demonstrate manufacturing process for fuze circuit, application specific integrated circuits and safe-and-arm for the Objective Individual Combat Weapon/Objective Crew-Served Weapon (OICW/OCSW) MTO; scale up manufacturing process, optimize design for manufacturing and reliability, demonstrate digital signal processing technologies and transition to TACMS and PAC3. Produce titanium ingots, develop simulation tools to optimize forging and casting and demonstrate out-of-chamber flux-cored welding process for use with ground vehicle applications through an MTO.
•	6265	Intelligence and Electronic Warfare - Fabricate and integrate 480x640 cooled mid-wave infrared and long-wave infrared focal plane array (FPA) and dewar manufacturing improvements to achieve the MTO focused on cooled and uncooled infrared staring sensors. Through an MTO, initiate process improvements for an Advanced Asphere Optic to reduce weight and cost of optical subsystems. Demonstrate improved manufacturing processes for short-wave infra-red gated camera tube used for target detection.
•	1907	Maneuver - Complete cost model and enhance process models for thick section composite resin transfer molding process supporting Crusader for the MTO in knowledge and process tools for manufacturing affordable composite structures.
Total	31323	

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

C. Acquisition Strategy: Not applicable for this item.

D. Schedule Profile: Not applicable for this item.

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**0708045A - INDUSTRIAL PREPARDEDNESS**	**E27**

COST (In Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
E27	RELIABILITY, MAINTAINABILITY & SUSTAINABILITY(RMS)	28655	18450	14374	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The Reliability, Maintainability and Supportability (RM&S) program supports innovative, state-of-the-art projects to improve readiness and reduce Operations and Support (O&S) costs by replacing or improving components of fielded weapon/legacy systems with more reliable, maintainable and/or supportable items. The RM&S program is limited to improvements that reduce the cost of ownership for fielded systems and equipment. RM&S funds generally may not be used to modify a weapon system currently in development, until the weapon system has satisfied all supportability requirements defined in the Operational Requirements Document (ORD) or system specification. The RM&S program uses Research, Development, Test and Evaluation (RDT&E) funding, which allows the pursuit of complex technology insertion projects. This program supports the Objective Force transition path of the Transformation Campaign Plan (TCP).

FY 2000 Accomplishments

- 515 Ammunition - Designed a less expensive .50 caliber cartridge for the long range sniper rifle for use by the Army Sniper School and in other sniper training.
- 12880 Aviation - Performed analytical and design studies, prepared modification drawings, and developed smart orifices for a high performance scalable landing gear shock strut that is less susceptible to damage. Completed and implemented a preventive and predictive maintenance expert system for real time monitoring and tracking of sources of machine deterioration for Corpus Christi Army Depot's (CCAD) automatic test equipment; completed risk reduction, continued engineering design and development, and began test article fabrication for a new CH-47 dry rotor hub to eliminate wet bearings and replace the bearings with elastomeric bearings which require no additional lubrication. Established an aggressive fleet maintenance management capability composed of process, policy, and hardware improvements to reduce support costs and improve operational readiness for the CH-47 fleet. Baselined a process to establish and institutionalize a depot life cycle repair environment to reduce repair cycle time and the cost to repair military aircraft, engines and components through the Rotary Wing Aircraft Sustainment Project (RWASP). Integrated a universal common automatic recovery system into the Hunter system to reduce attrition of air vehicles and reduce level of repair required after crashes.
- 1835 Command and Control - Prepared the contract to reverse engineer the obsolete parts for AN/PRC-112 radios, ensuring that the basic, proven radio can continue to serve as the backbone of the search and rescue system.

FY 2000 Accomplishments (Continued)

- 5586 Combat Service Support - Developed an accelerated, short term, high temperature testing method to establish new shelf life parameters for Meal, Ready-to-Eat (MRE) items to reduce costs incurred as a result of protracted storage studies. Redesigned the current commercially based rechargeable lithium battery technology into a format that fully meets the technical and operational requirements of the military, and is technically superior and more cost effective than the silver zinc battery currently used for the Improved Target Acquisition System (ITAS) and the small cell lithium ion battery technologies currently available for use with the Land Warrior system. Through market analysis, determined there are three suitable alternative water resistant, vapor permeable fabrics for the extended cold weather clothing system that reduce weight, improve cold weather protection, and reduce overall costs. Developed a test plan for a commercial wastewater treatment system to treat laundry wastewater for reuse in latrines and showers and a total treatment / reutilization of wastewater that will reduce field water consumption and wastewater discharge.
- 1279 Fire Support - Developed an interface device that will provide digital linkage from the fire control panel tactical proficiency trainer to the single-channel ground and airborne radio system and will enhance the training value of the trainer by allowing it to fully emulate the Multiple Launch Rocket System (MLRS) launcher fire control panel. Fabricated and tested clad gun barrels for M240 system and tested cladding procedure to double the barrel life. Developed, tested and provided a fielding strategy for an improved system to contain tritium gas and tritiated water from damaged radioluminescent light sources.
- 3410 Intelligence and Electronic Warfare - Developed system integration, test, verification and validation plan and began hardware design and development for cost and supportability upgrades to the Improved Target Acquisition System - fire control subsystem and Improved Bradley Acquisition System - missile control subsystem. Replaced key SATCOM components of the TROJAN SPIRIT II to increase the efficiency of existing satellite bandwidth utilization and prepare for the migration to the emerging Warfighter Information Network. Upgraded signal data processor cards for retrofit of the Sentinel system by using commercial grade parts.
- 1021 Maneuver - Demonstrated technology to automate balancing of turbine engine components to reduce cycle time by 80% over manual balancing. Developed, demonstrated and implemented a mobile seven axis machining system to improve the repair and overhaul capabilities of Anniston Army Depot (ANAD), to include designing and developing the machining system, designing the base, and optimizing the system to meet ANAD mobile machining requirements. Developed a low cost corrosion mitigating technique for components such as frame rails found on tactical wheeled vehicles that have corrosion problems resulting in costly premature failures.
- 1798 Mobility - Conducted service life assessments of extended range track systems, established new rubber track component performance baselines, optimized performance of new rubber compounds, and identified wear/failure mechanisms in candidate materials to extend the life of rubber track components for ground vehicles.
- 331 Nuclear, Biological, Chemical - Evaluated and tested alternative testing agents for the Joint Lightweight Integrated Suit Technology (JLIST) to transition from a live chemical agent to a simulant to yield a safer, more reliable, quicker and more economic means for the maintenance and evaluation of chemical overgarments.

Total 28655

FY 2001 Planned Program

- 1099 Ammunition - Fabricate and test the less expensive .50 caliber training cartridge for the long range sniper rifle and transition to procurement.
- 7913 Aviation - Fabricate prototype hardware, install smart orifices, and conduct support tests for the high performance scalable landing gear shock strut that is less susceptible to damage. Develop cost avoidance, cycle time reduction, and information integration change agent strategies to improve the depot life cycle repair environment through the Rotary Wing Aircraft Sustainment Project. Integrate and test the new strapdown fiber optic attitude heading reference system which utilizes directional/vertical gyroscopes as a replacement for the current mechanical gyros used in cargo and utility helicopters. Complete engineering design and development, continue test article fabrication, and begin component testing of the new CH-47 dry rotor hub.
- 641 Command and Control - Re-establish a production capability for new AN/PRC-112 radios, enabling the production of new modules to be used as spares and repair parts at the depot level repair facilities, so that AN/PRC-112 radios already deployed can continue to be supported.
- 751 Combat Service Support - Correlate and validate new Meal, Ready to Eat (MRE) storage testing method with the existing longer term testing parameters, complete product tests and shelf stability evaluations, and transition to the Defense Logistics Agency (DLA) for procurement. Optimize the MRE's packaging to reduce the amount of materials required to package the MRE. Select supplier for and conduct fabric testing of the alternative water resistant, vapor permeable fabrics for the extended cold weather clothing system to reduce weight, improve cold weather protection, and reduce overall costs. Perform system testing and evaluation of the wastewater treatment system to treat laundry wastewater for reuse in latrines and showers and a total treatment / reutilization of wastewater that will reduce field water consumption and wastewater discharge.
- 293 Fire Support - Validate radial forging procedures for gun barrel preforms and demonstrate extended wear of clad M240 gun barrels.
- 4737 Intelligence and Electronic Warfare - Complete hardware design and development and unit testing for the cost and supportability upgrades to the Improved Target Acquisition System - fire control subsystem and Improved Bradley Acquisition System - missile control subsystem. Rewire and test upgraded Sentinel signal data processor upgrades and transition to the Sentinel processor family.
- 272 Maneuver - Conduct fatigue testing, metallurgical evaluation, and final demonstration for an automated system to simultaneously balance and laser machine components.
- 1912 Mobility - Demonstrate inspection equipment and techniques capable of producing new track vehicle rubber formulations to increase the life of rubber track components to 5000 miles by validating accelerated aging tests and life-service predictive models and finalizing production and field evaluation methods.

FY 2001 Planned Program (Continued)

- 283 Nuclear, Biological, Chemical - Implement the replacement testing agent for the Joint Lightweight Integrated Suit Technology (JLIST), completing the transition from a live chemical agent to a simulant to yield a safer, faster, more reliable, and more economical means for the maintenance and evaluation of chemical overgarments through vapor testing at high relative humidity, completing technical data, and transitioning to DLA for procurement.

- 549 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 18450

FY 2002 Planned Program

- 9343 Aviation - Revise the shock strut design to incorporate new smart orifices, fabricate final test hardware, and conduct final performance testing for the new high performance scalable landing gear shock strut for the Apache. Implement process changes and model process flow enhancements through the Rotary Wing Aircraft Sustainment Project (RWASP). Continue test article fabrication, complete component testing, begin flight testing and low rate initial production of the new CH-47 dry rotor hub that will have 75% fewer parts and 70% fewer special tools required to maintain the system.

- 220 Fire Support - Fabricate final prototypes and conduct final verification testing for the new radial forging procedures for gun barrel preforms and demonstrate extended wear of clad M240 gun barrels.

- 1880 Intelligence and Electronic Warfare - Perform software integration testing and formal qualification testing for the cost and supportability upgrades to the Improved Target Acquisition System - fire control subsystem and Improved Bradley Acquisition System - missile control subsystem.

- 635 Maneuver - Demonstrate a low cost corrosion mitigating technique for epoxy-coated High Mobility Multipurpose Wheeled Vehicle (HMMWV) frame rails to prevent costly premature failures through treatment of test vehicles, testing treated, preparing final report, and training personnel for transition to field units and treatment implementation.

- 2296 Mobility - Prove out 5000 mile production rubber track candidates and test methods on T158, T157, and T156 track systems and implement on Abrams tank, and Bradley Fighting Vehicle.

Total 14374

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

C. Acquisition Strategy: Not applicable for this item.

D. Schedule Profile: Not applicable for this item.

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**1001018A - NATO JSTARS (SUMMARY)**	**C35**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C35 NATO AGS - TIARA	0	0	2109	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

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

The United States is a major participant in a cooperative venture to select and procure a ground surveillance capability for North Atlantic Treaty Organization (NATO) forces. In May 1997, a Conference of National Armament Directors invited member nations to offer Alliance Ground Surveillance (AGS) solutions. Currently, work continues to establish a solution for a NATO AGS system. The Army will support US Government activities in providing a NATO AGS system, focusing on the ground station segment of any solution. Once NATO members agree upon an AGS solution, Army efforts will shift from defining an acceptable solution to the necessary development of data formats, interoperability, and ground station hardware and software requirements. The three Army imperatives with regard to participation in NATO AGS are interoperability, technology re-use, and technology feedback. This system supports the legacy transition path of the Transformation Campaign Plan (TCP).

FY02 funds will provide personnel and resources to the NATO Trans-Atlantic Advanced Radar (NATAR) Program Definition Office (PDO). The Army will fund work contributing to interoperability among allied nations and support US participation in pertinent exercises such as "Clean Hunter". Other primary support to NATO AGS will include the development of a Concept of Operations (CONOPS) and Tactics, Techniques, and Procedures (TTP). The Army will support both working level meetings and executive oversight groups such as the NATAR Management Board, the AGS Steering Committee, and the Conference of National Armament Directors.

FY 2002 Planned Program

- 50 Support NATAR Management Board, NATO AGS Steering Committee, and the Conference of National Armament Directors.
- 796 Develop systems architecture and data formats to meet NATO member requirements and interoperability issues.
- 753 Support exercises and demonstrations for NATO member representatives.
- 510 Support the NATAR Program Definition Office in the preparation of acquisition documentation for development/procurement of NATO AGS Air and Ground Segments.

Total 2109

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - OPERATIONAL SYSTEMS DEV	**1001018A - NATO JSTARS (SUMMARY)**	**C35**

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	0	0	0	0
Appropriated Value	0	0	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR/STTR	0	0	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Recissions	0	0	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	2109	0
Current Budget Submit (FY 2002/2003 PB)	0	0	2109	0

Change Summary Explanation:
Funding aligned into this project to support NATO AGS efforts.

C. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
BA1080 Joint STARS (TIARA)	94840	65805	21304	0	0	0	0	0	0	0
BS9724 Joint STARS Spares	5434	6122	4361	0	0	0	0	0	0	0
64770/D202 Joint Stars(TIARA)	25676	28632	8093	0	0	0	0	0	0	0

D. Acquisition Strategy: NATO AGS is currently in the Program Definition phase. The Army will support this activity with both requirements and acquisition personnel. The objective is to prepare for the eventual NATO procurement of an AGS capability. Based on extensive background knowledge obtained through the development of the Army's Common Ground Station (CGS), the Army intends to support the AGS effort with the expertise of individuals already involved with CGS. The Army intends to contract with the CGS manufacturer as necessary to support the development of an AGS ground segment, and to support exercises and demonstrations as they pertain to the US Government objectives and the Army AGS imperatives.

E. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Program Definition of a Baseline Solution			1-3Q	0	0	0	0	0
NATO Decision on Solution to Develop			4Q	0	0	0	0	0
Development of Baseline Solution				0	0	0	0	0
Spiral Development and Pre-Planned Product Improvements				0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
1001018A - NATO JSTARS (SUMMARY)

PROJECT
C35

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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 Architecture, Data Formats and Interoperablity Requirements	T&M	Motorola, Scottsdale, AZ	20724	0		521	1Q	0	0	0	0	0
b . Develop NATO AGS Solutions for Ground Station Segment	T&M	Motorola, Scottsdale, AZ	0	0		0		0	0	0	0	0
Subtotal:			20724	0		521		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Definition Office (PDO) Support	MIPR	PDO, Brussels	0	0		510	1Q	0	0	0	0	Continue
b . Support Executive and Working Level Meetings and Conferences	MIPR	Various	0	0		50		0	0	0	0	Continue
Subtotal:			0	0		560		0		0	0	Continue

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
7 - OPERATIONAL SYSTEMS DEV

PE NUMBER AND TITLE
1001018A - NATO JSTARS (SUMMARY)

PROJECT
C35

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	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 Exercises and Demonstrations	T&M	Various Locations	0	0		576	1Q	0	0	0	0	0
b . Test and Evaluation Support	MIPR	Other Gov't Agencies	0	0		177	1Q	0	0	0	0	0
Subtotal:			0	0		753		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management		PM CGS, Fort Monmouth, NJ	1707	0		275	1Q	0	0	0	0	Continue
Subtotal:			1707	0		275		0		0	0	Continue

Project Total Cost:			22431	0		2109		0		0	0	Continue

End of P&R Forms Report

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