Department of Defense
Fiscal Year (FY) 2012 Budget Estimates

February 2011

Army

Justification Book Volume 5A

Research, Development, Test & Evaluation, Army

Volume 5A Table of Contents

FY 2012 RDT&E, ARMY
PROGRAM ELEMENT DESCRIPTIVE SUMMARIES

Introduction and Explanation of Contents

1. General. The purpose of this document is to provide summary information concerning the Research, Development, Test and Evaluation, Army program. The descriptive summaries are comprised of R-2 (Army RDT&E Budget Item Justification – program element level), R-2A (Army RDT&E Budget Item Justification – project level), R-3 (Army RDT&E Cost Analysis), R-4 (Schedule Profile Detail) and R-5 (Termination Liability Funding for MDAPs) Exhibits, which provide narrative information on all RDT&E program elements and projects through FY 2012.

2. Relationship of the FY 2012 Budget Submitted to Congress to the FY 2011 Budget Submitted to Congress. This paragraph provides a list of program elements/projects that are major new starts, restructures, developmental transitions, newly established, terminated or for which funding existed in the FY 11 budget but no longer exists in the FY 12 budget. Explanations for these changes can be found in the narrative sections of the Program Element R-2A Exhibits.

A. New Start Programs:

PE/PROJECT	PE TITLE	PROJECT TITLE
0604115/DS3	Technology Maturation Initiatives	Technology Maturation Initiatives
0203735/DS5	Combat Vehicle Improvement Program	Armored Multi Purpose Vehicle (AMPV)
0604808/434	Close Combat Capabilities Eng Dev	Anti-Personnel Landmine Alternatives
0603820/D20	UAS Modifications/Product Imp Prg	VTOL MODS/PIP
0603807/VS7	Medical Systems Advanced Dev	MEDEVAC Mission Equipment Package
0603817/S52	Soldier Systems – Adv Dev	Soldier Support Equipment – AD
0604270/VS6	EW Development	Integrated Electronic Warfare Sys
0604818/JN1	Army Tac Comm & Cont Hardware And Software	*Joint Network Node (JNN) Testing
0604820/E10	Radar Development	Sentinel
0203726/33C	Advanced Field Artillery Tactical Data System	Improved Position Azimuth Determining System (IPADs)
0303141/VU2	Global Combat Support System	Installation Fixed Base (IFB)

*Program Re-start

B. Program Element/Project Restructures:

Old PE/Project	New Project Title	New PE/Project
0601104/J22	Network Science and Technology Research Center	0601104/H50
0602787/878	Warfighter Health Prot and Perf Stds	0602787/869
0602787/879	Warfighter Health Prot and Perf Stds	0602787/869
0603005/C66	Tractor Nail	0603130/DS8
0603006/DF7	Tractor Eggs	0603131/DS9
0603308/978	Tractor Jute	0604131/DT1
0604270/L20	Common Missile Warning System (CMWS)	0604270/VU7
	Common Infrared Counter Measure (CIRCM)	0604270/VU8
0604805/589	Army Sys Engineering & Warfighting	0604805/593
0305204/114	RQ-7 Shadow UAV	0305233/RQ7
0305204/D10	RQ-11 Raven (MIP)	0305232/RA7
0604710/L76	Dismounted Fire Support Laser Targeting System	0604710/L79
0604817/482	Ground Combat ID	0604284/VU4
0605605/E97	DOD HELSTF	0605601/F30
0605857/061	Material Sustainment Support AD	0603804/K42
0203759/122	Joint Battle Command – Platform	0604805/593
0203801/DF8	Tractor Barn	0203808/DS1
0203801/DF9	Tractor PUMA	0203808/DS2

C. Developmental Transitions:

Old PE/Project	New Project Title	New PE/PROJECT
0603804/L04	Joint Light Tactical Vehicles (JLTV) – SD	0604804/L50
0603827/S49	Ground Soldier Ensemble	0604827/S75

D. Establishment of new FY 2012 Program Elements/Projects. (Does not include any major new starts)

TITLE	PE/PROJECT
Surface Science Research	0601102/VR9
Center for Advanced Research	0601104/VS2
Expeditionary Mobile Base Camp Technology	0602786/VT4
Expeditionary Mobile Base Camp Demonstration	0603001/VT5
Tractor Nails	0603130/DS8

Tractor Eggs	0603131/DS9
*High Performance Computing Modernization Program	0603461/DS7
Tractor Jute	0604131/DT1
Soldier Protective Equipment	0603827/VS4
Combat Service Support Systems – AD	0603804/VR8
Joint Effects Targeting Systems (JETs)	0604710/L79
Combat Service Support Systems	0604804/VR7
TWV Protection Kits	0604622/VR5

*transferred from RDT&E,DW PE 0603755D8Z

E. Program Terminations.

TITLE	PE/PROJECT
Electric Gun Technology	0602618/H75
Aircraft Weapons	0603003/435
BCT Non-Line-of-Sight Launch System	0604646/F72
BCT Reconnaissance (UAV) Platforms	0604662/FC3
Close Combat Capabilities Eng Dev	0604808/016

F. Programs for which funding existed in the FY 11 budget but no longer exists in the FY 12 budget.

PE/PROJECT	TITLE	Brief Explanation
0601104/J22	Network Science & Tech Res	Restructure to 0601104/H50
0602618/H75	Electric Gun Tech	Termination
0602787/878	Hlth Haz Mil Material	Restructure to 0602787/869
0602787/879	Med Fact Enh Sold Eff	Restructure to 0602787/869
0603003/435	Aircraft Weapons	Termination
0603005/C66	DC66	Restructure to 0603130/DS8
0603006/DF7	DF7	Restructure to 0603131/DS9
0603308/978	Space Control	Restructure to 0604131/DT1
0603804/K42	Material Sustainment Support	Transition to Army Supply System
0603804/L04	Jt Light Tact Vehicle (JLTV)-AD	Transition to 0604804/L50
0603827/S49	Ground Soldier System (GSS)	Transition to 0604827/S75
0604270/L20	ATIRCM/CMWS	Restructured to 0604270/VU7 & VU8
0604609/198	Target Defeating System	Completed R&D
0604609/200	Smoke/Obscurant System	Completed R&D
0604622/659	Family of Hvy Tac Veh	Transition to production

0604642/E40	LTV Prototype	Completed R&D
0604646/F72	BCT NLOS Launch Sys	Termination
0604710/L76	Dismounted Fire Support Laser Targeting System	Restructured to 0604710/L79
0604804/L47	Improved Environmental Control Unit	Transition to production
0604805/589	Army Sys Engr & Warfighting	Restructured to 0604805/593
0604808/016	Close Combat Capabilities ED	Termination
0604817/482	Ground Combat ID	Restructured to
0605013/087	Distributed Learning System	Transition to production
0604662/FC3	BCT Reconnaissance (UAV) Platforms	Termination
0605605/E97	DOD HELSTF	Restructured to 0605601/F30
0203759/122	Jt Battle Command Platform	Restructured to 0604805/593
0203801/DF8	DF8	Restructured to 0203808/DS1
0203801/DF9	DF9	Restructured to 0203808/DS2
0305204/114	Tactical Unmanned Aerial Vehicles (MIP)	Restructured to 0305233/RQ7
0305204/D10	SUAV (MIP)	Restructured to 0305233/RA7
0305208/D15	MUSE & TES TADSS (MIP)	Completed R&D

3. **Classification:** This document contains no classified data Appropriately cleared individuals can obtain further information on Classified/Special Access Programs by contacting the Department of the Army (ASA(ALT)) Special Programs Office.

4. **Performance Metrics.** Performance metrics may be found in the Department's Performance Budget Justification Book, dated February 2012.

Department of the Army

FY 2012 RDT&E Program

President's Budget 2012/13

Summary

Exhibit R-1

10-Feb-2011

Summary Recap of Budget Activities	Thousands of Dollars				
	FY2010	FY2011	FY2012	FY2012 OCO	FY2012 Total
Basic research	420,190	406,873	436,920	0	436,920
Applied Research	1,321,605	841,364	869,332	0	869,332
Advanced technology development	1,366,194	696,592	976,812	0	976,812
Advanced Component Development and Prototypes	982,111	804,148	753,084	0	753,084
System Development and Demonstration	4,285,025	5,035,046	4,190,788	0	4,190,788
Management support	1,487,815	1,142,383	1,048,671	8,513	1,057,184
Operational system development	1,843,989	1,553,445	1,403,837	0	1,403,837
Total RDT&E, Army	11,706,929	10,479,851	9,679,444	8,513	9,687,957

Appropriation: 2040 A RDT&E, Army

10-Feb-2011

Line No	Program Element Number	Act	Item	Thousands of Dollars FY2010	FY2011	FY2012	FY2012 OCO	FY2012 Total
			Basic research					
1	0601101A	01	IN-HOUSE LABORATORY INDEPENDENT RESEARCH	19,278	21,780	21,064		21,064
2	0601102A	01	DEFENSE RESEARCH SCIENCES	196,921	195,845	213,942		213,942
3	0601103A	01	UNIVERSITY RESEARCH INITIATIVES	96,409	91,161	80,977		80,977
4	0601104A	01	UNIVERSITY AND INDUSTRY RESEARCH CENTERS	107,582	98,087	120,937		120,937
			Total: Basic research	420,190	406,873	436,920	0	436,920
			Applied Research					
5	0602105A	02	MATERIALS TECHNOLOGY	88,022	29,882	30,258		30,258
6	0602120A	02	SENSORS AND ELECTRONIC SURVIVABILITY	82,449	48,929	43,521		43,521
7	0602122A	02	TRACTOR HIP	13,807	14,624	14,230		14,230
8	0602211A	02	AVIATION TECHNOLOGY	44,810	43,476	44,610		44,610
9	0602270A	02	ELECTRONIC WARFARE TECHNOLOGY	23,581	17,330	15,790		15,790
10	0602303A	02	MISSILE TECHNOLOGY	69,871	49,525	50,685		50,685
11	0602307A	02	ADVANCED WEAPONS TECHNOLOGY	19,906	18,190	20,034		20,034
12	0602308A	02	ADVANCED CONCEPTS AND SIMULATION	22,070	20,582	20,933		20,933
13	0602601A	02	COMBAT VEHICLE AND AUTOMOTIVE TECHNOLOGY	79,649	64,740	64,306		64,306
14	0602618A	02	BALLISTICS TECHNOLOGY	73,456	60,342	59,214		59,214
15	0602622A	02	CHEMICAL, SMOKE AND EQUIPMENT DEFEATING TECHNOLOGY	8,706	5,324	4,877		4,877
16	0602623A	02	JOINT SERVICE SMALL ARMS PROGRAM	9,001	7,893	8,244		8,244
17	0602624A	02	WEAPONS AND MUNITIONS TECHNOLOGY	140,727	42,645	39,813		39,813
18	0602705A	02	ELECTRONICS AND ELECTRONIC DEVICES	134,946	60,859	62,962		62,962
19	0602709A	02	NIGHT VISION TECHNOLOGY	48,250	40,228	57,203		57,203
20	0602712A	02	COUNTERMINE SYSTEMS	27,892	19,118	20,280		20,280
21	0602716A	02	HUMAN FACTORS ENGINEERING TECHNOLOGY	30,395	21,042	21,801		21,801
22	0602720A	02	ENVIRONMENTAL QUALITY TECHNOLOGY	17,545	18,364	20,837		20,837
23	0602782A	02	COMMAND, CONTROL, COMMUNICATIONS TECHNOLOGY	31,691	25,573	26,116		26,116
24	0602783A	02	COMPUTER AND SOFTWARE TECHNOLOGY	9,896	6,768	8,591		8,591
25	0602784A	02	MILITARY ENGINEERING TECHNOLOGY	60,536	79,189	80,317		80,317

Line No	Program Element Number	Act	Item	Thousands of Dollars FY2010	FY2011	FY2012	FY2012 OCO	FY2012 Total
26	0602785A	02	MANPOWER/PERSONNEL/TRAINING TECHNOLOGY	16,358	22,198	18,946		18,946
27	0602786A	02	WARFIGHTER TECHNOLOGY	37,040	27,746	29,835		29,835
28	0602787A	02	MEDICAL TECHNOLOGY	231,001	96,797	105,929		105,929
	Total:		Applied Research	1,321,605	841,364	869,332	0	869,332
			Advanced technology development					
29	0603001A	03	WARFIGHTER ADVANCED TECHNOLOGY	51,596	37,364	52,979		52,979
30	0603002A	03	MEDICAL ADVANCED TECHNOLOGY	336,741	71,510	68,171		68,171
31	0603003A	03	AVIATION ADVANCED TECHNOLOGY	104,229	57,454	62,193		62,193
32	0603004A	03	WEAPONS AND MUNITIONS ADVANCED TECHNOLOGY	92,638	64,438	77,077		77,077
33	0603005A	03	COMBAT VEHICLE AND AUTOMOTIVE ADVANCED TECHNOLOGY	261,689	89,499	106,145		106,145
34	0603006A	03	COMMAND, CONTROL, COMMUNICATIONS ADVANCED TECHNOLOGY	12,074	8,102	5,312		5,312
35	0603007A	03	MANPOWER, PERSONNEL AND TRAINING ADVANCED TECHNOLOGY	7,220	7,921	10,298		10,298
36	0603008A	03	ELECTRONIC WARFARE ADVANCED TECHNOLOGY	55,903	50,359	57,963		57,963
37	0603009A	03	TRACTOR HIKE	10,945	8,015	8,155		8,155
38	0603015A	03	NEXT GENERATION TRAINING & SIMULATION SYSTEMS	25,895	15,334	17,936		17,936
39	0603020A	03	TRACTOR ROSE	13,997	12,309	12,597		12,597
40	0603105A	03	MILITARY HIV RESEARCH	29,277	6,688	6,796		6,796
41	0603125A	03	COMBATING TERRORISM - TECHNOLOGY DEVELOPMENT	11,366	10,550	12,191		12,191
42	0603130A	03	TRACTOR NAIL			4,278		4,278
43	0603131A	03	TRACTOR EGGS			2,261		2,261
44	0603270A	03	ELECTRONIC WARFARE TECHNOLOGY	23,766	18,350	23,677		23,677
45	0603313A	03	MISSILE AND ROCKET ADVANCED TECHNOLOGY	83,649	84,553	90,602		90,602
46	0603322A	03	TRACTOR CAGE	11,741	9,986	10,315		10,315
47	0603461A	03	HIGH PERFORMANCE COMPUTING MODERNIZATION PROGRAM			183,150		183,150
48	0603606A	03	LANDMINE WARFARE AND BARRIER ADVANCED TECHNOLOGY	35,765	26,953	31,541		31,541
49	0603607A	03	JOINT SERVICE SMALL ARMS PROGRAM	8,683	9,151	7,686		7,686
50	0603710A	03	NIGHT VISION ADVANCED TECHNOLOGY	81,157	39,912	42,414		42,414
51	0603728A	03	ENVIRONMENTAL QUALITY TECHNOLOGY DEMONSTRATIONS	16,584	15,878	15,959		15,959
52	0603734A	03	MILITARY ENGINEERING ADVANCED TECHNOLOGY	40,423	27,393	36,516		36,516

Line No	Program Element Number	Act	Item	Thousands of Dollars FY2010	FY2011	FY2012	FY2012 OCO	FY2012 Total
53	0603772A	03	ADVANCED TACTICAL COMPUTER SCIENCE AND SENSOR TECHNOLOGY	50,856	24,873	30,600		30,600
	Total:		Advanced technology development	1,366,194	696,592	976,812	0	976,812
			Advanced Component Development and Prototypes					
54	0603024A	04	UNIQUE ITEM IDENTIFICATION (UID)	1,990				
55	0603305A	04	ARMY MISSLE DEFENSE SYSTEMS INTEGRATION	80,079	11,455	36,009		36,009
56	0603308A	04	ARMY SPACE SYSTEMS INTEGRATION	126,189	27,551	9,612		9,612
57	0603327A	04	AIR AND MISSILE DEFENSE SYSTEMS ENGINEERING	165,515				
58	0603619A	04	LANDMINE WARFARE AND BARRIER - ADV DEV	29,399	15,596	35,383		35,383
59	0603627A	04	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-ADV DEV	5,607	2,425	9,501		9,501
60	0603639A	04	TANK AND MEDIUM CALIBER AMMUNITION	33,202	42,183	39,693		39,693
61	0603653A	04	ADVANCED TANK ARMAMENT SYSTEM (ATAS)	96,269	136,302	101,408		101,408
62	0603747A	04	SOLDIER SUPPORT AND SURVIVABILITY	40,392	76,456	9,747		9,747
63	0603766A	04	TACTICAL ELECTRONIC SURVEILLANCE SYSTEM - ADV DEV	17,023	17,962	5,766		5,766
64	0603774A	04	NIGHT VISION SYSTEMS ADVANCED DEVELOPMENT	8,000				
65	0603779A	04	ENVIRONMENTAL QUALITY TECHNOLOGY - DEM/VAL	20,203	4,695	4,946		4,946
66	0603782A	04	WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	164,014	190,903	297,955		297,955
67	0603790A	04	NATO RESEARCH AND DEVELOPMENT	4,848	5,060	4,765		4,765
68	0603801A	04	AVIATION - ADV DEV	13,177	8,355	7,107		7,107
69	0603804A	04	LOGISTICS AND ENGINEER EQUIPMENT - ADV DEV	56,153	80,490	19,509		19,509
70	0603805A	04	COMBAT SERVICE SUPPORT CONTROL SYSTEM EVALUATION AND ANALYSIS	9,898	14,290	5,258		5,258
71	0603807A	04	MEDICAL SYSTEMS - ADV DEV	32,851	28,132	34,997		34,997
72	0603827A	04	SOLDIER SYSTEMS - ADVANCED DEVELOPMENT	75,833	48,323	19,598		19,598
73	0603850A	04	INTEGRATED BROADCAST SERVICE	1,469	970	1,496		1,496
74	0604115A	04	TECHNOLOGY MATURATION INITIATIVES			10,181		10,181
75	0604131A	04	TRACTOR JUTE			15,609		15,609
76	0604284A	04	JOINT COOPERATIVE TARGET IDENTIFICATION - GROUND (JCTI-G) / TECHNOLOG			41,652		41,652
77	0305205A	04	ENDURANCE UAVS		93,000	42,892		42,892
	Total:		Advanced Component Development and Prototypes	982,111	804,148	753,084	0	753,084

Line No	Program Element Number	Act	Item	Thousands of Dollars FY2010	FY2011	FY2012	FY2012 OCO	FY2012 Total
			System Development and Demonstration					
78	0604201A	05	AIRCRAFT AVIONICS	76,491	89,210	144,687		144,687
79	0604220A	05	ARMED, DEPLOYABLE HELOS	61,643	72,550	166,132		166,132
80	0604270A	05	ELECTRONIC WARFARE DEVELOPMENT	168,496	177,669	101,265		101,265
81	0604280A	05	JOINT TACTICAL RADIO		784			
82	0604321A	05	ALL SOURCE ANALYSIS SYSTEM	12,562	30,674	17,412		17,412
83	0604328A	05	TRACTOR CAGE	20,564	23,194	26,577		26,577
84	0604601A	05	INFANTRY SUPPORT WEAPONS	64,930	80,337	73,728		73,728
85	0604604A	05	MEDIUM TACTICAL VEHICLES	5,460	3,710	3,961		3,961
86	0604609A	05	SMOKE, OBSCURANT AND TARGET DEFEATING SYS - ENG DEV	939	5,335			
87	0604611A	05	JAVELIN		9,999	17,340		17,340
88	0604622A	05	FAMILY OF HEAVY TACTICAL VEHICLES	8,072	3,519	5,478		5,478
89	0604633A	05	AIR TRAFFIC CONTROL	8,453	9,892	22,922		22,922
90	0604642A	05	LIGHT TACTICAL WHEELED VEHICLES	1,140	1,990			
91	0604646A	05	NON-LINE OF SIGHT LAUNCH SYSTEM	88,205	81,247			
92	0604660A	05	FCS MANNED GRD VEHICLES & COMMON GRD VEHICLE	231,103				
93	0604661A	05	FCS SYSTEMS OF SYSTEMS ENGR & PROGRAM MGMT	847,011	568,711	383,872		383,872
94	0604662A	05	FCS RECONNAISSANCE (UAV) PLATFORMS	92,444	50,304			
95	0604663A	05	FCS UNMANNED GROUND VEHICLES	122,418	249,948	143,840		143,840
96	0604664A	05	FCS UNATTENDED GROUND SENSORS	39,664	7,515	499		499
97	0604665A	05	FCS SUSTAINMENT & TRAINING R&D	685,524	610,389			
98	0604710A	05	NIGHT VISION SYSTEMS - ENG DEV	56,992	52,549	59,265		59,265
99	0604713A	05	COMBAT FEEDING, CLOTHING, AND EQUIPMENT	2,010	2,118	2,075		2,075
100	0604715A	05	NON-SYSTEM TRAINING DEVICES - ENG DEV	29,187	27,756	30,021		30,021
101	0604716A	05	TERRAIN INFORMATION - ENG DEV			1,596		1,596
102	0604741A	05	AIR DEFENSE COMMAND, CONTROL AND INTELLIGENCE - ENG DEV	32,450	34,209	83,010		83,010
103	0604742A	05	CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	32,126	30,291	28,305		28,305
104	0604746A	05	AUTOMATIC TEST EQUIPMENT DEVELOPMENT	11,737	14,041	14,375		14,375
105	0604760A	05	DISTRIBUTIVE INTERACTIVE SIMULATIONS (DIS) - ENG DEV	15,184	15,547	15,803		15,803
106	0604778A	05	POSITIONING SYSTEMS DEVELOPMENT (SPACE)	7,275				

Appropriation: 2040 A RDT&E, Army

10-Feb-2011

Line No	Program Element Number	Act	Item	Thousands of Dollars FY2010	FY2011	FY2012	FY2012 OCO	FY2012 Total
107	0604780A	05	COMBINED ARMS TACTICAL TRAINER (CATT) CORE	25,241	27,670	22,226		22,226
108	0604802A	05	WEAPONS AND MUNITIONS - ENG DEV	99,626	24,345	13,828		13,828
109	0604804A	05	LOGISTICS AND ENGINEER EQUIPMENT - ENG DEV	35,046	41,039	251,104		251,104
110	0604805A	05	COMMAND, CONTROL, COMMUNICATIONS SYSTEMS - ENG DEV	57,040	90,736	137,811		137,811
111	0604807A	05	MEDICAL MATERIEL/MEDICAL BIOLOGICAL DEFENSE EQUIPMENT - ENG DEV	37,572	34,474	27,160		27,160
112	0604808A	05	LANDMINE WARFARE/BARRIER - ENG DEV	89,064	95,577	87,426		87,426
113	0604814A	05	ARTILLERY MUNITIONS - EMD	40,856	26,371	42,627		42,627
114	0604817A	05	COMBAT IDENTIFICATION	7,740	29,884			
115	0604818A	05	ARMY TACTICAL COMMAND & CONTROL HARDWARE & SOFTWARE	72,820	60,970	123,935		123,935
116	0604820A	05	RADAR DEVELOPMENT			2,890		2,890
117	0604822A	05	GENERAL FUND ENTERPRISE BUSINESS SYSTEM (GFEBS)	23,712	13,576	794		794
118	0604823A	05	FIREFINDER	19,534	24,736	10,358		10,358
119	0604827A	05	SOLDIER SYSTEMS - WARRIOR DEM/VAL	20,602	20,886	48,309		48,309
120	0604854A	05	ARTILLERY SYSTEMS - EMD	152,935	53,624	120,146		120,146
121	0604869A	05	PATRIOT/MEADS COMBINED AGGREGATE PROGRAM (CAP)	570,831	467,139	406,605		406,605
122	0604870A	05	NUCLEAR ARMS CONTROL MONITORING SENSOR NETWORK	6,860	7,276	7,398		7,398
123	0605013A	05	INFORMATION TECHNOLOGY DEVELOPMENT	108,146	23,957	37,098		37,098
124	0605018A	05	ARMY INTEGRATED MILITARY HUMAN RESOURCES SYSTEM (A-IMHRS)		100,500	68,693		68,693
125	0605450A	05	JOINT AIR-TO-GROUND MISSILE (JAGM)	118,459	130,340	127,095		127,095
126	0605455A	05	SLAMRAAM		23,700	19,931		19,931
127	0605456A	05	PAC-3/MSE MISSILE		62,500	88,993		88,993
128	0605457A	05	ARMY INTEGRATED AIR AND MISSILE DEFENSE (AIAMD)		251,124	270,607		270,607
129	0605625A	05	MANNED GROUND VEHICLE	76,861	934,366	884,387		884,387
130	0605626A	05	AERIAL COMMON SENSOR		211,500	31,465		31,465
131	0303032A	05	TROJAN - RH12		3,697	3,920		3,920
132	0304270A	05	ELECTRONIC WARFARE DEVELOPMENT		21,571	13,819		13,819
	Total:		System Development and Demonstration	4,285,025	5,035,046	4,190,788	0	4,190,788
			Management support					
133	0604256A	06	THREAT SIMULATOR DEVELOPMENT	23,120	26,158	16,992		16,992

Appropriation: 2040 A RDT&E, Army

10-Feb-2011

Line No	Program Element Number	Act	Item	Thousands of Dollars FY2010	FY2011	FY2012	FY2012 OCO	FY2012 Total
134	0604258A	06	TARGET SYSTEMS DEVELOPMENT	13,183	8,614	11,247		11,247
135	0604759A	06	MAJOR T&E INVESTMENT	49,942	42,102	49,437		49,437
136	0605103A	06	RAND ARROYO CENTER	17,257	20,492	20,384		20,384
137	0605301A	06	ARMY KWAJALEIN ATOLL	157,391	163,788	145,606		145,606
138	0605326A	06	CONCEPTS EXPERIMENTATION PROGRAM	26,168	17,704	28,800		28,800
139	0605502A	06	SMALL BUSINESS INNOVATIVE RESEARCH	273,678				
140	0605601A	06	ARMY TEST RANGES AND FACILITIES	346,015	393,937	262,456	8,513	270,969
141	0605602A	06	ARMY TECHNICAL TEST INSTRUMENTATION AND TARGETS	82,054	59,040	70,227		70,227
142	0605604A	06	SURVIVABILITY/LETHALITY ANALYSIS	44,728	41,812	43,483		43,483
143	0605605A	06	DOD HIGH ENERGY LASER TEST FACILITY	7,307	4,710	18		18
144	0605606A	06	AIRCRAFT CERTIFICATION	3,745	5,055	5,630		5,630
145	0605702A	06	METEOROLOGICAL SUPPORT TO RDT&E ACTIVITIES	8,173	7,185	7,182		7,182
146	0605706A	06	MATERIEL SYSTEMS ANALYSIS	20,970	18,078	19,669		19,669
147	0605709A	06	EXPLOITATION OF FOREIGN ITEMS	5,403	5,460	5,445		5,445
148	0605712A	06	SUPPORT OF OPERATIONAL TESTING	78,360	68,191	68,786		68,786
149	0605716A	06	ARMY EVALUATION CENTER	63,961	61,450	63,302		63,302
150	0605718A	06	ARMY MODELING & SIM X-CMD COLLABORATION & INTEG	5,885	3,926	3,420		3,420
151	0605801A	06	PROGRAMWIDE ACTIVITIES	76,503	73,685	83,054		83,054
152	0605803A	06	TECHNICAL INFORMATION ACTIVITIES	77,926	48,309	63,872		63,872
153	0605805A	06	MUNITIONS STANDARDIZATION, EFFECTIVENESS AND SAFETY	84,951	53,338	57,142		57,142
154	0605857A	06	ENVIRONMENTAL QUALITY TECHNOLOGY MGMT SUPPORT	4,991	3,195	4,961		4,961
155	0605898A	06	MANAGEMENT HQ - R&D	15,772	16,154	17,558		17,558
156	0909980A	06	JUDGMENT FUND REIMBURSEMENT	226				
157	0909999A	06	FINANCING FOR CANCELLED ACCOUNT ADJUSTMENTS	106				
	Total:		Management support	1,487,815	1,142,383	1,048,671	8,513	1,057,184
			Operational system development					
158	0603778A	07	MLRS PRODUCT IMPROVEMENT PROGRAM	26,624	51,619	66,641		66,641
159	0603820A	07	WEAPONS CAPABILITY MODIFICATIONS UAV			24,142		24,142
160	0102419A	07	AEROSTAT JOINT PROJECT OFFICE	317,132	372,493	344,655		344,655

Appropriation: 2040 A RDT&E, Army

10-Feb-2011

Line No	Program Element Number	Act	Item	Thousands of Dollars FY2010	FY2011	FY2012	FY2012 OCO	FY2012 Total
161	0203347A	07	INTELLIGENCE SUPPORT TO CYBER (ISC) MIP		2,360			
162	0203726A	07	ADV FIELD ARTILLERY TACTICAL DATA SYSTEM	29,127	24,622	29,546		29,546
163	0203735A	07	COMBAT VEHICLE IMPROVEMENT PROGRAMS	169,400	204,481	53,307		53,307
164	0203740A	07	MANEUVER CONTROL SYSTEM	36,131	25,540	65,002		65,002
165	0203744A	07	AIRCRAFT MODIFICATIONS/PRODUCT IMPROVEMENT PROGRAMS	240,321	134,999	163,205		163,205
166	0203752A	07	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM	767	710	823		823
167	0203758A	07	DIGITIZATION	8,218	6,329	8,029		8,029
168	0203759A	07	FORCE XXI BATTLE COMMAND, BRIGADE AND BELOW (FBCB2)		3,935			
169	0203801A	07	MISSILE/AIR DEFENSE PRODUCT IMPROVEMENT PROGRAM	37,731	24,280	44,560		44,560
170	0203802A	07	OTHER MISSILE PRODUCT IMPROVEMENT PROGRAMS	3,979				
171	0203808A	07	TRACTOR CARD	19,249	14,870	42,554		42,554
172	0208053A	07	JOINT TACTICAL GROUND SYSTEM	13,189	12,403	27,630		27,630
173	0208058A	07	JOINT HIGH SPEED VESSEL (JHSV)	2,961	3,153	3,044		3,044
174	0301359A	07	SPECIAL ARMY PROGRAM					
175	0303028A	07	SECURITY AND INTELLIGENCE ACTIVITIES	17,348		2,854		2,854
176	0303140A	07	INFORMATION SYSTEMS SECURITY PROGRAM	61,313	118,090	61,220		61,220
177	0303141A	07	GLOBAL COMBAT SUPPORT SYSTEM	138,764	125,569	100,505		100,505
178	0303142A	07	SATCOM GROUND ENVIRONMENT (SPACE)	32,453	33,694	12,104		12,104
179	0303150A	07	WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM	13,683	13,024	23,937		23,937
180	0305204A	07	TACTICAL UNMANNED AERIAL VEHICLES	262,655	54,300	40,650		40,650
181	0305208A	07	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	191,253	119,202	44,198		44,198
182	0305219A	07	MQ-1 SKY WARRIOR A UAV		123,156	137,038		137,038
183	0305232A	07	RQ-11 UAV		1,599	1,938		1,938
184	0305233A	07	RQ-7 UAV		7,805	31,940		31,940
185	0307207A	07	AERIAL COMMON SENSOR (ACS)	115,432				
186	0307665A	07	BIOMETRICS ENABLED INTELLIGENCE		14,114	15,018		15,018
187	0708045A	07	END ITEM INDUSTRIAL PREPAREDNESS ACTIVITIES	106,259	61,098	59,297		59,297
	Total:		Operational system development	1,843,989	1,553,445	1,403,837	0	1,403,837

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

10-Feb-2011

Line No	Program Element Number	Act	Item	Thousands of Dollars FY2010	FY2011	FY2012	FY2012 OCO	FY2012 Total
Total:	RDT&E, Army			11,706,929	10,479,851	9,679,444	8,513	9,687,957

Master Program Element Table of Contents (by Budget Activity then Line Item Number)

Budget Activity 05: Development & Demonstration (SDD)
Appropriation 2040: Research, Development, Test & Evaluation, Army

Budget Activity 05: Development & Demonstration (SDD)
Appropriation 2040: Research, Development, Test & Evaluation, Army

Master Program Element Table of Contents (Alphabetically by Program Element Title)

Army • President's Budget FY 2012 • RDT&E Program
Master Exhibit R-1
(Listing by Budget Activity, then Program Element Number)

BA# 05: Development & Demonstration (SDD)

				Cost ($ in Millions)				
Line#	**BA#**	**PE#**	**PE Title**	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**
78	05	0604201A	AIRCRAFT AVIONICS	76.491	89.210	144.687	-	144.687
79	05	0604220A	Armed, Deployable Helos	61.643	72.550	166.132	-	166.132
80	05	0604270A	Electronic Warfare Development	168.496	172.269	101.265	-	101.265
81	05	0604280A	Joint Tactical Radio	-	0.784	-	-	-
82	05	0604321A	ALL SOURCE ANALYSIS SYSTEM	12.562	30.674	17.412	-	17.412
83	05	0604328A	TRACTOR CAGE	20.564	23.194	26.577	-	26.577
84	05	0604601A	Infantry Support Weapons	64.930	80.337	73.728	-	73.728
85	05	0604604A	MEDIUM TACTICAL VEHICLES	5.460	3.710	3.961	-	3.961
86	05	0604609A	Smoke, Obscurant and Target Defeating Sys - Eng Dev	0.939	5.335	-	-	-
87	05	0604611A	JAVELIN (AAWS-M)	-	9.999	17.340	-	17.340
88	05	0604622A	Family of Heavy Tactical Vehicles	8.072	3.519	5.478	-	5.478
89	05	0604633A	AIR TRAFFIC CONTROL	8.453	9.892	22.922	-	22.922
90	05	0604642A	LIGHT TACTICAL WHEELED VEHICLES	1.140	1.990	-	-	-
91	05	0604646A	Non-Line of Sight Launch System	88.205	81.247	-	-	-
92	05	0604660A	FCS Manned Grd Vehicles & Common Grd Vehicle	231.103	-	-	-	-
93	05	0604661A	FCS Systems of Systems Engr & Program Mgmt	847.011	568.711	383.872	-	383.872
94	05	0604662A	FCS Reconnaissance (UAV) Platforms	92.444	50.304	-	-	-
95	05	0604663A	FCS Unmanned Ground Vehicles	122.418	249.948	143.840	-	143.840

Army • President's Budget FY 2012 • RDT&E Program
Master Exhibit R-1
(Listing by Budget Activity, then Program Element Number)

BA# 05: Development & Demonstration (SDD)

				Cost ($ in Millions)				
Line#	**BA#**	**PE#**	**PE Title**	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**
96	05	0604664A	FCS Unattended Ground Sensors	39.664	7.515	0.499	-	0.499
97	05	0604665A	FCS Sustainment & Training R&D	685.524	610.389	-	-	-
98	05	0604710A	Night Vision Systems - Eng Dev	56.992	52.549	59.265	-	59.265
99	05	0604713A	Combat Feeding, Clothing, and Equipment	2.010	2.118	2.075	-	2.075
100	05	0604715A	Non-System Training Devices - Eng Dev	29.187	27.756	30.021	-	30.021
101	05	0604716A	TERRAIN INFORMATION - ENG DEV	-	-	1.596	-	1.596
102	05	0604741A	Air Defense Command, Control and Intelligence - Eng Dev	32.450	34.209	83.010	-	83.010
103	05	0604742A	CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	32.126	30.291	28.305	-	28.305
Total: Development & Demonstration (SDD)				2,687.884	2,218.500	1,311.985	-	1,311.985

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	76.491	89.210	144.687	-	144.687	177.218	214.390	161.111	161.700	Continuing	Continuing
C97: *ACFT AVIONICS*	76.491	89.210	144.687	-	144.687	177.218	214.390	161.111	161.700	Continuing	Continuing

Note

Change Summary Explanation:
Funding Changes:
FY12 Changes: +$11.900 for Aviation Data Exploitation Capability (ADEC) and Aircraft Notebook (ACN)

A. Mission Description and Budget Item Justification

FY 2012 budget request funds the development of Aircraft Avionics systems required to horizontally and vertically integrate the battlefield and the integration of those systems into Army aircraft. Tasks in this Project support research, development, and test efforts in the Engineering and Manufacturing Development (EMD) phases of these systems.

Aviation Tactical Communication Systems (ATCS) is an Army Aviation Program to test the Alternative Communications (Alt Comms) (ARC-231) A-Kit (hardware and software) and the Joint Tactical Radio System (JTRS) hardware on the CH-47F, AH-64D, and the Unmanned Aircraft System (UAS) Shadow aircraft. The JTRS is the transformational system that provides Army Aviation interoperability capability for Future Force and Joint Force operations.

A delay in the JTRS Cluster 1 program resulted in a lack of critical communications equipment to support modernized Army Aviation aircraft production line requirements and Alt Comms was initiated to mitigate this issue. Alt Comms provides two ARC-231 and two ARC-201D radios with power amplifiers to meet the minimum interim JTRS requirements for Military Satellite Communications, Single Channel Ground and Airborne Radio System (SINCGARS), HAVEQUICK, Very High Frequency (VHF), Air Traffic Control (ATC), and Land Mobile Radio requirements and funds the integration and test of the radios onto each platform.

Alt Comms will be Army Aviation's communication solution until it is supplemented by the JTRS Airborne Maritime Fixed (AMF) Small Airborne (SA) radio set, beginning in FY15. Increment 1 of the AMF SA will provide the Wideband Networking Waveform, Soldier Radio Waveform, and Link-16 required for interoperation with the Future Force. Increment 2 of the AMF SA, planned for FY20, will replace the Alt Comms suite and provide legacy waveforms allowing a single hardware solution. JTRS integration efforts planned for FY12 are initiating development of common antennas, conducting platform antenna on-site analysis, continuing development of reusable control software to be provided to JTRS integrators, and continuing integration into the AH-64D resulting in a technical design review. Additionally, begin risk reduction activities for Small Form Factor-B (SFF-B) integration onto Shadow UAS.

The Improved Data Modem (IDM) is the common solution for digitizing Army Aviation. It performs as an internet controller and gateway to Tactical Internet and Fire Support internet for Army aircraft. With interfaces supporting a six channel transmit/receive terminal, the IDM provides radio connectivity to the ARC-201D/231, ARC-186, ARC-164, and the Blue Force Tracker's (BFT) MT-2011 and AVX-06/203 Transceivers. IDM provides a flexible, software driven digital messaging system that is interoperable with existing Army and Joint forces battlefield operating systems. The IDM provides Situational Awareness and Variable Message Format

messages capability to the cockpit. FY12 funds are required to continue development and testing of Joint Battle Command-Platform (Aviation) (JBC-P(A)) and continue development of an Open Systems Architecture (OSA) IDM solution compatible with the AH-64D, CH-47F, and HH/UH-60M. This effort provides the foundation to develop and qualify a new hardware architecture to host IDM and middleware applications to ensure interoperability on the future digital battlefield.

The Joint Precision Approach and Landing System (JPALS) is a precision approach and landing system providing joint operational capability for U.S. forces assigned to conventional and special operations missions including those operating from fixed base, ship, tactical, and special mission environments under a wide range of meteorological and jamming conditions. The JPALS effort in this project evaluates technical approaches, develops the aircraft avionics equipment for operation with the JPALS sea-based and ground systems, and integrates the avionics equipment into the various Army Aviation platforms. Increment 1 has now been split into Increment 1A (Sea Based development and test) and Increment 1B (aircraft avionics development, integration, and test). The Army's involvement in Increment 1A/1B is to address Army requirements, participate in program management and provide systems engineering, and participate in the Aircraft Integration Guide (AIG) effort which will provide early coordination and interface requirements between the sea-based system and the air component. Additionally, JPALS Army Risk Reduction (JARR) activities continue with the JPALS Common Avionics Technology Development (JCATD) efforts.

ARC-220 radio improvements are required to increase operational capability and resolve emerging obsolescence issues. Software improvements will provide a quick Automatic Linking Process which will reduce the time for the radio to establish a communication link by more than 50%, improve secure voice reliability, and add automatic position reporting capability. FY1

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	89.508	89.210	132.787	-	132.787
Current President's Budget	76.491	89.210	144.687	-	144.687
Total Adjustments	-13.017	-	11.900	-	11.900
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	10.000	-			
• SBIR/STTR Transfer	3.017	-			
• Adjustments to Budget Years	-	-	11.900	-	11.900
• Other Adjustments 1	-26.034	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*	PROJECT C97: *ACFT AVIONICS*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
C97: *ACFT AVIONICS*	76.491	89.210	144.687	-	144.687	177.218	214.390	161.111	161.700	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

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Alt Comms will be Army Aviation's communication solution until it is supplemented by the JTRS Airborne Maritime Fixed (AMF) Small Airborne (SA) radio set, beginning in FY15. Increment 1 of the AMF SA will provide the Wideband Networking Waveform, Soldier Radio Waveform, and Link-16 required for interoperation with the Future Force. Increment 2 of the AMF SA, planned for FY20, will replace the Alt Comms suite and provide legacy waveforms allowing a single hardware solution. JTRS integration efforts planned for FY12 are initiating development of common antennas, conducting platform antenna on-site analysis, continuing development of reusable control software to be provided to JTRS integrators, and continuing integration into the AH-64D resulting in a technical design review. Additionally, begin risk reduction activities for Small Form Factor-B (SFF-B) integration onto Shadow UAS.

The Improved Data Modem (IDM) is the common solution for digitizing Army Aviation. It performs as an internet controller and gateway to Tactical Internet and Fire Support internet for Army aircraft. With interfaces supporting a six channel transmit/receive terminal, the IDM provides radio connectivity to the ARC-201D/231, ARC-186, ARC-164, and the Blue Force Tracker's (BFT) MT-2011 and AVX-06/203 Transceivers. IDM provides a flexible, software driven digital messaging system that is interoperable with existing Army and Joint forces battlefield operating systems. The IDM provides Situational Awareness and Variable Message Format messages capability to the cockpit. FY12 funds are required to continue development and testing of Joint Battle Command-Platform (Aviation) (JBC-P(A)) and continue development of an Open Systems Architecture (OSA) IDM solution compatible with the AH-64D, CH-47F, and HH/UH-60M. This effort provides the foundation to develop and qualify a new hardware architecture to host IDM and middleware applications to ensure interoperability on the future digital battlefield.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*	**PROJECT** C97: *ACFT AVIONICS*

The Joint Precision Approach and Landing System (JPALS) is a precision approach and landing system providing joint operational capability for U.S. forces assigned to conventional and special operations missions including those operating from fixed base, ship, tactical, and special mission environments under a wide range of meteorological and jamming conditions. The JPALS effort in this project evaluates technical approaches, develops the aircraft avionics equipment for operation with the JPALS sea-based and ground systems, and integrates the avionics equipment into the various Army Aviation platforms. Increment 1 has now been split into Increment 1A (Sea Based development and test) and Increment 1B (aircraft avionics development, integration, and test). The Army's involvement in Increment 1A/1B is to address Army requirements, participate in program management and provide systems engineering, and participate in the Aircraft Integration Guide (AIG) effort which will provide early coordination and interface requirements between the sea-based system and the air component. Additionally, JPALS Army Risk Reduction (JARR) activities continue with the JPALS Common Avionics Technology Development (JCATD) efforts.

ARC-220 radio improvements are required to increase operational capability and resolve emerging obsolescence issues. Software improvements will provide a quick Automatic Linking Process which will reduce the time for the radio to establish a communication link by more than 50%, improve secure voice reliability, and add automatic position reporting capability. FY11 funds will complete ARC-220 software and test system changes.

The Aviation Mission Planning System (AMPS) interfaces with Army Battle Command Systems (ABCS) and initializes communication, navigation, situational awareness, and weapons systems on fleet aircraft. This effort will develop XPlan core mission planning software, integrate it into AMPS, and modify the Aircraft Weapons and Electronics (AWE) modules that will interact with XPlan.

A requirement exists for Apache Block III to be interoperable through the future force network. Funds are included for the integration of the selected middleware into the Apache Block III to support the Army Common Operating Environment convergence. This includes the non-recurring engineering for integration, test, and air worthiness qualification. FY12 funds are to begin integration of the selected middleware into Apache Block III to support the Army Common Operating Environment convergence.

The Aviation Data Exploitation Capability (ADEC) is an Army Aviation program to develop, integrate, and test specific capabilities needed at the Aviation unit level to implement and support improvements within aviation maintenance, operations, safety and training. ADEC will standardize data and information formats, consolidate disconnected and disparate systems containing redundant data and requiring duplicate data entry, and provide a comprehensive and fully integrated automated information system. ADEC provides a common and interoperable capability required to implement Condition Based Maintenance, Military Flight Operations Quality Assurance, and Platform Maintenance Environment processes. FY12 funds are required to design, develop, integrate and test an ADEC system.

The Aircraft Notebook (ACN) will provide users with an aviation centric suite of software utilized for streamlined documentation and completion of aviation maintenance activities. ACN will include the hardware solution as well as the digital logbook functionality and legacy software applications. ACN will reduce the Information Technology (IT) footprint within an aviation unit by integrating multiple pieces of software onto one piece of hardware.

The Helicopter Terrain Avoidance and Warning System (HTAWS) will develop, integrate, and test technology to reduce the risks of Degraded Visual Environment resulting in Controlled Flight into Terrain. The system will be integrated on CH-47F, AH-64D, OH-58D, and UH-60 modernized aircraft.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*	PROJECT C97: *ACFT AVIONICS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: ARC-220 Product Development	3.288	0.500	-
Articles:	0	0	
Description: ARC-220 radio improvements are required to increase operational capability and resolve emerging obsolescence issues. Software imporvements will provide a quick Automatic Linking Process which will reduce the time for the radio to establish a communication link by more than 50%, improve secure voice reliability, and add automatic position reporting capability. ***FY 2010 Accomplishments:*** Upgrade the ARC-220 software: Specific enhancements include Improved Link Quality Analysis algorithms, Automatic Position Reporting, Update GPS Position for Position Reports, Position Report Data Assurance, Enhanced Built In Test (BIT) fault isolation, Full Military Grid Reference System (MGRS) coordinate in position reports, Display link frequency on Control Display Unit (CDU), Army Quick Call (AQC) Automatic Link Establishment (ALE), CDU setup page enhancements, Increase Radio Self Address Capability, Modify Global Positioning System (GPS) Time at Power Up, and Mute ALE Tones when Linked. ***FY 2011 Plans:*** Conduct testing and evaluation required to complete the ARC-220 Software Enhancements.			
Title: JTRS AMF A A-Kit development, integration, and system testing for AH-64D and Shadow Unmanned Aerial System (UAS).	28.496	20.040	35.030
Articles:	0	0	
Description: Joint Tactical Radio System (JTRS) Airborne Maritime Fixed (AMF) Small Airborne radio set will supplement Alt Comms beginning in FY15. Increment 1 of the AMF SA will provide Wideband Networking Waveform (WNW), Soldier Radio Waveform (SRW), and Link-16 required for interoperation with the Future Force. Increment 2 of the AMF SA, planned for FY20, will replace the Alt Comms suite and provide legacy waveforms allowing a single hardware solution. ***FY 2010 Accomplishments:*** Procured 32 AMF Engineering Design Models for use in aircraft integration programs. Conducted SDD Apache Block 3 (AB3) AMF/Link 16 integration activities leading to an AB3 Link 16 Design Review event. Initiated Risk Reduction activities to integrate AMF radios into UH-60M and CH-47F aircraft. Initiated development of a common control software for integration of AMF radios into Army Aviation Platforms. Initiated SRW/WNW antenna characterization/development activity. ***FY 2011 Plans:*** Begin development of common antennas, conducting platform on-site antenna analysis, continuing development of reusable control software to be provided to JTRS integrators, and continuing integration into the AH-64D, resulting in a technical design review. Additionally, will begin risk reduction activities for AMF integration of the Small Form Fit Radio Set onto Shadow UAS. ***FY 2012 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*	PROJECT C97: *ACFT AVIONICS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue development of Link 16 integration into Apache Block 3 to support a Lot 4 Critical Design Review (CDR).			
Title: Alt Comms A-Kit development, integration, and system testing for AH-64D, CH-47F, and UH-60M ***Articles:*** ***Description:*** A delay in the JTRS Cluster 1 program resulted in a lack of critical communications equipment to support modernized Army Aviation aircraft production line requirements and Alt Comms was initiated to mitigate this issue. Alt Comms provides two ARC-231 and two ARC-201D radios with power amplifiers to meet the interim JTRS requirements for Military Satellite Communications, Single Channel Ground and AIrborne Radio System (SINCGARS), HAVEQUICK, Very HIgh Frequency (VHF), AIr Traffic Control (ATC), and Land Mobile Radio requirements and funds the integration and test of the radios onto each platform. ***FY 2010 Accomplishments:*** Conduct CH-47F Demand Assigned Multiple Access Improved Waveform (DAMA IW) Phase I and II, which will upgrade the Common Avionics Architecture System (CAAS) Comms SW Partition to incorporate modifications required to implement additional ARC-231 DAMA IW Phases I and II capabilities; CH-47F software partition, which will continue efforts to develop common software for reuse during communications integration activities on CAAS and other platforms; and Software Application Programming Interface (API) to develop an API that enables the reusable comms software to interact with other software and software-defined radios.	12.297 0	-	-
Title: Joint Precision Approach and Landing System (JPALS) ***Articles:*** ***Description:*** The Joint Precision Approach and Landing System (JPALS) introduces 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 special mission environments under a wide range of meteorological and jamming conditions. ***FY 2010 Accomplishments:*** Continue to develop and define requirements and interfaces between the JPALS Sea-Based system and the air components. The Air Integration Guide (AIG) provides a list of options to be considered for implementation of JPALS capabilities in the Aircraft System (AS) to include reference and amplifying documents such as AS Spec, External Interface Requirements Specification (EIRS), and Algorithm Description Documents (ADD). Continue the AIG effort for UH-60M and CH-47F. ***FY 2011 Plans:***	12.560 0	17.954 0	30.230

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*	PROJECT C97: *ACFT AVIONICS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue Increment II waveform definitization, development of a Ground Based Local Area Augmentation System (LAAS), and developing a common JPALS solution for the fixed wing Land-Based Differential GPS (LDGPS) ***FY 2012 Plans:*** Complete the AIG effort related to the AH-64D platform, Block III. Begin the Local Area Differential Global Positioning System (LDGPS) AIG effort. Initiate Non-Recurring Engineering (NRE) efforts for M code development and begins the development of the JPALS B-kit.			
Title: Improved Data Modem (IDM) ***Articles:*** ***Description:*** The Improved Data Modem (IDM) is the common solution for digitizing Army Aviation. It performs as an internet controller and gateway to Tactical internet (TI) and Fire Support (FS) internet for Army Aviation. The IDM provides radio connectivity to the ARC-201D/231, ARC-186, ARC-164 and the Blue Force Tracker (BFT) MT-2011 and AVX-06/203 transceivers. Funds are required to continue development of an Open Systems Architecture (OSA) and Joint Battle Command -Platform (Aviation) (JBC-P(A)) solution compatible with the AH-64D, CH-47F, HH/UH-60M, OH-58D. This effort provides the foundation to develop and qualify a new hardware architecture to host IDM and Army Common Operating Environment applications to ensure interoperability on the future digital battlefield. ***FY 2010 Accomplishments:*** Initial development of the Open Systems Architecure (OSA) requirements and other systems engineering activities. System specifications down through Component Item Development Specifications (CIDS) were created. The architecture was developed using model driven design which allows for incremental testing as the development was on-going. Preliminary designs were created for both hardware and software. Begin the development of Battle Command Core Asset(s) to meet Aviation operational requirements for CS 15-16. ***FY 2011 Plans:*** Continue design and development of OSA hardware and software including creation of test plans and descriptions as well as production plans. Integration of the Joint Tactical Radio System (JTRS). Development, integration, and testing of JBC-P(A) products. ***FY 2012 Plans:*** Test and evaluate IDM OSA hardware and software againt the qualification plans. Achieve Airworthiness rating and authorization to operate for the IDM OSA. Deliver engineering releases of IDM OSA hardware and software to platforms to aid integration afforts. Continue development, integration, and testing of Joint Battle Command - Platform (Aviation) (JBC-P(A)) products.	14.479 0	17.419 0	26.206
Title: Aviation Mission Planning System (AMPS)	2.354	3.003	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*	**PROJECT** C97: *ACFT AVIONICS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Articles:	0	0	
Description: The Aviation Mission Planning System (AMPS) is a mission planning.battle synchronization tool that automates aviation mission planning tasks, including tactical command and control, mission planning, and flight planning. It interfaces with Army Battle Command Systems (ABCS) and associated networks which furnish the aviation commander with continuous situational awareness, allowing the commander to rapidly adjust mission plans. The electronic formats are loaded onto the aircraft platforms, initializing the communication, navigation, situational awareness, and weapons systems on the aircraft including the AH-64 A/D, CH-47 D/F, OH-58D Kiowa Warrior, UH-60 A/L/M/Q, HH-60 L/M, and Unmanned Aerial Systems (UAS). This effort will allow for the integration of new route server, calclulation engine, and tabular editor components into the AMPS configuration and modifications to the Aircraft Weapons Electronics (AWE) modules to make use of the new components. ***FY 2010 Accomplishments:*** FY10 funds are required to design, develop, integrate and test software components needed for the XPLAN application. Software design, development, integration, and testing will focus on core applications, such as the Mission Server and updates to FalconView. Additionally, FY10 funds begin the updates required to modify platform AWEs allowing them to function in the XPLAN architecture. ***FY 2011 Plans:*** FY11 funds are required to complete design, development, integration, and test of additional software components needed for the XPLAN application. FY11 funds complete the updates required to modify platform AWEs allowing them to function in the XPLAN architecture. Additionally, FY11 funds complete development platform AWEs to support new aircraft to include the UH-60M B3, CH-47F B3, and OH-58D CDS4 B3.			
Title: Apache Block III	-	13.922	10.076
Articles:		0	
Description: A requirement exists for Apache Block III to be interoperable through the future force network. Funds are included in the project for the integration of the selected middleware into the Apache Block III to support the Army Common Operating Environment convergence. This includes the non-recurring engineering for integration, test, and air worthiness qualification. As part of the Army's migration to a net-centric fighting force, it is necessary for aircraft to access certain critical services that enable seamless access and operation on the future force network. FY12 funds are to continue integration of the selected middleware into the Apache Block III to support the Army Common Operation Environment convergence. ***FY 2011 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*	PROJECT C97: *ACFT AVIONICS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Begin integration of the selected middleware into the Apache Block III to support the Army Common Operating Environment convergence. ***FY 2012 Plans:*** Continue integration of the selected middleware into the Apache Block III to support the Army Common Operating Environment convergence.			
Title: Aviation Data Exploitation Capability (ADEC) ***Articles:*** ***Description:*** The Aviation Data Exploitation Capability (ADEC) is an Army Aviation program to develop, integrate, and test specific capabilities needed at the Aviation unit level to implement and support improvements within aviation maintenance, operations, safety and training. ADEC will standardize data and information formats, consolidate disconnected and disparate systems containing redundant data and requiring duplicate data entry, and provide a comprehensive and fully integrated automated information system. ADEC provides a common and interoperable capability required to implement Condition Based Maintenance, Military Flight Operations Quality Assurance, and Platform Maintenance Environment processes. ADEC is the transformation system required for interoperability with the Army's future logistic systems. ***FY 2011 Plans:*** FY 11 funds are required to begin design, development, integration, and testing of the hardware and software needed to realize the ADEC system. Hardware consist of the ADEC server, Military Flight Operations Quality Assurance (MFOQA) workstation, and various network enabling technologies, such as routers, switches, hubs, etc. Software design, development, integration, and testing will focus on core applications, such as the operating system, application framework, and network software. Additionally, FY 11 funds begin the advanced component development and prototyping of the baseline MFOQA applications, Aviation Maintenance Software Suite, and Centralized Aviation Flight Record System (CAFRS) integration. ***FY 2012 Plans:*** FY 12 funds are required to continue design, development, integration, and testing of the hardware and software needed to realize the ADEC system. FY 12 funds continue the advanced component development and prototyping of the baseline MFOQA applications, Aviation Maintenance Software Suite, and CAFRS integration.	-	11.246 0	12.401
Title: Aircraft Notebook (ACN) ***Description:*** The Aircraft Notebook (ACN) will provide users with an aviation centric suite of software utilized for streamlined documentation and completion of aviation maintenance activities. ACN will include the hardware solution as well as the digital	-	-	5.444

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*	PROJECT C97: *ACFT AVIONICS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
logbook functionality and legacy software applications. ACN will work towards the reduction of the IT footprint within an aviation unit by integrating multiple pieces of software onto one piece of hardware. ***FY 2012 Plans:*** FY12 funding will be utilized to begin software design, development, integration, and testing of the ACN applications.			
Title: Helicopter Terrain Avoidance and Warning System (HTAWS) ***Articles:*** ***Description:*** The Helicopter Terrain Avoidance and Warning System (HTAWS) is an OSD RMD 700 directive to develop, integrate, and test technology to reduce the risks of Degraded Visual Environment (DVE) resulting in controlled flight into terrain. The system will be integrated on CH-47F, AH-64D, OH-58D, and UH60 modernized aircraft. ***FY 2011 Plans:*** Begin development and qualification of the DVE hardware and software. ***FY 2012 Plans:*** Continue development and qualification of the DVE hardware and software.	- -	5.126 0	25.300
Title: Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) ***Articles:*** ***Description:*** SBIR/STTR ***FY 2010 Accomplishments:*** SBIR/STTR	3.017 0	-	-
Accomplishments/Planned Programs Subtotals	76.491	89.210	144.687

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• AA0700: *Airborne Avionics*	207.064	244.408								Continuing	Continuing
• AA0712: *Network and Mission Plan*			138.832		138.832		182.645	198.038	251.937	Continuing	Continuing
			132.855		132.855		166.892	183.381	137.159	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*	PROJECT C97: *ACFT AVIONICS*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• AA0723: *COMMS, NAV Surveillance*											

D. Acquisition Strategy

This project is comprised of multiple systems:

1) Alt Comms - Alt Comms is required to meet minimum acceptable near-term communications requirements as defined by the U.S. Army Aviation Center of Excellence (USAACE) to mitigate production line communications equipment gaps for modernized Army aircraft (UH-60M, CH-47F, and AH-64D). The Alt Comms acquisition strategy is to use currently available communications equipment to fill these gaps. However, this equipment must be incorporated onto the modernized aviation platforms through A-Kit development, platform hardware and software development/integration, and platform testing of the Alt Comms suite.

2) Joint Tactical Radio System (JTRS) - JTRS is a software programmable radio system that enables net-centric communications capabilities. Army Aviation is now aligned with the Airborne Maritime Fixed (AMF) JTRS program and is planning to initiate JTRS Increment 1 fielding on Apache Block III (AB3) as the lead aircraft. The CH-47F and UH-60M integration of the Increment 1 capabilities will be delayed, with initial fielding on those platforms beyond FY15. Increment 1 of the AMF JTRS program will provide the Wideband Networking Waveform (WNW), Soldier Radio Waveform (SRW), and LINK-16 required for interoperation with the Future Force. Increment 2, planned for FY20, replaces Alt Comms and will provide all legacy waveforms. These efforts will be accomplished using host platform development contracts, integration labs, and Airworthiness testing and certification.

3) IDM - Develop and qualify a new hardware architecture and integrate IDM OSA applications onto the new hardware. Develop and test Joint Battle Command-Platform (Aviation) (JBC-P(A)). These development efforts will be accomplished by the Aviation and Missile Research and Development Center's (AMRDEC) Software Engineering Directorate (SED).

4) Joint Precision Approach and Landing System (JPALS) - The Navy is the lead service for this joint program. An updated JPALS acquisition strategy separates Increment I into two increments (1A and 1B). Increment 1A provides for development, integration, and test of the shipboard system. Increment 1B provides for development, integration, and testing of the aircraft shipboard related avionics system. The Army activity in the budget years, focused on the aircraft component, is to complete the current risk reduction effort. Army Aviation avionics includes a series of JPALS Avionics Risk Reduction (JARR) sole source, cost-plus fixed fee, firm fixed price, and time and materials contracts to reduce technical risk on critical components. Army will also participate in the Air Integration Guide (AIG) effort which is part of the JPALS Increment 1A EMD contract. The JPALS Common Avionics Technology Development (JCATD) effort continues engineering, prototyping, and testing tasks that capitalize on the previous results of the JARR efforts. The output of the JARR, AIG, and JCATD contracts will be used to evaluate potential technical approaches and define the best solution. Based on that evaluation, contracts will be awarded for development, integration, and test of JPALS avionics beginning in FY 12. Development will be done through either a Cost Plus or Fixed Price Incentive contract. Aircraft platform integration and test will be accomplished using host platform contracts beginning with UH-60M.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*	PROJECT C97: *ACFT AVIONICS*

5) ARC-220 - The ARC-220 box level software improvements will be done through a sole-source cost-plus fixed fee contract with Rockwell Collins.

6) AMPS - The core Portable Flight Planning Software (PFPS) will be improved by developing new route server, calculation engine and tabular editor components in coordination with the Air Force Intelligence, Surveillance, and Reconnaissance Innovations Directorate and Unmanned Aeriel Systems Task Force (AF/A2U) and the Special Operations Forces Mission Planning Office (SOFMPO) to ensure continued interoperability with other DoD components. Army-specific components and platform-specific Aircraft Weapons Electronics modules (AWE) will be upgraded to work with new components. This contracted effort will be executed through the AMRDEC SED.

7) Apache Block III interoperability - to enable future force network interoperability. Integration of the selected middleware into the Apache Block III to support the Army Common Operating Environment convergence. This includes the non-recurring engineering for integration, test, and air worthiness qualification. As part of the Army's migration to a net-centric fighting force, it is necessary for aircraft to access certain critical services that enable seamless access and operation on the future force network. These efforts will be accomplished using host platform development contracts and AMRDEC SED.

8) ADEC- Develop and qualify new hardware and develop and integrate software applications into the new hardware. This development effort will be accomplished by various contract methods and types.

9) ACN- Develop and qualify new hardware and software applications into the hardware. ACN will integrate multiple pieces of software onto one piece of hardware. This effort will be accomplished by various contract methods and types.

10) HTAWS- Develop, integrate, and test new hardware to reduce the risks of Degraded Visual Environment resulting in Controlled Flight into Terrain. This development effort will be accomplished by various contract methods and types.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*	PROJECT C97: *ACFT AVIONICS*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Spt (JTRS)	TBD	AMCOM:Redstone Arsenal	13.478	-		-		-		-	Continuing	Continuing	Continuing
PM Spt (IDM)	TBD	AMCOM:Redstone Arsenal	1.845	0.262		0.181		-		0.181	Continuing	Continuing	Continuing
PM Spt (ACN)	TBD	AMCOM:Redstone Arsenal, AL	-	-		0.200		-		0.200	Continuing	Continuing	Continuing
PM Spt (ADEC)	TBD	AMCOM:Redstone Arsenal	-	1.500		1.385		-		1.385	Continuing	Continuing	Continuing
PM Spt (Apache Block III)	TBD	AMCOM:Redstone Arsenal	-	0.611		-		-		-	Continuing	Continuing	Continuing
PM Spt (HTAWS)	TBD	AMCOM:Redstone Arsenal	-	0.872		0.927		-		0.927	Continuing	Continuing	Continuing
Small Business Innovative Research/Small Technology Transfer (SBIR/STTR)	TBD	NA:NA	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	15.323	3.245		2.693		-		2.693			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Continue Alt Comms Demand Assigned Multiple Access Improved Waveform (DAMA IW) Phases I & II.	SS/CPFF	Rockwell Collins:...	242.257	-		-		-		-	Continuing	Continuing	0.000
JTRS Engineering Design Model (EDM) development & testing	C/CPFF	Lockheed Martin:...	13.500	2.486		-		-		-	Continuing	Continuing	Continuing
ARC-220 operational capability improvements	SS/CPFF	Rockwell Collins:...	-	2.195		-		-		-	Continuing	Continuing	Continuing
Develop and qualify OSA hardware to host IDM (IDM)	Various	Various:Various	3.300	10.157		18.025		-		18.025	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*	PROJECT C97: *ACFT AVIONICS*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JPALS Avionics Risk Reduction (JARR) (JPALS)/B-Kit Development	C/CPFF	Honeywell:Honeywell	0.577	3.979		24.990		-		24.990	Continuing	Continuing	Continuing
Air Integration Guides (AIG) (JPALS)	SS/CPFF	Boeing:...	1.896	1.700		1.743		-		1.743	Continuing	Continuing	Continuing
JPALS Common Avionics Technology Development (JCATD) (JPALS)	C/CPFF	Honeywell:...	5.938	7.607		-		-		-	Continuing	Continuing	Continuing
JBC-P(A) development and testing (IDM)	TBD	TBD:TBD	-	6.000		5.000		-		5.000	Continuing	Continuing	Continuing
Tri-Service XPlan component integration/AWE modifications (AMPS)	Various	Software Engineering Directorate:Redstone Arsenal, AL	-	2.663		-		-		-	Continuing	Continuing	Continuing
Middleware integration onto Apache Block III	TBD	TBD:TBD	-	13.311		10.076		-		10.076	Continuing	Continuing	Continuing
Design, develop, and integrate ADEC software and hardware	TBD	Various:Various	-	7.763		8.442		-		8.442	Continuing	Continuing	Continuing
JTRS LINK-16 Integration (AH-64D)	SS/CPFF	Boeing:...	-	14.242		35.030		-		35.030	Continuing	Continuing	Continuing
Develop and qualify the DVE hardware and software (HTAWS)	TBD	TBD:TBD	-	4.254		24.373		-		24.373	Continuing	Continuing	Continuing
JTRS Shadow Development and Testing	SS/CPFF	AAI Corporation:...	-	3.312		2.350		-		2.350	Continuing	Continuing	Continuing
Design, develop, and integrate ACN software and hardware	TBD	Various:Various	-	-		2.800		-		2.800	0.000	2.800	0.000
		Subtotal	267.468	79.669		132.829		-		132.829			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*	PROJECT C97: *ACFT AVIONICS*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering, Logistics, and Technical Support (JPALS)	TBD	Various:Various	6.677	1.573		1.147		-		1.147	Continuing	Continuing	Continuing
System Engineering, Logistics, and Technical Support (ADEC)	TBD	Various:Various	-	1.314		1.337		-		1.337	Continuing	Continuing	Continuing
System Engineering, Logistics, and Technical Support (ACN)	TBD	Various:Various	-	-		1.591		-		1.591	0.000	1.591	Continuing
Data (ADEC)	TBD	TBD:TBD	-	0.487		0.495		-		0.495	Continuing	Continuing	Continuing
Data (ACN)	TBD	TBD:TBD	-	-		0.272		-		0.272	Continuing	Continuing	Continuing
		Subtotal	6.677	3.374		4.842		-		4.842			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation (JPALS)	TBD	Various:Various	0.651	0.900		-		-		-	Continuing	Continuing	Continuing
Test and Evaluation (AMPS)	TBD	ATTC; ATEC:Ft. Rucker, AL; Arlington, VA	-	0.340		-		-		-	Continuing	Continuing	Continuing
Test and Evaluation (ARC-220)	TBD	Various:Various	-	0.500		-		-		-	Continuing	Continuing	Continuing
ASIF Test Lab (IDM)	TBD	AMCOM:Redstone Arsenal, AL	-	1.000		3.000		-		3.000	Continuing	Continuing	Continuing
Test and Evaluation (ACN)	TBD	Various:Various	-	-		0.581		-		0.581	Continuing	Continuing	Continuing
Test and Evaluation (ADEC)	TBD	TBD:TBD	-	0.182		0.742		-		0.742	Continuing	Continuing	Continuing
		Subtotal	0.651	2.922		4.323		-		4.323			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*	PROJECT C97: *ACFT AVIONICS*

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	290.119	89.210		144.687		-		144.687			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*	**PROJECT** C97: *ACFT AVIONICS*

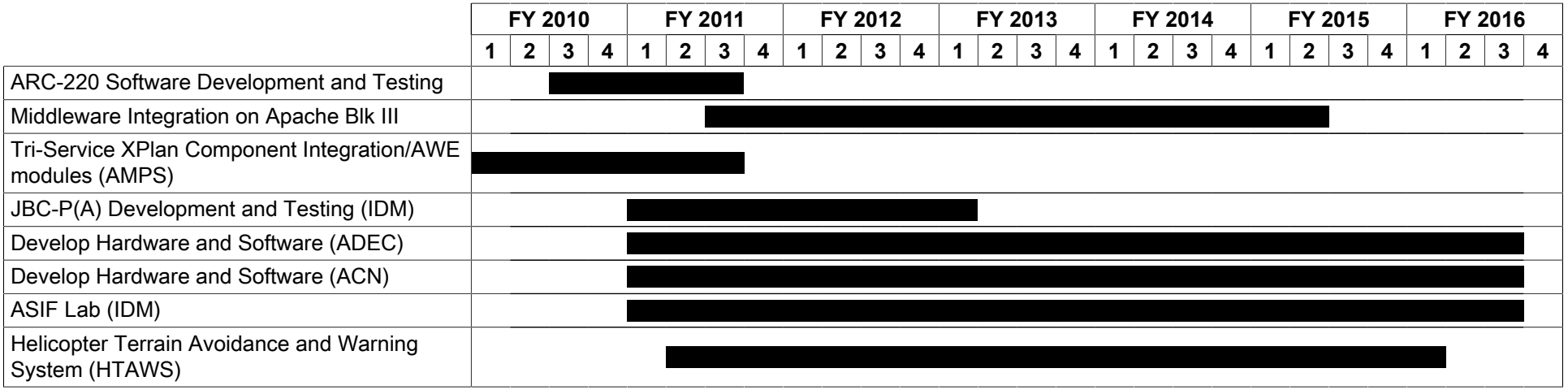

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*	**PROJECT** C97: *ACFT AVIONICS*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ARC-220 Software Development and Testing	3	2010	3	2011
Middleware Integration on Apache Blk III	3	2011	2	2015
Tri-Service XPlan Component Integration/AWE modules (AMPS)	1	2010	3	2011
JBC-P(A) Development and Testing (IDM)	1	2011	1	2013
Develop Hardware and Software (ADEC)	1	2011	3	2016
Develop Hardware and Software (ACN)	1	2011	3	2016
ASIF Lab (IDM)	1	2011	3	2016
Helicopter Terrain Avoidance and Warning System (HTAWS)	2	2011	1	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604220A: *Armed, Deployable Helos*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	61.643	72.550	166.132	-	166.132	59.958	35.908	-	-	Continuing	Continuing
538: *KIOWA WARRIOR*	60.368	70.461	87.442	-	87.442	54.873	35.908	-	-	Continuing	Continuing
53Z: *ARMED SCOUT HELICOPTER*	1.275	2.089	78.690	-	78.690	5.085	-	-	-	Continuing	Continuing

Note

Change Summary Explanation:

FY 2012: Base funding realigned from other Army programs.

A. Mission Description and Budget Item Justification

The Kiowa Warrior (KW) funding line (Project 538) develops, integrates and tests modifications which will allow the OH-58D to continue to safely serve as the Army's armed reconnaissance aviation capability until replaced/retired. An ACAT II program, KW Cockpit And Sensor Upgrade Program (CASUP), was established to address capability shortfalls, obsolescence, and performance issues with the current fielded fleet. KW CASUP is not the alternative solution to meet the Armed Reconnaissance Helicopter capability.

The Armed Scout Helicopter funding line (Project 53Z) has been established to fund the Analysis of Alternatives (AoA) and milestone documentation development in support of efforts to identify a replacement for the aging KW fleet or an upgrade to the OH-58 design.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	66.169	72.550	21.293	-	21.293
Current President's Budget	61.643	72.550	166.132	-	166.132
Total Adjustments	-4.526	-	144.839	-	144.839
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.581	-			
• Adjustments to Budget Years	-1.600	-	144.839	-	144.839
• Economic Assumption	-0.277	-	-	-	-
• FFRDC	-0.068	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604220A: *Armed, Deployable Helos*	PROJECT 538: *KIOWA WARRIOR*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
538: *KIOWA WARRIOR*	60.368	70.461	87.442	-	87.442	54.873	35.908	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The OH-58D Kiowa Warrior is a two-seat, single-engine, observation, scout/attack helicopter with four main rotor blades. It utilizes a thermal-imaging system and a laser rangefinder/designator in a mast-mounted sight situated above the main rotor system. The aircraft is equipped with a variety of weapon systems including: HELLFIRE, 2.75-inch rockets, and a .50-caliber machine gun. The aircraft operates autonomously at standoff ranges providing armed reconnaissance, command and control, and target acquisition/designation for Apache helicopters and other airborne weapons platforms in day, night, and adverse-weather conditions. The Active Army and the National Guard fly Kiowa Warriors.

Funding develops, integrates and qualifies modifications to support Kiowa Warrior missions - principally the ACAT II Kiowa Warrior Cockpit and Sensor Upgrade Program (CASUP). These upgrades to the Kiowa Warrior will convert the OH-58D(R) to the OH-58F configuration, and allow it to continue to safely serve as the Army's armed reconnaissance, aviation platform through its operation service end date of FY2025. The modifications planned will address issues with weight, safety, interoperability, survivability, and sustainability to enhance mission capability.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Development and Integration	45.043	52.616	60.392	-	60.392
Articles:	0	0			
Description: Development and Integration Efforts					
FY 2010 Accomplishments: Development and Integration Efforts					
FY 2011 Plans: Development and Integration Efforts					
FY 2012 Base Plans: Development and Integration Efforts					
Title: Engineering Support Activities	6.415	8.200	13.416	-	13.416
Articles:	0	0			
Description: Engineering Support Activities					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604220A: *Armed, Deployable Helos*	PROJECT 538: *KIOWA WARRIOR*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Engineering Support Activities ***FY 2011 Plans:*** Engineering Support Activities ***FY 2012 Base Plans:*** Engineering Support Activities					
Title: Test and Evaluation ***Articles:*** ***Description:*** Test and Evaluation ***FY 2010 Accomplishments:*** Test and Evaluation ***FY 2011 Plans:*** Test and Evaluation ***FY 2012 Base Plans:*** Test and Evaluation	2.980 0	3.000 0	6.174	-	6.174
Title: Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR) ***Articles:*** ***Description:*** Provides support for Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR) initiatives ***FY 2010 Accomplishments:*** Provides support for Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR) initiatives.	1.600 0	-	-	-	-
Title: Program Management ***Articles:*** ***Description:*** Program Management ***FY 2010 Accomplishments:***	4.330 0	6.645 0	7.460	-	7.460

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604220A: *Armed, Deployable Helos*	PROJECT 538: *KIOWA WARRIOR*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Program Management ***FY 2011 Plans:*** Program Management ***FY 2012 Base Plans:*** Program Management					
Accomplishments/Planned Programs Subtotals	60.368	70.461	87.442	-	87.442

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• AZ2200: *Kiowa Warrior (AZ2200)*	174.854	94.400	162.052	145.500	307.552		274.007	285.508	365.879	464.310	2,154.777

D. Acquisition Strategy

The Government will serve as the system integrator managing multiple contracts.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604220A: *Armed, Deployable Helos*	PROJECT 538: *KIOWA WARRIOR*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management (Core Funding)	Various	Various Activities:Various Activities	2.098	6.645		7.460		-		7.460	Continuing	Continuing	Continuing
Small Business Innovative Research (SBIR) and Small Business Technology Transfer Program (STTR)	Various	Dept of Army:Dept of Army Initiatives	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	2.098	6.645		7.460		-		7.460			

Remarks

.
Funding will provide Armed Scout Helicopter (ASH) Government and contractor Program Management, Engineering, and Logisitical support for CASUP.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development and Integration (Core Funding)	Various	Honeywell Inc (CDS5 Software Development):PIF (Structural Integration)	81.528	52.616		60.392		-		60.392	Continuing	Continuing	Continuing
		Subtotal	81.528	52.616		60.392		-		60.392			

Remarks

.
Funding will provide both contractor and in-house development and integration efforts for Cockpit And Sensor Upgrade Program (CASUP).

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support Activities	Various	Various Activities:AED & SED	7.022	8.200		13.416		-		13.416	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604220A: *Armed, Deployable Helos*	PROJECT 538: *KIOWA WARRIOR*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	7.022	8.200		13.416		-		13.416			

Remarks

.

Funding will provide CASUP engineering support activities performed by Aviation Engineering Directorate (AED) and Software Engineering Directorate (SED).

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation (Core Funding)	Various	Various Activities:RTC, AATD, DTC, OTC	1.411	3.000		6.174		-		6.174	Continuing	Continuing	Continuing
		Subtotal	1.411	3.000		6.174		-		6.174			

Remarks

.

Funding will provide CASUP test and evaluation activities conducted by Redstone Test Center (RTC), Aviation Applied Technology Directorate (AATD), Developmental Test Command (DTC), and Operational Test Command (OTC).

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	92.059	70.461		87.442		-		87.442			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604220A: *Armed, Deployable Helos*	PROJECT 538: *KIOWA WARRIOR*

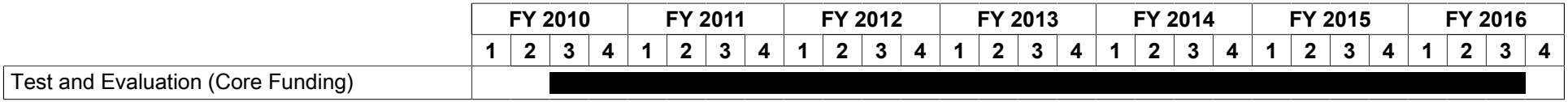

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604220A: *Armed, Deployable Helos*	PROJECT 538: *KIOWA WARRIOR*

Schedule Details

	Start		End	
Events	Quarter	Year	Quarter	Year
Test and Evaluation (Core Funding)	3	2010	3	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604220A: *Armed, Deployable Helos*	PROJECT 53Z: *ARMED SCOUT HELICOPTER*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
53Z: *ARMED SCOUT HELICOPTER*	1.275	2.089	78.690	-	78.690	5.085	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The mission of the Kiowa Warrior replacement aircraft is to provide a robust reconnaissance and security capability for the Joint Combined arms air-ground maneuver team. It will be a direct replacement for the aging OH-58D Kiowa Warrior / OH-58F Kiowa Warrior CASUP fleet or an upgrade to the OH-58 design.

The aircraft will provide a highly deployable, reconnaissance and security capability that will employ immediately upon arrival into theater. The platform will address the capability gaps of interoperability, survivability, versatility, agility, lethality, and sustainability to ensure interoperability over extended ranges, enhance mission effectiveness
throughout the operational environment, and focus on system survivability against threats operating in the contemporary operational environment, while reducing the logistical burden on the tactical unit. The fundamental purpose is to perform reconnaissance and to provide security in combat operations. In doing so, it improves the commander's ability to maneuver and concentrate superior combat power against the enemy at the decisive time and place.

Funding supports the Armed Aerial Scout (AAS) Analysis of Alternatives, the development of milestone documents/reviews, and initial risk reduction efforts post Milestone A during a Technology Development Phase. Post FY12 funding will be re-addressed as program strategies mature.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: AAS AoA and Milestone support	1.275	2.089	4.761	-	4.761
Articles:	0	0			
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Funded AAS AoA and Milestone support ***FY 2011 Plans:*** Continue AAS AoA and Milestone support ***FY 2012 Base Plans:*** Will continue AAS AoA and Milestone support					
Title: Technology Development	-	-	73.929	-	73.929

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604220A: *Armed, Deployable Helos*	PROJECT 53Z: *ARMED SCOUT HELICOPTER*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Technology Development ***FY 2012 Base Plans:*** Technology Development					
Accomplishments/Planned Programs Subtotals	1.275	2.089	78.690	-	78.690

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604220A: *Armed, Deployable Helos*	PROJECT 53Z: *ARMED SCOUT HELICOPTER*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Development	C/CR	Various:Various	-	-		73.929		-		73.929	Continuing	Continuing	Continuing
		Subtotal	-	-		73.929		-		73.929			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AAS AoA and Milestone support	C/CR	Various:Various	-	2.089		4.761		-		4.761	Continuing	Continuing	Continuing
		Subtotal	-	2.089		4.761		-		4.761			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	2.089		78.690		-		78.690			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604220A: *Armed, Deployable Helos*	PROJECT 53Z: *ARMED SCOUT HELICOPTER*

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Technology Development																												

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604220A: *Armed, Deployable Helos*	PROJECT 53Z: *ARMED SCOUT HELICOPTER*

Schedule Details

	Start		End	
Events	Quarter	Year	Quarter	Year
Technology Development	4	2011	3	2012

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	168.496	172.269	101.265	-	101.265	207.036	186.589	126.262	89.148	Continuing	Continuing
665: *A/C SURV EQUIP DEV*	-	4.900	9.554	-	9.554	21.740	14.231	18.553	18.772	Continuing	Continuing
L12: *Signals Warfare Development (MIP)*	5.172	-	-	-	-	-	-	-	-	Continuing	Continuing
L13: *COUNTER-IEDS*	24.498	-	-	-	-	-	-	-	-	Continuing	Continuing
L15: *ARAT-TSS*	2.986	-	-	-	-	-	-	-	-	Continuing	Continuing
L16: *TROJAN DEVELOPMENT (MIP)*	3.502	-	-	-	-	-	-	4.559	4.589	Continuing	Continuing
L20: *ATIRCM/CMWS*	132.338	167.369	-	-	-	-	-	-	-	Continuing	Continuing
VS6: *INTEGRATED ELECTRONIC WARFARE SYSTEMS*	-	-	7.393	-	7.393	49.301	83.635	87.232	54.506	0.000	282.067
VU7: *Common Missile Warning System*	-	-	17.141	-	17.141	11.964	-	-	-	0.000	29.105
VU8: *Common Infrared Counter Measure*	-	-	67.177	-	67.177	124.031	88.723	15.918	11.281	0.000	307.130

Note

Change Summary Explanation: Funding - FY 2010: Funding - FY 10: Increase for for Overseas Contingency Operations efforts.

A. Mission Description and Budget Item Justification

FY 2012 budget request funds Electronic Warfare Development. This program element (PE) encompasses engineering and manufacturing development for tactical electronic warfare (EW), signals warfare (SW), aircraft survivability equipment (ASE), battlefield deception, rapid software reprogramming and protection of personnel and equipment from hostile artillery. EW encompasses the development of tactical EW equipment and systems mounted in both ground and air vehicles. The systems under this program provides the Army with the capability to degrade or deny hostile forces the effective use of their communications, countermortar/counterbattery radars, surveillance radars, infrared/optical battlefield surveillance systems and electronically fused munitions. Existing Army EW systems must be replaced or upgraded to maintain their capability in the face of threats. This program element satisfies requirements for brigade, division, corps and higher commanders to conduct electronic warfare to meet tactical and Special Electronic Mission Aircraft (SEMA), attack/scout, and assault/cargo mission requirements. The Prophet program provides for the development of multifunction ground based and airborne intelligence and electronic warfare systems. Trojan will complete Proof-of-Principle R&D for specific applications in advanced threat signals processing, prototype software upgrades, high frequency (HF) algorithms for compact antenna array technology (CAAT), search and acquisition capabilities for unattended signal collectors, and new digital intelligence collection, processing and dissemination technology. The

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604270A: *Electronic Warfare Development*

Army Reprogramming Analysis Team (ARAT) Project will develop, test and equip an Army-wide infrastructure capable of rapidly reprogramming electronic combat software embedded in offensive and defensive weapon systems.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	219.608	172.269	94.196	-	94.196
Current President's Budget	168.496	172.269	101.265	-	101.265
Total Adjustments	-51.112	-	7.069	-	7.069
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-51.112	-	7.069	-	7.069

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT 665: *A/C SURV EQUIP DEV*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
665: *A/C SURV EQUIP DEV*	-	4.900	9.554	-	9.554	21.740	14.231	18.553	18.772	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The objective of the Aircraft Survivability Equipment (ASE) Development project is to improve radio frequency (RF) ASE for Army aviation. Milestone Decision Authority (MDA) approved phase 1 of a phased/incremental path forward, supported by the user and HQDA.

Phase I upgrades the Processor Line Replaceable Unit (LRU) of the AN/APR-39A(V)1 Radar Signal Detecting Set through modernization and reduced parts count. Along with improved maintainability and reliability, performance will be enhanced via increased processing speed and expanded memory. These improvements will result in faster response time, better dense environment capability and improved parameter measurement. Phase 1 serves to make the currently fielded system viable until affordable improved RF ASE capability can be pursued in Phases 2 and 3. Phase 2 initiates development of an improved digital Radar Warning Receiver (RWR) and Phase 3 adds active Electronic Countermeasures (ECM) for selected aircraft.

FY 12 RDTE funding $9.554 million continues the AOA of the digital RWR.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Radio Frequency Countermeasures ***Description:*** In-house and program management administration ***FY 2012 Plans:*** WIII continue to fund Phase II RFCM	-	-	2.489
Title: Phase II Digital RWR ***Articles:*** ***Description:*** Phase II Product Development (Digital RWR) ***FY 2011 Plans:*** Phase II AOA ***FY 2012 Plans:*** Phase II Prototype	-	4.900 0	7.065
Accomplishments/Planned Programs Subtotals	-	4.900	9.554

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT 665: *A/C SURV EQUIP DEV*

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

The Army Radio Frequency (RF) Aircraft Survivability Equipment (ASE) is managed by Program Manager ASE (PM ASE) for integration and installation on Army Aviation platforms. PM ASE proposed a three phased path forward commensurate with user priorities and life cycle management philosophy. Phase 1, approved by MDA, upgrades the currently fielded AN/APR-39A(V)1 Radar Signal Detecting Set which is employed by approximately 3,000 aircraft; awarded sole source via ECP to the existing contractor of the APR-39A. Phase 2 develops an improved digital Radar Warning Receiver for modernized Army platforms by capitalizing on emerging technologies to provide enhanced aircrew situational awareness. Phase 3 will develop and integrate active Electronic Countermeasures jamming capability for select aircraft. Competition will be considered for the future phases.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT 665: *A/C SURV EQUIP DEV*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management	Various	Various:Various	0.121	-		-		-		-	Continuing	Continuing	Continuing
Other Development	Various	Various:Various	7.985	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	8.106	-		-		-		-			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Digital Radar Warning Receiver (RWR)	SS/FP	Lab Demo Studies:TBD	-	4.900		7.065		-		7.065	Continuing	Continuing	Continuing
		Subtotal	-	4.900		7.065		-		7.065			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	Various	Various:Various	4.395	-		1.560		-		1.560	Continuing	Continuing	Continuing
Contractor Support	Various	Various:Various	0.921	-		0.929		-		0.929	Continuing	Continuing	Continuing
		Subtotal	5.316	-		2.489		-		2.489			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Phase II DT/OT/FOTE	TBD	TBD:tbd	0.145	-		-		-		-	Continuing	Continuing	Continuing
Flight Test/Range Support (Phase I)	TBD	ATTC,:TBD	0.450	-		-		-		-	Continuing	Continuing	Continuing
Phase I Test and Evaluation	TBD	TSSQ,:Eglin AFB, FL	0.400	-		-		-		-	Continuing	Continuing	Continuing
Processor Upgrade Evaluation	TBD	Evaluation Center:TBD	0.025	-		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT 665: *A/C SURV EQUIP DEV*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	1.020	-		-		-		-			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.442	4.900		9.554		-		9.554			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT 665: *A/C SURV EQUIP DEV*

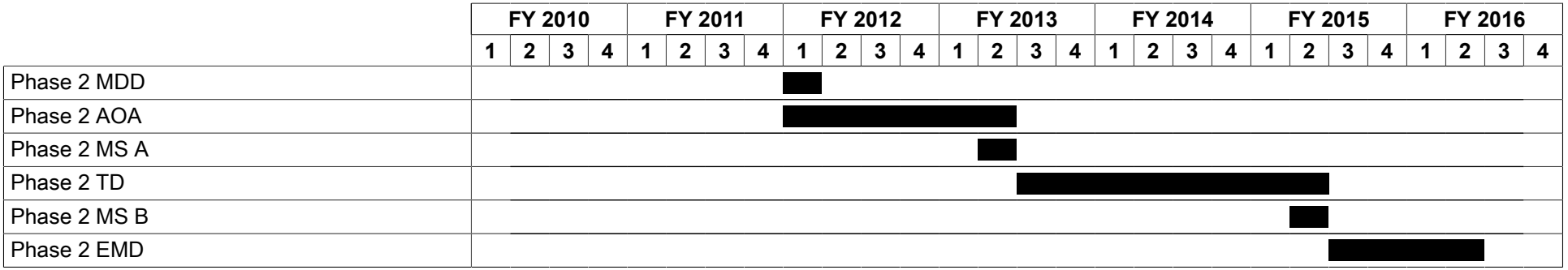

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604270A: *Electronic Warfare Development*	**PROJECT** 665: *A/C SURV EQUIP DEV*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Phase 2 MDD	1	2012	1	2012
Phase 2 AOA	1	2012	2	2013
Phase 2 MS A	2	2013	2	2013
Phase 2 TD	3	2013	2	2015
Phase 2 MS B	2	2015	2	2015
Phase 2 EMD	3	2015	2	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L12: *Signals Warfare Development (MIP)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
L12: *Signals Warfare Development (MIP)*	5.172	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Note: This program is not terminating. Program transferred to 0304270A beginning in FY 11 to comply with fully captured Military Intelligence Program (MIP) elements.

A. Mission Description and Budget Item Justification

Prophet is the tactical commander's sole organic ground-based Signals Intelligence (SIGINT)/Electronic Warfare system for the Brigade Combat Team (BCT), Stryker Brigade Combat Team (SBCT), and Battlefield Surveillance Brigade (BfSB). Its primary mission is to provide 24-hour Situation Development and Information Superiority to the supported maneuver brigade to enable the most effective engagement of enemy forces. Prophet is an integral part of the Army Modernization providing Near Real Time (NRT) information to the Brigade Commander within his combat decision cycle. This NRT information, when processed, provides a key component of the fused intelligence Common Operating Picture (COP). Prophet Enhanced (PE) provides a modular, scalable, open architecture-based system solution optimized for ease of use and rapid integration of Technical Insertions/Pre-Planned Product Improvements to ensure operational relevance. PE is a non-vehicle specific system, allowing maximum flexibility to accommodate a myriad of platforms. PE also provides a simultaneous mission capability in stationary, mobile, and man-pack configuration/modes further increasing/enhancing the SIGINT capabilities for the unit commander. PE is being fielded to deploying units in accordance with ARFORGEN requirements. Prophet provides reach-back capability and interfaces directly with the National SIGINT Enterprise via Wideband Beyond Line of Sight (WB BLOS) Satellite Communications either at Prophet Control (PC) or the Prophet Sensor.

No FY2012 funding under this PE.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: S3B Software Upgrade	5.172	-	-
Articles:	0		
Description: Develop S3B Software Upgrades for Prophet systems under P3I program			
FY 2010 Accomplishments: Develop SIGINT Terminal Guidance			
Accomplishments/Planned Programs Subtotals	5.172	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L12: *Signals Warfare Development (MIP)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• Electronic Warfare Development: *Electronic Warfare Development (RDT&E)*		18.426	10.431		10.431		15.061	15.491	14.933	Continuing	Continuing
• Prophet Ground: *Prophet Ground (OPA)*	58.299	90.417	72.041		72.041		41.090	40.239	35.926	Continuing	Continuing
• Special Purpose Systems: *Special Purpose Systems (MIP OPA) (Prophet Only)*	6.999	7.646	9.163		9.163		13.149	13.948	14.396	Continuing	Continuing
• Defense Cryptological Program for P: *Defense Cryptological Program for PROPHET (MIP) (RDT&E)*	0.319	2.136	5.989		5.989		4.724	4.814	4.896	Continuing	Continuing

D. Acquisition Strategy

The Prophet R&D Acquisition Strategy is structured to optimize system capability while reducing risk and streamlining business and engineering processes. PE entered production in 2QFY09 via Full and Open competition. The PE contract is Firm-Fixed-Price, Indefinite-Delivery Indefinite-Quantity with provisions to support R&D and other developmental work as Cost-Plus efforts. The PE contract will be used to maintain the operational relevancy of PE systems in a dynamic threat environment.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L12: *Signals Warfare Development (MIP)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PM Electronic Warfare:Fort Monmouth, NJ	6.007	-		-		-		-	Continuing	Continuing	0.000
Blue Marauder (Congressional Add)	Various	PM CSIS:Fort Belvoir, VA	4.850	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	10.857	-		-		-		-			0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prophet Spiral 2 ES SDD Contract	Various	General Dynamics C4 Devision:Scottsdale, AZ	26.614	-		-		-		-	Continuing	Continuing	0.000
Spiral 1 (SP1) ES Development Platforms	Various	L3 Linkabit:San Diego, CA	4.494	-		-		-		-	Continuing	Continuing	0.000
4303 Enhancements	Various	Raytheon:Garland, TX	0.260	-		-		-		-	Continuing	Continuing	0.000
SIGINT Terminal Guidance	Various	I2WD:Fort Monmouth, NJ	2.104	-		-		-		-	Continuing	Continuing	0.000
S3B Software Upgrade	Various	LM:Wall, NJ	-	-		-		-		-	Continuing	Continuing	0.000
ACOC Tech Insertion	Various	GD:Scottsdale, AZ	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	33.472	-		-		-		-			0.000

Remarks

Funds moved to PE 354270 - EW5 starting FY11. No further financial execution will be conducted under this PE.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	Various	CECOM:Fort Monmouth, NJ	8.901	-		-		-		-	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L12: *Signals Warfare Development (MIP)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Engineering Support	Various	BAH:Eatontown, NJ	-	-		-		-		-	Continuing	Continuing	0.000
Contractor Engineering Support	Various	CACI:Eatontown, NJ	4.025	-		-		-		-	Continuing	Continuing	0.000
Contractor Engineering Support	Various	Mitre:McLean, VA	2.819	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	15.745	-		-		-		-			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prepare for and Conduct Spiral 2 ES - Phase I Demo	Various	EPG/AEC:Fort Huachuca, AZ	10.095	-		-		-		-	Continuing	Continuing	0.000
Threat T&E	Various	TRADOC:Fort Monroe, VA	0.100	-		-		-		-	Continuing	Continuing	0.000
Geo-Location Testing	Various	BAH:Eatontown, NJ	0.365	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	10.560	-		-		-		-			0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	70.634	-		-		-		-			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L12: *Signals Warfare Development (MIP)*

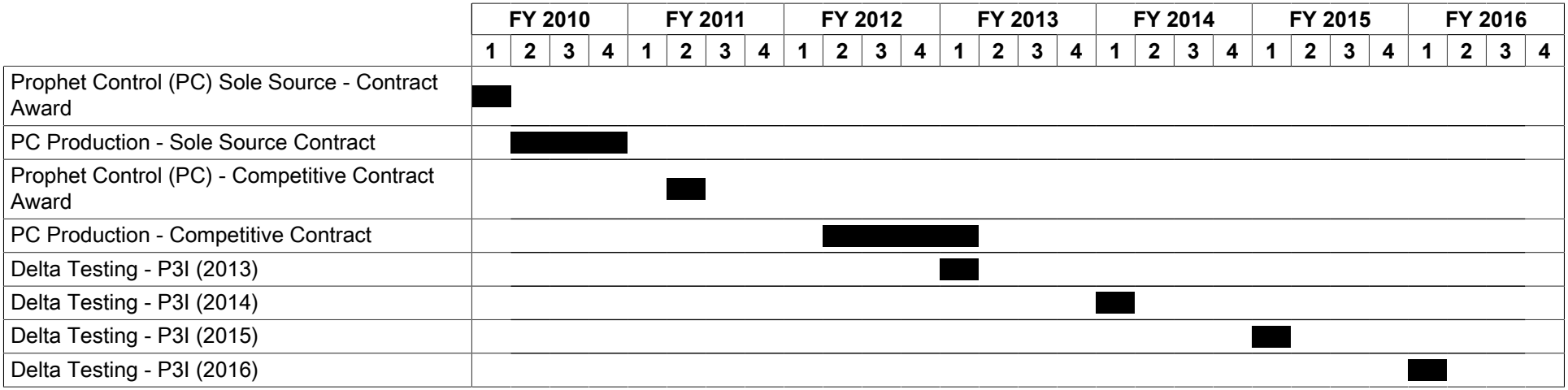

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604270A: *Electronic Warfare Development*	**PROJECT** L12: *Signals Warfare Development (MIP)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Prophet Control (PC) Sole Source - Contract Award	1	2010	1	2010
PC Production - Sole Source Contract	2	2010	4	2010
Prophet Control (PC) - Competitive Contract Award	2	2011	2	2011
PC Production - Competitive Contract	2	2012	1	2013
Delta Testing - P3I (2013)	1	2013	1	2013
Delta Testing - P3I (2014)	1	2014	1	2014
Delta Testing - P3I (2015)	1	2015	1	2015
Delta Testing - P3I (2016)	1	2016	1	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L13: *COUNTER-IEDS*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
L13: *COUNTER-IEDS*	24.498	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

FY 2010 funding was for the Counter Radio Controlled Improvised Explosive Devises (RCIED) Electronics Warfare (CREW) family. There was no funding request in FY 2011.

A. Mission Description and Budget Item Justification

The Counter Improvised Explosive Devices (R-IED) is part of the family of Electronic Warfare and Electronic Counter Measure (ECM) systems used to provide essential force protection for fixed sites, vehicle platforms and soldiers. The Counter-IEDS funds will support the evolving Integrated Electronic Warfare Systems Program by supporting the technology and development of Electronic Attack, Electronic Protect and Electronic Support systems and continued support to specific Electronic Counter Measure (ECM) System such as the Counter Radio Controlled Improvised Explosive Devices (RCIED) Electronic Warfare (CREW) family of systems.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: COUNTER-IEDS	24.498	-	-
Articles:	0		
Description: Funding is provided for the following effort			
FY 2010 Accomplishments: FY10 funding was used to fund the Duke Technical Insertion (DTI) non-recurring engineering effort, anechoic chamber developmental testing and field testing at Yuma Proving Ground, AZ. It was also used for PM Operations and government engineering support.			
Accomplishments/Planned Programs Subtotals	24.498	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• VA8000: *WARLOCK*	164.435	24.127					15.448	60.259	200.754	0.000	480.588

D. Acquisition Strategy

The Duke Technical Insertion (DTI) effort will enable the Duke System to maintain relevancy and performance in pace with the changing threat. The engineering and manufacturing development was awarded competitively through the CERDEC S3 Contract vehicle for the CREW 2 Duke system improvement.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L13: *COUNTER-IEDS*

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L13: *COUNTER-IEDS*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO Staff/Travel OH	Various	PM Electronic Warfare -:PM Electronic Warfare - Fort Monmouth, NJ	-	-		-		-		-	Continuing	Continuing	0.000
Program SETA Support	Various	CACI -:NJ/MD	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	-		-		-		-			0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Tech Insertion Range and Frequency Leverage - Duke	TBD	SRCTec -:Syracuse, NY	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	-		-		-		-			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
COMMS Compatability & EMI	Various	I2WD:Fort Monmouth, NJ	-	-		-		-		-	Continuing	Continuing	0.000
Modeling and Simulation	Various	CERDEC, S&TCD:Fort Monmouth, NJ	-	-		-		-		-	Continuing	Continuing	0.000
Government Engineering Support	Various	I2WD:Fort Monmouth, NJ	-	-		-		-		-	Continuing	Continuing	0.000
Government Engineering Support	Various	Various:Various	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	-		-		-		-			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L13: *COUNTER-IEDS*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Chamber Test	Various	I2WD -:Fort Monmouth, NJ	-	-		-		-		-	Continuing	Continuing	0.000
Operational Range Test	MIPR	Yuma Proving Ground,:Yuma Proving Ground, AZ	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	-		-		-		-			0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		-		-			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L13: *COUNTER-IEDS*

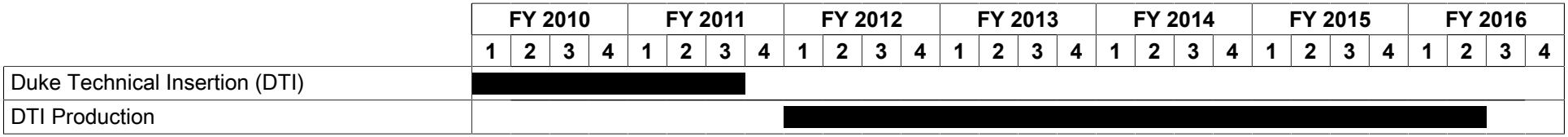

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604270A: *Electronic Warfare Development*	**PROJECT** L13: *COUNTER-IEDS*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Duke Technical Insertion (DTI)	1	2010	3	2011
DTI Production	1	2012	2	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L15: *ARAT-TSS*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
L15: *ARAT-TSS*	2.986	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Army Reprogramming Analysis Team (ARAT) is a Department of the Army established program to develop techniques, methods, tools and architecture to reprogram mission software embedded in Army Force Protection Systems (FPS) and Targeting Sensing Systems (TSS) in response to changes in threat signatures. Current military operations are conducted in a rapidly changing threat environment, where Improvised Explosive Devices (IEDs), IR man-portable air defense systems (MANPADS) seekers, radar guided surface-to-air-missiles (SAM), laser guided weapons, anti-helicopter mines, and targeting sensors are proliferating and evolving. Integrated solutions are required to counter increasingly sophisticated EW threats, and the ARAT reprogramming infrastructure supports the tactical Commander by providing timely rapid-reprogramming, and software/information dissemination for Army supported, Joint, allied service, Electronic Warfare (EW) Integrated Reprogramming (EWIR) target acquisition, target engagement, vehicle survivability, and aircraft survivability equipment (ASE). ARAT efforts support Electronic Attack (EA), Electronic Protect (EP) and Electronic Support (ES).The ARAT rapid-reprogramming infrastructure supports tactical requirements for deployed aircraft and ground-based (e.g. CREW) survivability systems including those deployed in the CENTCOM area of responsibility (AOR). ARAT identifies and analyzes threat signature changes which affect FPS & TSS; determines the impact of observed signature changes on FPS & TSS; creates new mission data software to adapt the system to the changes; disseminates the software changes; and provides methods to upload the new software into the affected FPS or TSS. Each element within the ARAT infrastructure plays a specific role within the program's rapid reprogramming process, providing the Warfighter with the capability to install mission and target identification software at the lowest possible level - maximizing flexibility for tactical commanders. ARAT participates in the operational and developmental test design of Army FPS, and supports Service and JCS Reprogramming Exercises in all theaters. ARAT R&D enables continuing development of 1) automated threat analysis tools to rapidly detect (flag) threat changes within the intelligence system, 2) tools to minimize the time to develop Mission Data Sets (MDS), 3) tools and technology to minimize the time required to test and validate MDSs, 4) improved communications conduits to transmit mission software changes to field users, and 5) enhanced mission-software uploading tools. These efforts allow for rapid threat analysis, simulation, software development, distribution and uploading of software changes directly to the supported Warfighter.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: ARAT-TSS	2.986	-	-
Articles:	0		
Description: CREW Reprogramming -			
FY 2010 Accomplishments: Determine intelligence/information requirements and then study methods to reduce the effort and time necessary to collect, process, analyze and disseminate information required for CREW reprogramming. Based on established reprogramming			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L15: *ARAT-TSS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
methodology, develop tools to reprogram CREW and establish government organic post production & MDS support for the system. Continuing effort is required in out-years to accommodate threat changes and CREW system improvements.			
Accomplishments/Planned Programs Subtotals	2.986	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

The efforts to be funded in this project will require a combination of systems specific and high-tech knowledge. The contractual services portion for the project will be obtained from both the CECOM Software Engineering Center (SEC) competitive omnibus and the RDEC High Tech contracts.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L15: *ARAT-TSS*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Labor (internal Gov't)	Various	CECOM,:Fort Monmouth, NJ & Aberdeen Proving Grounds, MD	4.269	-		-		-		-	Continuing	Continuing	Continuing
Travel	Various	Various sites:various	0.692	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	4.961	-		-		-		-			

Remarks

Organic Government R&D Development Labor.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support (CECOM RDEC T&E CECOM SEC Omnibus)	Various	various:various	8.894	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	8.894	-		-		-		-			

Remarks

R&D Development Costs associated with contractual ARAT Team.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	13.855	-		-		-		-			

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L16: *TROJAN DEVELOPMENT (MIP)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
L16: *TROJAN DEVELOPMENT (MIP)*	3.502	-	-	-	-	-	-	4.559	4.589	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project is a Military Intelligence Program (MIP). Trojan research and development supports Trojan Classic XXI (TCXXI) and next generation (NexGEN) future capabilities to fulfill the Army's need for a worldwide, deployable, remotable, intelligence, surveillance and reconnaissance support that can dynamically execute operations from sanctuary-based to deployed assets in theater. In support of Army Modernization and Army Force Generation, TCXXI will provide soldiers with a real-world, hands-on, live and near-real time SIGINT training environment sustaining, maintaining and enhancing their military occupational specialty proficiencies and specific target expertise. This operational readiness training will fulfill the Army's larger intelligence training requirement via a secure, collaborative architecture.

A key factor for future force success is the ability to collect, process and use information about an adversary while preventing similar information from being disclosed. Trojan is a combined operational and readiness mission system which uses advanced networking technology to provide seamless rapid radio relay, secure communications to include voice, data, facsimile, and electronic reconnaissance support to U.S. forces throughout the world. Trojan operations may be easily tailored to fit military intelligence unit training schedules and surged during specific events to involve every aspect of the tactical intelligence collection, processing, analysis and reporting systems. This project engineers, tests and evaluates new digital intelligence collection, processing and dissemination technology using the fielded Trojan systems, prior to the acquisition of those technologies. As part of the objective intelligence architecture, these capabilities will enable processing and dissemination of real-time intelligence data from various sources to form the intelligence needed to issue orders inside the threat decision cycle. To that end, it is imperative that Trojan keep pace with digitization initiatives in order to respond aggressively to the emerging intelligence communication threats.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Hardware/Software Integration and Testing	0.370	-	-
Articles:	0		
Description: Integrate and test specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms. Resource development of GLAIVE software.			
FY 2010 Accomplishments: Integrated and tested specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms. Completed resource development of GLAIVE software. Integrated several new NSA SW packages.			
Title: Multi-bandwidth Compression Algorithm Technology	0.320	-	-
Articles:	0		

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L16: *TROJAN DEVELOPMENT (MIP)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Acquired and applied multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput.			
Title: Prototype QRC Receiver Packages ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Developed prototype QRC Receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP and FPGA technologies.	0.357 0	-	-
Title: Direction Finding (DF) and Geolocation Technologies ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Integrated Direction Finding (DF) and geolocation technologies into TROJAN Remote Receiving Groups (RRGs).	0.350 0	-	-
Title: Hardware/Software Interface ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Developed hardware/software interface for TCXXI system and NexGEN to ONEROOF storage system.	0.400 0	-	-
Title: Software Enhancements for TROJAN Audio Streaming Systems ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:***	0.256 0	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604270A: *Electronic Warfare Development*	**PROJECT** L16: *TROJAN DEVELOPMENT (MIP)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Developed specialized software enhancements to the TROJAN audio streaming subsystems to improve system redundancy & throughput capacity and system management capabilities; Investigated compression/processing technologies to reduce communications bandwidth requirements for remoted TROJAN systems, including streaming audio technologies.			
Title: Develop smaller, mobile SATCOM dishes and receivers ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Developed smaller more mobile SATCOM dishes and receivers. Developed more efficient use of bandwidth, Comm's on the move and man-packable intelligence collection systems.	0.701 0	-	-
Title: Engineering Support ***Articles:*** ***Description:*** Provided engineering support to GLAIVE and other efforts. ***FY 2010 Accomplishments:*** Funded labor for two SW engineers at NSA in support of GLAIVE and other above applicable efforts. Funded labor for one MAT DEV technologist, one MAT DEV software and one MAT DEV HW engineer.	0.748 0	-	-
Accomplishments/Planned Programs Subtotals	3.502	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

This Acquisition Strategy for the TROJAN Classic XXI System supported by TROJAN RDT&E is to adapt and leverage from Commercial Off the Shelf (COTS) and Government Off the Shelf (GOTS) products. Additionally leverage off of development by DoD and other Government agencies to the greatest extend possible. TROJAN RDT&E is used to fund the development of enhancing these technologies to meet specific user requirements. The funding for production and fielding of these capabilities are funded under TROJAN BA0331.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L16: *TROJAN DEVELOPMENT (MIP)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop Prototype QRC Receiver packages	Various	CERDEC I2WD:various	4.067	-		-		-		-	Continuing	Continuing	Continuing
Develop DF Capabilities for TROJAN RRG	Various	CERDEC I2WD:various	1.797	-		-		-		-	Continuing	Continuing	Continuing
Investigate Compression / processing technologies	Various	CERDEC I2WD:various	1.038	-		-		-		-	Continuing	Continuing	Continuing
Develop specialized software enhancements to TROJAN audio streaming	Various	CERDEC I2WD:various	2.420	-		-		-		-	Continuing	Continuing	Continuing
Develop hardware/software interface to ONEROOF	Various	CERDEC I2WD:various	1.766	-		-		-		-	Continuing	Continuing	Continuing
Develop small, mobile SATCOM dishes and receivers	Various	Various:various	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	11.088	-		-		-		-			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aquire & Apply muliti bandwidth compr Algorithm	Various	CECOM I2WD:Various	1.126	-		-		-		-	Continuing	Continuing	Continuing
Engineering Support	Various	Various:various	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	1.126	-		-		-		-			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrate/test hardware/ software	Various	CECOM I2WD:various	2.600	-		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L16: *TROJAN DEVELOPMENT (MIP)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational test/eval of enhanced SIG Processing	Various	CECOM I2WD:various	0.429	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	3.029	-		-		-		-			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	15.243	-		-		-		-			

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L20: *ATIRCM/CMWS*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
L20: *ATIRCM/CMWS*	132.338	167.369	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

Beginning in FY12, L20 is broken into subprograms consisting of CMWS (VU7), CIRCM (VU8) and HFDS (VS6).

The US Army operational requirements concept for Infrared (IR) countermeasure systems is known as the Suite of Integrated Infrared Countermeasures (SIIRCM). It is an integrated warning and countermeasure system to enhance aircraft survivability against IR guided threat missile systems. The core element of the SIIRCM concept is the Advanced Threat Infrared Countermeasure/Common Missile Warning System (ATIRCM/CMWS) Program. The ATIRCM/CMWS, a subsystem to a host aircraft, is an integrated ultraviolet (UV) missile warning system and an IR Laser Jamming and Improved Countermeasure Dispenser (ICMD).

The ATIRCM/CMWS program was restructured per an Under Secretary of Defense for Acquisition, Technology, and Logistics (USD (AT&L)) Acquisition Decision Memorandum (ADM) dated April 15, 2009. USD (AT&L) designated the ATIRCM/CMWS program as an Acquisition Category (ACAT) 1D special interest program, and directed the establishment of the CMWS, ATIRCM QRC and Common Infrared Countermeasure (CIRCM) subprograms. On September 3, 2010, Mr Kendall, Principal Deputy to the USD(AT&L), Acting DAE signed an ADM approving the reinstatement of MS C for CMWS and redesignating the ATIRCM QRC and CMWS subprograms as ACAT IC. Mr. Kendall also approved new baselines for each subprogram.

The CMWS subprogram is a UV missile warning system that cues both flare and laser countermeasures to defeat incoming infrared missiles. The B-kit consists of the components which perform the missile detection and identification, false alarm rejection, hostile missile declaration, and countermeasure employment functions of the system. The CMWS Electronic Control Unit (ECU) receives UV missile detection data from Electro-optic Missile Sensors (EOMS) and sends a missile alert signal to alert crewmen via on-board avionics, and ATIRCM QRC Jam Head Control Unit. Tier 1 threat missiles detected and tracked by the CMWS are subsequently defeated by a combination of missile seeker countermeasures, including decoy flares and ATIRCM IR Laser Jamming (CH-47 platform). The CMWS Generation 3 (Gen 3) Electronics Control Unit (ECU) will meet Tier 1 requirements while retaining a low false alarm rate. The Gen 3 ECU is required to obtain a Full Material Release for CMWS and ensure protection against emerging IR guided missile threats.

The ATIRCM Quick Reaction Capability (QRC) subprogram is an ATIRCM program transition in response to Operational Needs Statement (ONS) Number 08-5661 dated June 10, 2008. This ONS outlines the urgent requirement to equip CH-47 helicopters being used in SWA in support of Operation Enduring Freedom/ Operation New Dawn (OEF/OND) with an improved IRCM capability to counter threats from advanced Man Portable Air Defense Systems (MANPADS). To address this requirement, an ATIRCM QRC for seventy (70) CH-47 helicopters was authorized by an Acquisition Decision Memorandum (ADM) signed September 15, 2008 by

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L20: *ATIRCM/CMWS*

the Army Acquisition Executive (AAE). The DAE signed an ADM on April 15, 2009 that increased this urgent requirement to equip a total of eighty-three (83) CH-47 helicopters.

The CIRCM (next generation ATIRCM) subprogram is an infrared countermeasure system that interfaces with a Missile Warning System (MWS) to provide near spherical coverage of the host platform in order to defeat all IR threats. In an ADM dated July 19, 2010, the Defense Acquisition Executive (DAE) directed that the SIIRCM ORD be the requirement baseline for the CIRCM, in lieu of an Initial Capabilities Document (ICD). The DAE directed that CIRCM provide the sole acquisition of future laser based infrared countermeasure systems for all rotary-wing, tilt-rotor, and small fixed wing aircraft across the Department of Defense. The CIRCM subprogram is projected to reach Milestone A in Fiscal Year 2011.

The A-kit for CMWS, ATIRCM QRC, and CIRCM includes mounting hardware, wiring harnesses, cables, and other components necessary to install and interface the mission kit on host aircraft. The A-kit ensures the mission kit is functionally and physically operational with a specific host aircraft type.

The Hostile Fire Detection System (HFDS) provides small arms fire detection, orientation, type and real time cueing to all aircrew members enabling avoidance and/or response.

The Hostile Fire Quick Reaction Capability (HF QRC) is in response to Operational Needs Statement (ONS) Number 09-0836 dated May 09, 2009. This ONS outlines the urgent requirement for a ballistic threat detection system for Army aircraft. To address this requirement the Army Resource and Requirements Board (AR2B) and War Production Board (WPB) approved a Common Missile Warning System (CMWS) based solution. This capability is scheduled for fielding in Fiscal Year 2012.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Development Efforts	132.338	167.369	-
Articles:	0	0	
Description: ATIRCM/CMWS RDT&E funding supports the design and development for the CMWS Generation 3 (Gen 3) Electronic Control Unit (ECU), CMWS Enhanced Sensor, CMWS Tier 2/3 enhancement, and HFDS/HF QRC development and begins the design and development of the CIRCM system.			
FY 2010 Accomplishments: RDT&E dollars support design and development of the completion of the CMWS Gen 3 ECU and the CMWS Enhanced Sensor, funds the planning for the Technology Development phase for CIRCM and starts HFDS development.			
FY 2011 Plans: RDT&E dollars support HF QRC, CMWS Enhanced Sensor studies, initial development of the CMWS Tier 2/3 enhancement, the CIRCM Technology Development phase and HFDS development.			
Accomplishments/Planned Programs Subtotals	132.338	167.369	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L20: *ATIRCM/CMWS*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• ****: *APA, BA 4 AZ3507 ASE Infrared CM, APA, BA 4 AZ3517 and APA, BA 4 AZ3537*	285.141	174.222								0.000	459.363

D. Acquisition Strategy

The current ATIRCM/CMWS Acquisition Program Baseline is dated September 2010, and the program is fully funded to the CAPE ICE. The acquisition strategy includes buying CMWS separately from ATIRCM and installation of A-kits on all modernized aircraft. The current CMWS production contract is a fixed-priced, Indefinite Delivery, Indefinite Quantity (IDIQ) contract. The Gen 3 ECU became a part of the system in Fiscal Year 2010, and fielding will begin in Fiscal Year 2012. The ATIRCM QRC effort was procured using three letter contracts; two for ATIRCM QRC A-kits and one for ATIRCM QRC B-kits. A new contract for ATIRCM QRC A-kits and B-kits will be awarded in Fiscal Year 2011.

After a full and open competition in Fiscal Year 2011 for the CIRCM Technology Development (TD) phase, at least two contractors will be selected and awarded TD contracts. CIRCM will continue pre-MS B activities and enter into a competition for EMD in Fiscal Year 2013. MS B approval will be followed by award of a single EMD contract with priced options for LRIP and for the procurement of all technical data relevant to the performance of this contract or life cycle of this program. Upon CIRCM MS C approval, the LRIP option will be exercised and the program will immediately enter the Production & Deployment phase. At this time, PM IRCM intends to award a fixed price contract for CIRCM Full Rate Production.

The Hostile Fire Detection System (HFDS) will be pursued via a competitive procurement following the MS A approval.

The Hostile Fire (HF) Quick Reaction Capability (QRC) effort was procured under the CMWS Generation 3 (Gen 3) program utilizing the current T206 (Hardware and T&M Effort) contract and a letter contract.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L20: *ATIRCM/CMWS*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR	Various	Various:-	0.414	-		-		-		-	Continuing	Continuing	Continuing
ATIRCM QRC SUBPROGRAM	Various	-:-	-	-		-		-		-	Continuing	Continuing	Continuing
CMWS System Engineering Program Management	Various	PM ASE, HSV, AL:-	88.613	-		-		-		-	Continuing	Continuing	Continuing
CIRCM System Engineering Program Management	Various	PM ASE, HSV, AL:-	-	10.789		-		-		-	Continuing	Continuing	Continuing
		Subtotal	89.027	10.789		-		-		-			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ATIRCM QRC Design and Development	C/CPFF	BAE Systems, Nashua, NH:-	128.507	-		-		-		-	Continuing	Continuing	Continuing
ATIRCM QRC (AIRCMM)	SS/FP	Various:-	1.563	-		-		-		-	Continuing	Continuing	Continuing
ATIRCM QRC Test Facility	SS/FP	Amherst, HSV, AL:-	1.300	-		-		-		-	Continuing	Continuing	Continuing
ATIRCM QRC	SS/FP	Cowley, Chantilly, VA:-	0.100	-		-		-		-	Continuing	Continuing	Continuing
CMWS Modeling and Simulation	Various	CAS, HSV, AL:-	6.900	1.200		-		-		-	Continuing	Continuing	Continuing
CMWS Enhanced Sensor Study & Evaluation	Various	TBD:-	-	17.000		-		-		-	Continuing	Continuing	Continuing
CMWS Tier 2/3 Threat Upgrades	Various	Various:-	2.475	1.000		-		-		-	Continuing	Continuing	Continuing
CMWS Development Engineering	Various	-:-	43.982	-		-		-		-	Continuing	Continuing	0.000
CMWS Gen 3 ECU ETC	Various	Various:-	14.140	-		-		-		-	Continuing	Continuing	Continuing
CMWS Gen 3 Providence Additional Phases	Various	TBD:-	5.210	-		-		-		-	Continuing	Continuing	Continuing
CIRCM Non-Recurring Engineering	C/CPFF	TBD:-	-	80.640		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L20: *ATIRCM/CMWS*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HFDS Modernization Efforts	Various	Various:TBD	4.000	40.240		-		-		-	Continuing	Continuing	Continuing
		Subtotal	208.177	140.080		-		-		-			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS Contractor Support	SS/FP	Various:-	37.911	-		-		-		-	Continuing	Continuing	Continuing
CMWS Matrix Support	Various	Various:-	3.055	-		-		-		-	Continuing	Continuing	Continuing
CIRCM Support Equipment	Various	TBD:-	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	40.966	-		-		-		-			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ATIRCM QRC Test and Evaluation	Various	Various:-	21.350	-		-		-		-	Continuing	Continuing	Continuing
CMWS System Test and Evaluation	Various	Various:-	-	12.000		-		-		-	Continuing	Continuing	Continuing
CIRCM Test	Various	TBD:-	-	4.500		-		-		-	Continuing	Continuing	Continuing
CIRCM System Test & Evaluation	Various	Various:-	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	21.350	16.500		-		-		-			

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	359.520	167.369		-		-		-			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT L20: *ATIRCM/CMWS*

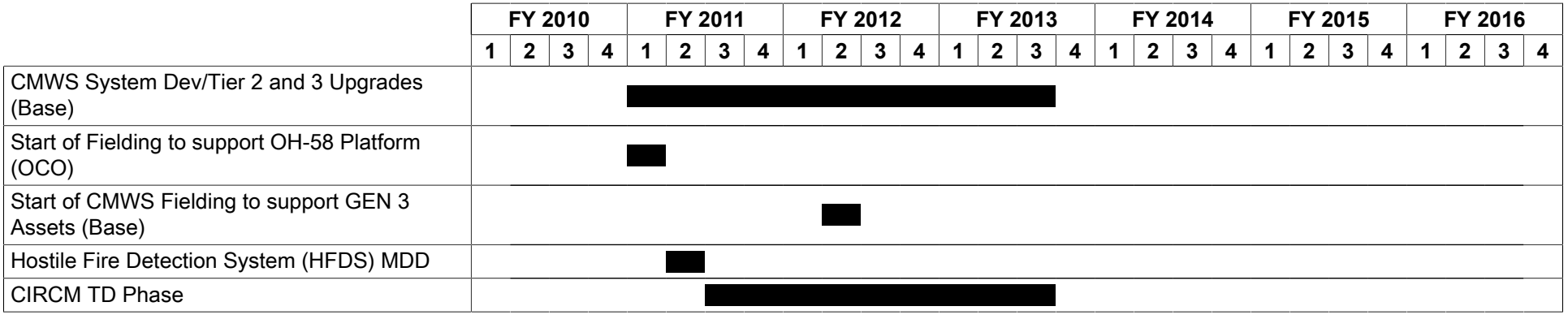

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604270A: *Electronic Warfare Development*	**PROJECT** L20: *ATIRCM/CMWS*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CMWS System Dev/Tier 2 and 3 Upgrades (Base)	1	2011	3	2013
Start of Fielding to support OH-58 Platform (OCO)	1	2011	1	2011
Start of CMWS Fielding to support GEN 3 Assets (Base)	2	2012	2	2012
Hostile Fire Detection System (HFDS) MDD	2	2011	2	2011
CIRCM TD Phase	3	2011	3	2013

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT VS6: *INTEGRATED ELECTRONIC WARFARE SYSTEMS*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
VS6: *INTEGRATED ELECTRONIC WARFARE SYSTEMS*	-	-	7.393	-	7.393	49.301	83.635	87.232	54.506	0.000	282.067
Quantity of RDT&E Articles											

Note

There was no funding request in FY2011. FY2012-FY2016 is for the Integrated Electronic Warfare Systems (IEWS).

A. Mission Description and Budget Item Justification

The Integrated Electronic Warfare (IEW) Family of Systems (FoS) will provide Electronic Warfare capabilities to the Army and Joint Force Commander with a modular, scalable and interoperable architecture to allow tailored responses to a variety of EW threats/scenarios. The program is structured along three lines of effort: Multi-Function EW (MFEW), EW Planning & Management Tools (EWPMT), and Defensive Electronic Attack (DEA). The MFEW FoS will provide Offensive Electronic Attack (OEA) capability organic to the Brigade Combat Team (BCT) through a Family of Systems (FoS) including ground vehicle, man-pack, fixed site, and airborne variants. The EWPMT will provide planning capabilities to coordinate, manage, and deconflict unit EW activities; employ EW assets to conduct offensive EW targeting, and synchronize EW spectrum operations within an Effects/Fires Cell as an element of Mission Command. The DEA FoS includes mounted, dismounted and fixed site variants to provide force protection to personnel, equipment, and facilities. FY2012 funds will support the establishment of a Program Office(s), preparation of Milestone Documentation and pre-acquisition activities for EWPMT.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: IEWS	-	-	7.393
Description: The IEW System (IEWS) will consist of an Electronic Warfare Planning and Management Tool (EWPMT), Multi-Functional EW (Offensive Electronic Attack) and Defensive EA systems. ***FY 2012 Plans:*** Establish Program Office, prepare technical and specification documentation in support of Milestone B for release of solicitation for engineering and manufacturing development (EMD) phase of the EWPMT.			
Accomplishments/Planned Programs Subtotals	-	-	7.393

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT VS6: *INTEGRATED ELECTRONIC WARFARE SYSTEMS*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPA SSN: K00000: *Integrated Electronic Warfare Systems (IEWS)*								44.989	200.754	0.000	245.743

D. Acquisition Strategy

FY12 IEWS efforts will consist of completion of Material Solution analysis phase efforts to include AoAs that will inform a Technology Development strategy, and initial actions towards a technology development contract. The EWPMT program will initiate first, with an anticipated MS B decision in 4Q FY12.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT VS6: *INTEGRATED ELECTRONIC WARFARE SYSTEMS*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO Staff/Travel	Allot	PM Electronic Warfare:Aberdeen Proving Ground, MD	-	-		0.975		-		0.975	Continuing	Continuing	0.000
Program and Technical Assistance support	C/FFPLOE	TBD:Aberdeen Proving Ground, MD	-	-		0.489		-		0.489	Continuing	Continuing	0.000
		Subtotal	-	-		1.464		-		1.464			0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IEWS Engineering and Development	C/CPFF	TBD:TBD	-	-		3.764		-		3.764	Continuing	Continuing	Continuing
		Subtotal	-	-		3.764		-		3.764			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	MIPR	USACECOM:Aberdeen Proving Ground	-	-		2.165		-		2.165	Continuing	Continuing	Continuing
Technical/Engineering Support	C/FFPLOE	TBD:TBD	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	-		2.165		-		2.165			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development testing	MIPR	Various:Various	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	-		-		-		-			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT VS6: *INTEGRATED ELECTRONIC WARFARE SYSTEMS*

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		7.393		-		7.393			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT VS6: *INTEGRATED ELECTRONIC WARFARE SYSTEMS*

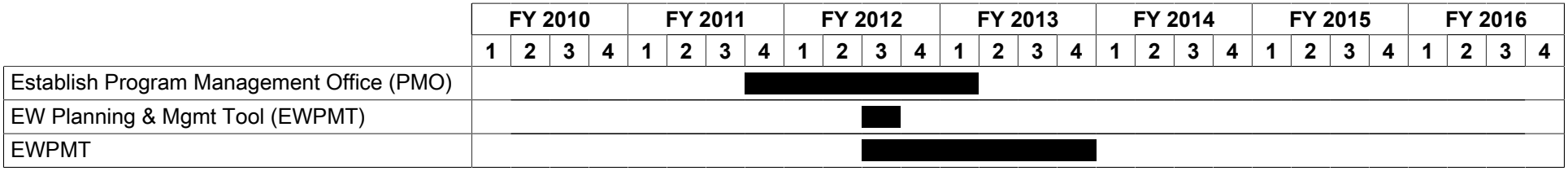

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604270A: *Electronic Warfare Development*	**PROJECT** VS6: *INTEGRATED ELECTRONIC WARFARE SYSTEMS*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Establish Program Management Office (PMO)	4	2011	1	2013
EW Planning & Mgmt Tool (EWPMT)	3	2012	3	2012
EWPMT	3	2012	4	2013

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT VU7: *Common Missile Warning System*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
VU7: *Common Missile Warning System*	-	-	17.141	-	17.141	11.964	-	-	-	0.000	29.105
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

This is a continuation of the L20 which has been broken out into subprograms. CMWS is the subprogram identified as VU7.

The US Army operational requirements concept for Infrared (IR) countermeasure systems is known as the Suite of Integrated Infrared Countermeasures (SIIRCM). It is an integrated warning and countermeasure system to enhance aircraft survivability against IR guided threat missile systems. The core element of the SIIRCM concept is the Advanced Threat Infrared Countermeasure/Common Missile Warning System (ATIRCM/CMWS) Program. The ATIRCM/CMWS, a subsystem to a host aircraft, is an integrated ultraviolet (UV) missile warning system and an IR Laser Jamming and Improved Countermeasure Dispenser (ICMD).

The ATIRCM/CMWS program was restructured per an Under Secretary of Defense for Acquisition, Technology, and Logistics (USD (AT&L)) Acquisition Decision Memorandum (ADM) dated April 15, 2009. USD (AT&L) designated the ATIRCM/CMWS program as an Acquisition Category (ACAT) ID special interest program, and directed the establishment of the CMWS, ATIRCM QRC and Common Infrared Countermeasure (CIRCM) subprograms. On September 3, 2010, Mr Kendall, Principal Deputy to the USD(AT&L), Acting DAE signed an ADM approving the reinstatement of MS C for CMWS and redesignating the ATIRCM QRC and CMWS subprograms as ACAT IC. Mr. Kendall also approved new baselines for each subprogram.

The CMWS subprogram is a UV missile warning system that cues both flare and laser countermeasures to defeat incoming infrared missiles. The B-kit consists of the components which perform the missile detection and identification, false alarm rejection, hostile missile declaration, and countermeasure employment functions of the system. The CMWS Electronic Control Unit (ECU) receives UV missile detection data from Electro-optic Missile Sensors (EOMS) and sends a missile alert signal to alert crewmen via on-board avionics, and ATIRCM QRC Jam Head Control Unit. Tier 1 threat missiles detected and tracked by the CMWS are subsequently defeated by a combination of missile seeker countermeasures, including decoy flares and ATIRCM IR Laser Jamming (CH-47 platform). The CMWS Generation 3 (Gen 3) Electronics Control Unit (ECU) will meet Tier 1 requirements while retaining a low false alarm rate. The Gen 3 ECU is required to obtain a Full Materiel Release for CMWS and ensure protection against emerging IR guided missile threats.

The A-kit for CMWS includes mounting hardware, wiring harnesses, cables, and other components necessary to install and interface the mission kit on host aircraft. The A-kit ensures the mission kit is functionally and physically operational with a specific host aircraft type.

Justification

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604270A: *Electronic Warfare Development*	**PROJECT** VU7: *Common Missile Warning System*

RDT&E (CMWS)
Fiscal Year 2012 Base RDT&E dollars in the amount of $17,141 million supports design and development of Tier 2/3 upgrades and CMWS enhanced sensor studies.

CMWS will continue to spend RDT&E funds on three areas including next generation sensor studies, new algorithm updates (Tier 2/3 upgrades) to counter new variants/missiles, and continue program security initiatives. The sensor studies will evaluate current CMWS technology as compared to the Navy JATAS program and look at the pros and cons of UV missile warning sensor compared to infrared missile warning sensor for Army aircraft. The study will also examine other technologies to possibly enhance the CMWS UV sensor with either an IR or acoustic adjunct to determine possible cost savings to the USG.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: Development Effort	-	-	17.141
Description: ATIRCM/CMWS RDT&E funding supports the design and development for the CMWS Generation 3 (Gen 3) Electronic Control Unit (ECU), CMWS Enhanced Sensor and CMWS Tier 2/3 enhancement. ***FY 2012 Plans:*** RDT&E funding supports the design and development of the CMWS Tier 2/3 enhancement and the CMWS Enhanced Sensor studies.			
Accomplishments/Planned Programs Subtotals	-	-	17.141

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• AZ3517: *APA, BA 4*			162.811		162.811		151.409	113.666	178.134	0.000	757.131

D. Acquisition Strategy

The current ATIRCM/CMWS Acquisition Program Baseline is dated September 2010, and the program is fully funded to the CAPE ICE. The acquisition strategy includes buying CMWS separately from ATIRCM and installation of A-kits on all modernized aircraft. The current CMWS production contract is a fixed-priced, Indefinite Delivery, Indefinite Quantity (IDIQ) contract. The Gen 3 ECU became a part of the system in Fiscal Year 2010, and fielding will begin in Fiscal Year 2012. The ATIRCM QRC effort was procured using three letter contracts; two for ATIRCM QRC A-kits and one for ATIRCM QRC B-kits.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT VU7: *Common Missile Warning System*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS System Engineering Program Management	Various	PM ASE, HSV, AL:-	88.613	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	88.613	-		-		-		-			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS Modeling and Simulation	Various	CAS, HSV, AL:-	6.000	-		1.200		-		1.200	Continuing	Continuing	Continuing
CMWS Enhanced Sensor Study & Evaluation	Various	TBD:-	-	-		13.936		-		13.936	Continuing	Continuing	Continuing
CMWS Tier 2/3 Threat Upgrades	Various	Various:-	2.475	-		1.000		-		1.000	Continuing	Continuing	Continuing
CMWS Development Engineering	Various	Various:-	43.982	-		1.005		-		1.005	Continuing	Continuing	Continuing
CMWS Gen 3 ECU ETC	Various	Various:-	14.140	-		-		-		-	Continuing	Continuing	Continuing
CMWS Gen 3 Providence Additional Phases	Various	TBD:-	5.210	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	71.807	-		17.141		-		17.141			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS Contractor Support	SS/FP	Various:-	37.911	-		-		-		-	Continuing	Continuing	Continuing
CMWS Matrix Support	Various	Various:-	3.055	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	40.966	-		-		-		-			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT VU7: *Common Missile Warning System*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	201.386	-		17.141		-		17.141			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT VU7: *Common Missile Warning System*

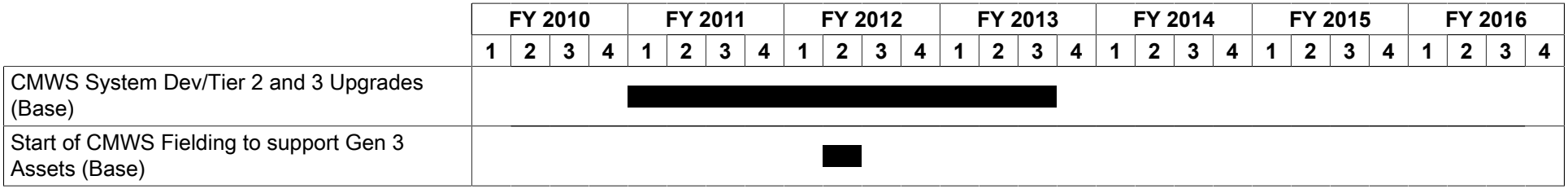

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604270A: *Electronic Warfare Development*	**PROJECT** VU7: *Common Missile Warning System*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CMWS System Dev/Tier 2 and 3 Upgrades (Base)	1	2011	3	2013
Start of CMWS Fielding to support Gen 3 Assets (Base)	2	2012	2	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT VU8: *Common Infrared Counter Measure*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
VU8: *Common Infrared Counter Measure*	-	-	67.177	-	67.177	124.031	88.723	15.918	11.281	0.000	307.130
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

This is a continuation of the L20 which has been broken out into subprograms. CIRCM is the subprogram identified as VU8.

The CIRCM (next generation ATIRCM) subprogram is an infrared countermeasure system that interfaces with a Missile Warning System (MWS) to provide near spherical coverage of the host platform in order to defeat all IR threats. In an ADM dated July 19, 2010, the Defense Acquisition Executive (DAE) directed that the SIIRCM ORD be the requirement baseline for the CIRCM, in lieu of an Initial Capabilities Document (ICD). The DAE directed that CIRCM provide the sole acquisition of future laser based infrared countermeasure systems for all rotary-wing, tilt-rotor, and small fixed wing aircraft across the Department of Defense. The CIRCM subprogram is projected to reach Milestone A in Fiscal Year 2011.

The A-kit for CIRCM includes mounting hardware, wiring harnesses, cables, and other components necessary to install and interface the mission kit on host aircraft. The A-kit ensures the mission kit is functionally and physically operational with a specific host aircraft type.

Justification

RDT&E (CIRCM)
Fiscal Year 2012 Base RDT&E dollars in the amount of $67,177 million continues the CIRCM Technology Development phase.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: Development Efforts	-	-	67.177
Description: RDT&E dollars begins the design and development of the CIRCM system. ***FY 2012 Plans:*** RDT&E dollars support the CIRCM Technology Development phase.			
Accomplishments/Planned Programs Subtotals	-	-	67.177

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT VU8: *Common Infrared Counter Measure*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• ****: *and APA, BA 4 AZ3537*								89.123	118.347	0.000	207.470

D. Acquisition Strategy

After a full and open competition in Fiscal Year 2011 for the CIRCM Technology Development (TD) phase, at least two contractors will be selected and awarded TD contracts. CIRCM will continue pre-MS B activities and enter into a competition for EMD in Fiscal Year 2013. MS B approval will be followed by award of a single EMD contract with priced options for LRIP and for the procurement of all technical data relevant to the performance of this contract or life cycle of this program. Upon CIRCM MS C approval, the LRIP option will be exercised and the program will immediately enter the Production & Deployment phase. At this time, PM IRCM intends to award a fixed price contract for CIRCM Full Rate Production.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT VU8: *Common Infrared Counter Measure*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CIRCM System Engineering Program Management	Various	PM ASE, HSV, AL:-	-	-		9.425		-		9.425	Continuing	Continuing	Continuing
		Subtotal	-	-		9.425		-		9.425			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CIRCM Non-Recurring Engineering	C/CPFF	TBD:-	-	-		39.118		-		39.118	Continuing	Continuing	Continuing
CIRCM Development Facilities	Various	Various:-	-	-		6.000		-		6.000	Continuing	Continuing	Continuing
CIRCM Other R&D	Various	Various:-	-	-		10.934		-		10.934	Continuing	Continuing	Continuing
		Subtotal	-	-		56.052		-		56.052			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CIRCM Support Equipment	Various	TBD:-	-	-		0.500		-		0.500	Continuing	Continuing	Continuing
		Subtotal	-	-		0.500		-		0.500			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CIRCM System Test & Evaluation	Various	Various:-	-	-		1.200		-		1.200	Continuing	Continuing	Continuing
		Subtotal	-	-		1.200		-		1.200			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604270A: *Electronic Warfare Development*	PROJECT VU8: *Common Infrared Counter Measure*

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		67.177		-		67.177			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604270A: *Electronic Warfare Development*	**PROJECT** VU8: *Common Infrared Counter Measure*

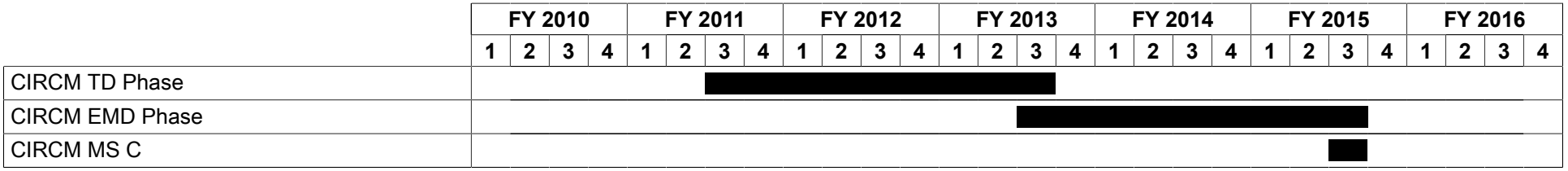

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604270A: *Electronic Warfare Development*	**PROJECT** VU8: *Common Infrared Counter Measure*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CIRCM TD Phase	3	2011	3	2013
CIRCM EMD Phase	3	2013	3	2015
CIRCM MS C	3	2015	3	2015

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604280A: *Joint Tactical Radio*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.784	-	-	-	194.171	115.845	45.192	26.092	Continuing	Continuing
162: *Network Enterprise Domain (NED)*	-	0.784	-	-	-	194.171	115.845	45.192	26.092	Continuing	Continuing

Note

Change Summary Explanation: FY 2012 was transferred to JTRS Navy PE 0604280N.

**The JTRS budget justification will be found in the Navy FY 2012 President's Budget under Joint Tactical Radio System Program (PE 0604280N, BA5).

A. Mission Description and Budget Item Justification

The JTRS budget justification will be found in the Navy FY 2012 President's Budget under Joint Tactical Radio System Program (PE 0604280N, BA5).

The mission of the Joint Tactical Radio System (JTRS) is to provide the Department of Defense (DoD) with software programmable, reconfigurable digital radio systems to meet Joint Vision (JV) 2010/2020 requirements for interoperability, flexibility, adaptability, and information exchange. JTRS will acquire a family of affordable, scaleable, high-capacity, interoperable Line of Sight (LoS) and Beyond LoS radios to support simultaneous networked voice/data/video transmissions with low probability of intercept. The program will provide operational forces with an upgraded, interoperable communications capability for improved battle space management and increased Warfighter effectiveness. Interoperability with allied and coalition partners is pursued through international cooperative efforts, including signed agreements with Japan, UK and Sweden.

Beginning in FY07, all JTRS RDT&E Program Elements (PE) are realigned under the Navy JTRS PE (0604280N) for the current Budget Year (BY) only. From the BY +1 through the end of the FYDP, each Military Department (MILDEP) budgets for a portion of the total program. This transition results in the total JTRS development funding being managed out of three MILDEP PEs (0604280A, 0604280N, and 0604280F) across the FYDP, and consolidated into one Navy PE (0604280N) for the current BY.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604280A: *Joint Tactical Radio*	

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	0.784	168.937	-	168.937
Current President's Budget	-	0.784	-	-	-
Total Adjustments	-	-	-168.937	-	-168.937
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-168.937	-	-168.937

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604280A: *Joint Tactical Radio*	PROJECT 162: *Network Enterprise Domain (NED)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
162: *Network Enterprise Domain (NED)*	-	0.784	-	-	-	194.171	115.845	45.192	26.092	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Joint Tactical Radio System (JTRS) budget justification will be found in the Navy FY 2012 President's Budget under Joint Tactical Radio System Program (PE 0604280N, BA5) since the JTRS program is a joint program and the Navy is the lead Service for the JTRS development budget.

The mission of the JTRS is to provide the Department of Defense (DoD) with software programmable, reconfigurable digital radio systems to meet Joint Vision (JV) 2010/2020 requirements for interoperability, flexibility, adaptability, and information exchange. JTRS will acquire a family of affordable, scaleable, high-capacity, interoperable Line of Sight (LoS) and Beyond LoS radios to support simultaneous networked voice/data/video transmissions with low probability of intercept. The program will provide operational forces with an upgraded, interoperable communications capability for improved battle space management and increased Warfighter effectiveness. Interoperability with allied and coalition partners is pursued through international cooperative efforts, including signed agreements with Japan, UK and Sweden.

Beginning in FY07, all JTRS RDT&E Program Elements (PE) are realigned under the Navy JTRS PE (0604280N) for the current Budget Year (BY) only. From the BY+1 through the end of the FYDP, all JTRS RDT&E projects are funded in approximately three equal shares by each Military Department (MILDEP). This transition results in the total JTRS development funding being managed out of three MILDEP PEs (0604280A, 0604280N, and 0604280F) across the FYDP, and consolidated into one Navy PE (0604280N) for the current BY.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: JTRS Network Enterprise Domain	-	0.784	-
Articles:		0	
Description: The Joint Tactical Radio System (JTRS) budget justification will be found in the Navy FY 2012 President's Budget under Joint Tactical Radio System Program (PE 0604280N, BA5) since the JTRS program is a joint program and the Navy is the lead Service for the JTRS development budget.			
FY 2011 Plans: Delivers portable, interoperable, mobile ad-hoc networking waveforms and network enterprise services to enhance tactical warfighting capabilities.			
Accomplishments/Planned Programs Subtotals	-	0.784	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604280A: *Joint Tactical Radio*	PROJECT 162: *Network Enterprise Domain (NED)*

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

The JTRS budget justification will be found in the Navy FY 2012 President's Budget under Joint Tactical Radio System Program (PE 0604280N, BA5) since the JTRS program is a joint program and the Navy is the lead Service for the JTRS development budget.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604280A: *Joint Tactical Radio*	PROJECT 162: *Network Enterprise Domain (NED)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SEE FOOTNOTE	TBD	TBD:TBD	-	0.784		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	0.784		-		-		-			

Remarks

**The JTRS budget justification will be found in the Navy FY 2012 President's Budget under Joint Tactical Radio System Program (PE 0604280N, BA5) since the JTRS program is a joint program and the Navy is the lead Service for the JTRS development budget.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	0.784		-		-		-			

Remarks

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604321A: *ALL SOURCE ANALYSIS SYSTEM*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	12.562	30.674	17.412	-	17.412	3.217	0.102	-	-	Continuing	Continuing
B41: *CI/HUMINT Software Products (MIP)*	2.676	14.430	0.102	-	0.102	0.105	-	-	-	Continuing	Continuing
B51: *SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM*	9.886	16.244	17.310	-	17.310	3.112	0.102	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

The All Source Analysis System (ASAS) provided US Army commanders at all echelons from battalion to Army Service Component Command (ASCC) with automated support to the management and planning, processing and analysis, and dissemination of intelligence, counterintelligence, and electronic warfare. ASAS provided the means to enhance the commander's timely and comprehensive understanding of enemy deployments, capabilities, and potential courses of action. The system used standard joint and Army protocols and message formats to interface with selected National, joint, theater, and tactical intelligence, surveillance, and reconnaissance systems and preprocessors and Army, joint, and coalition battle command systems. The ASAS Family of Systems migrated into the Distributed Common Ground System-Army (DCGS-A) program and Army is using it as the initial platform to provide accelerated DCGS-A capabilities to the force.

The Counterintelligence and Human Intelligence Automated Reporting and Collection Systems (CHARCS), formerly known as Counterintelligence and Human Intelligence (CI/HUMINT) Information Management System (CHIMS), provides the Army automation support for collection and reporting of CI/HUMINT data to satisfy tactical human intelligence requirements. CHARCS functionality provides support for CI/HUMINT information collection, reporting, investigation, interrogation, biometrics, and document exploitation operations. The CHARCS architecture extends from the individual Tactical HUMINT team soldier or CI agent to Theater and National intelligence organizations. CHARCS provides systems to all Army Commands (ARCOM), Special Forces, Reserves, National Guard, Stryker Brigade Combat Teams (SBCT), and the training base. CHARCS systems produce and disseminate messages and reports through an array of communications systems including: combat Net Radio, Single Channel Ground and Airborne Radio System (SINCGARS), Portable Radio Communications(PRC)-150 Secure Telephone Equipment (STE), Secure Telephone Unit (STU), satellite, and other organic communications devices. The CHARCS systems reports collected intelligence directly to Operational Management Teams (OMT) of U.S. Army intelligence units. Future development efforts will provide CI agents and HUMINT collectors improved collection, reporting, biometrics, language, communications and mission management capabilities.

The Machine - Foreign Language Translation System (M-FLTS) program is to develop, acquire, field and sustain the warfighter with a basic automated foreign speech and text translation capability into Army systems of record, to augment and compliment limited human linguistic resources. These stand-alone and integrated automated translation capabilities will be applicable across three different system configurations; a hand-held/wearable portable device, a lap-top or mobile device, and in a networked system. The software modules will translate English into a prioritized listing of languages in a prioritized collection of domains. M-FLTS will be interoperable with commercial off-the-shelf (COTS), or government-off-the-shelf (GOTS) automation equipment to include the Net Enabled Command Capability

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604321A: *ALL SOURCE ANALYSIS SYSTEM*

(NECC), the Distributed Common Ground System (DCGS), Battle Command System (BCS), Soldier as a System (SaaS), Ground (GSS), Mounted (MSS) and Air-Soldier Systems (Air-SS), DoD Intelligence Information Systems (DoDIIS) and any associated devices and peripherals.

FY 2011 funding continues the development of improved counterintelligence and human intelligence collection and reporting capabilities under CHARCS.

FY 2011 funds development of Foreign Language Translation Systems.

ASAS RDT&E funding discontinued after FY 2009.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	13.039	30.674	13.981	-	13.981
Current President's Budget	12.562	30.674	17.412	-	17.412
Total Adjustments	-0.477	-	3.431	-	3.431
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-0.477	-	3.431	-	3.431

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604321A: *ALL SOURCE ANALYSIS SYSTEM*	PROJECT B41: *CI/HUMINT Software Products (MIP)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
B41: *CI/HUMINT Software Products (MIP)*	2.676	14.430	0.102	-	0.102	0.105	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Counterintelligence (CI) and Human Intelligence (HUMINT) Automated Reporting and Collection System (CHARCS) is the Army's CI and HUMINT tactical and reporting system. CHARCS provides automation support for information collection, reporting, investigations, source and interrogation operations and document exploitation. The CHARCS automation architecture extends from the individual HUMINT team soldier or CI agent to the Division and Corps Analysis and Control Element (ACE). CHARCS reports digital data such as maps, overlays, images, video, biometrics, scanned documents and audio files. These media are transmitted through secure networks and interfaces with the Distributed Common Ground Systems-Army (DCGS-A) for detailed analysis and creation of finished intelligence products. Collection and reporting teams at Military Intelligence (MI) battalions and their operational managers are equipped with one of two CHARCS systems. The first is the AN/PYQ-8 Individual Tactical Reporting Tool (ITRT) which provides hand-held collections and processing devices for individual HUMINT team member or CI agents. The second is the AN/PYQ-3 CI/HUMINT Automated Tool Set (CHATS) which provides the team leader (who normally directs 3-5 team members) tools to process and manage team-collected information and a robust set of devices such as printers, scanners, cameras and audio recorders to assist the collection mission. The CHATS is also used by Operational Management Team (OMT) (who normally directs 5-10 collection and reporting teams). Each CHATS has an associated Mission Support Peripheral Sets and Kits (MS-PSK) or Collection Peripheral Sets and Kits (C-PSK), and each ITRT has an associated C-PSK.

The C-PSK provides specialized collection component capabilities to support CI/HUMINT collection missions as an addition to the CHATS and ITRT. C-PSK capabilities are commercial-off-the-shelf (COTS) technologies and include video and camera equipment, global positioning system (GPS), voice recording device and infrared strobe lights. The MS-PSK provides specialized collection component capabilities to support CI/HUMINT collection missions as an addition to the AN/PYQ-3 (CHATS). MS-PSK capabilities are COTS technologies and include language triage and translation, night vision photography and video, binocular, captured materiel tracking, Document and Media Exploitation (DOMEX) and Digital Media Forensics software, and Document Exploitation (DOCEX) software, and a handheld biometric capability for identification.

FY2012 Base amount of $.102 million RDTE funds additional tests of the CHARCS V1.3 baseline software, software enhancements, service packs, Information Assurance Vulnerability Alert (IAVA) and DIA security updates and compliance, and hardware integration.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: RDTE: Continue security and accreditation, enhancement and hardware integration testing of CHARCS software.	2.676	14.430	0.102
Articles:	0	0	
Description: Funds software testing, development and maintenance, PMO support and systems testing.			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604321A: *ALL SOURCE ANALYSIS SYSTEM*	**PROJECT** B41: *CI/HUMINT Software Products (MIP)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Funded $2434K in continued development of improved collection and reporting software functionality, and 242K in continuted test and security accreditation efforts.. ***FY 2011 Plans:*** will fund continued development of improved collection and reporting software functionality, and continued test and security accreditation efforts. ***FY 2012 Plans:*** $102K will fund additional tests of the CHARCS V1.3 baseline software, software enhancements, service packs, IAVA and DIA security updates and compliance, and hardware integration.			
Accomplishments/Planned Programs Subtotals	2.676	14.430	0.102

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• BK5275: *CI HUMINT AUTO REPRTING AND COLL (CHARCS) (MIP)*	38.703	59.693	3.500		3.500		3.504	3.679	3.779	Continuing	Continuing

D. Acquisition Strategy

Program capability documentation is in the process of being updated to support the removal of Increment II funding. PD CHARCS is a post-Milestone C program, scheduled to achieve Full Operational Capability of software version v1.3 in 3Q FY 12. CHARCS software is the common software on two collection and reporting products: CI/HUMINT Automated Tool Set (CHATS) and Individual Tactical Reporting Tool (ITRT). CHARCS software requires development to keep pace with evolving capability requirements, DIA and IAVA compliance, and to meet JROC approved requirements documented in the Increment I CPD. PD is assessing available capabilities to support Increment I CPD requirements.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604321A: *ALL SOURCE ANALYSIS SYSTEM*	PROJECT B41: *CI/HUMINT Software Products (MIP)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management - PD CHARCS Government Acquisition Mgmt - Direct Costs	Allot	ASPO/PD CHARCS:Alexandria, VA	1.777	1.276		-		-		-	Continuing	Continuing	Continuing
		Subtotal	1.777	1.276		-		-		-			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CHARCS Software Development	TBD	TBD Competitive:TBD	9.743	11.521		-		-		-	Continuing	Continuing	Continuing
CECOM Transition Support	TBD	CECOM, SE Engineering Center:Ft Huachuca	1.028	0.500		-		-		-	Continuing	Continuing	Continuing
		Subtotal	10.771	12.021		-		-		-			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition and Engineering Services- Program Office Support	Various	CACI Technologies, Inc.:Chantilly, VA	-	0.687		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	0.687		-		-		-			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604321A: *ALL SOURCE ANALYSIS SYSTEM*	PROJECT B41: *CI/HUMINT Software Products (MIP)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test / Security Accreditation Testing / HW Integration Testing	MIPR	ATEC:Multiple	0.159	0.075		0.102		-		0.102	Continuing	Continuing	Continuing
Test Support and Interoperability	MIPR	CTSF,:Ft. Hood, TX	0.110	0.300		-		-		-	Continuing	Continuing	0.000
Security Accreditation Collateral	MIPR	CECOM:Ft. Monmouth, NJ	0.280	0.061		-		-		-	Continuing	Continuing	0.000
Safety release	MIPR	CECOM:Ft. Monmouth, NJ	0.025	0.010		-		-		-	Continuing	Continuing	0.000
		Subtotal	0.574	0.446		0.102		-		0.102			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	13.122	14.430		0.102		-		0.102			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604321A: *ALL SOURCE ANALYSIS SYSTEM*	PROJECT B41: *CI/HUMINT Software Products (MIP)*

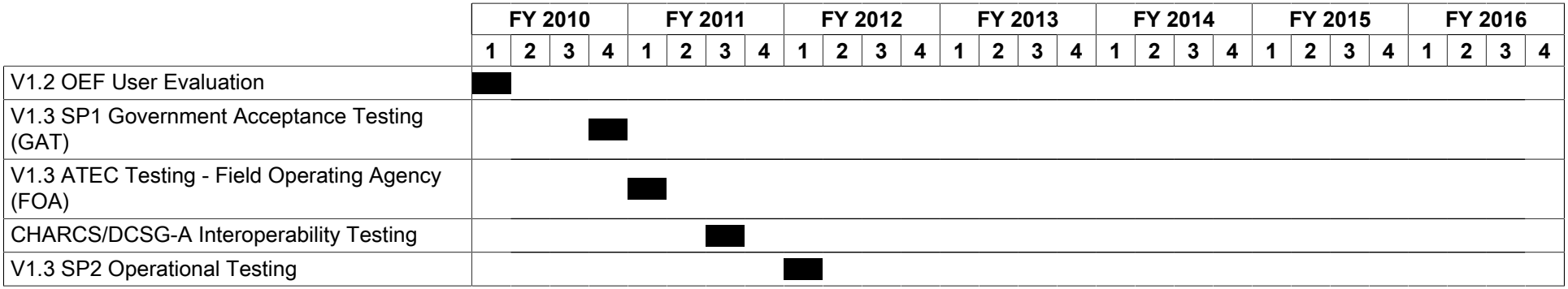

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604321A: *ALL SOURCE ANALYSIS SYSTEM*	**PROJECT** B41: *CI/HUMINT Software Products (MIP)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
V1.2 OEF User Evaluation	1	2010	1	2010
V1.3 SP1 Government Acceptance Testing (GAT)	4	2010	4	2010
V1.3 ATEC Testing - Field Operating Agency (FOA)	1	2011	1	2011
CHARCS/DCSG-A Interoperability Testing	3	2011	3	2011
V1.3 SP2 Operational Testing	1	2012	1	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604321A: *ALL SOURCE ANALYSIS SYSTEM*	PROJECT B51: *SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
B51: *SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM*	9.886	16.244	17.310	-	17.310	3.112	0.102	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Machine Foreign Language Translation System (MFLTS), formerly Sequoyah, develops, fields, and sustains a basic automated foreign speech and text translation capability for Army tactical systems to augment and compliment limited human linguistic resources. These integrated automated translation capabilities will be applicable across three different system configurations; a hand-held/wearable portable device, a laptop/mobile device, and in a networked/web-enabled system. The software modules will translate English from a prioritized list of languages in a prioritized collection of domains (e.g. medical, intelligence, base security). MFLTS will be interoperable with Commercial Off-The-Shelf (COTS) or Government Off-The-Shelf (GOTS) automation equipment to include the Distributed Common Ground System-Army (DCGS-A), Nett Warrior (NW), and Counterintelligence Human Intelligence Automated Reporting and Collection System (CHARCS).

FY12 Base RDTE dollars in the amount of $17.354 million will conclude the Technology Development (TD) phase and begin the Engineering and Manufacturing Development (EMD) phase to provide deployable automated translation software.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Product Development (PD)	6.711	11.500	10.000
Articles:	0	0	
Description: Development and integration of Critical Technology Elements (CTE) of Automated Speech Recognition (ASR), Optical Character Recognition (OCR), and Machine Language Translation Translation Engine (MLT TE) software			
FY 2010 Accomplishments: Continued development and integration of Critical Technology Elements (CTE) of Automated Speech Recognition (ASR), Optical Character Recognition (OCR), and Machine Language Translation Translation Engine (MLT TE) software			
FY 2011 Plans: Continuing development and integration of Critical Technology Elements (CTE) of Automated Speech Recognition (ASR), Optical Character Recognition (OCR), and Machine Language Translation Translation Engine (MLT TE) software			
FY 2012 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604321A: *ALL SOURCE ANALYSIS SYSTEM*	PROJECT B51: *SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Will continue to develop and integrate of Critical Technology Elements (CTE) of Automated Speech Recognition (ASR), Optical Character Recognition (OCR), and Machine Language Translation Translation Engine (MLT TE) software			
Title: PD Support Costs and Management Services	2.490	2.894	3.320
Articles:	0	0	
Description: Program Support and Matrixed services at other Government activities ***FY 2010 Accomplishments:*** Continued program support and matrixed services at other Government activities ***FY 2011 Plans:*** Continuing program support and matrixed services at other Government activities ***FY 2012 Plans:*** Will continue to provide program support and matrixed services at other Government activities			
Title: Test and Evaluation of MFLTS Capabilities	-	1.800	2.100
Articles:		0	
Description: Test the automated language translation capabilities using established metrics, collected standard data sets, and standardized objective validation process ***FY 2011 Plans:*** Testing of the automated language translation capabilities using established metrics, collected standard data sets, and standardized objective validation process ***FY 2012 Plans:*** Will continue test of the automated language translation capabilities using established metrics, collected standard data sets, and standardized objective validation process			
Title: Metric Development of MFLTS Capabilities	0.685	0.050	-
Articles:	0	0	
Description: Interagency Language Roundtable (ILR) automated metric development ***FY 2010 Accomplishments:*** ILR automated metric development ***FY 2011 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604321A: *ALL SOURCE ANALYSIS SYSTEM*	PROJECT B51: *SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Completes ILR automated metric development			
Title: Data Collection of Vocabulary and Test Sets	-	-	1.890
Description: Development of the vocabulary collection and testing sets in the prioritized languages			
FY 2012 Plans: Funds the activities to develop the vocabulary collection library and test sets for the next set of prioritized languages, as determined and validated by the FY11 MFLTS General Officers' Steering Group (GOSG)			
Accomplishments/Planned Programs Subtotals	9.886	16.244	17.310

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• B88605: *Machine Foreign Language Translation System - MFLTS*							6.543			Continuing	Continuing

D. Acquisition Strategy

The MFLTS acquisition strategy for the Technology Development (TD) Phase is to develop two open software architecture prototypes using full and open competition that will allow the addition, upgrade and replacement of translation system components for integration into existing Programs. During the Engineering and Manufacturing Development (EMD) Phase, the program will integrate technology demonstrated during the TD Phase to meet Key Performance Parameters (KPPs). This includes the requirement to meet an Interagency Language Roundtable (ILR) level of 1 for three speech translation modules and an ILR level of 1+ for two text translation modules in hand-held/wearable portable, laptop/mobile, and networked/web-enabled system configurations. After completion of EMD, there will be a full and open competition for the production.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604321A: *ALL SOURCE ANALYSIS SYSTEM*	PROJECT B51: *SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support	MIPR	ASPO:Ft. Belvoir, VA	1.058	1.235		1.362		-		1.362	Continuing	Continuing	Continuing
		Subtotal	1.058	1.235		1.362		-		1.362			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Manufacturing Development (EMD) Contracts	MIPR	TBD:TBD	-	4.500		10.000		-		10.000	Continuing	Continuing	Continuing
Technology Development (TD) Contracts	MIPR	TBD:TBD	1.530	7.000		-		-		-	Continuing	Continuing	Continuing
		Subtotal	1.530	11.500		10.000		-		10.000			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrixed services at other Government activities	MIPR	CERDEC:Ft. Monmouth, NJ	1.498	1.659		1.958		-		1.958	Continuing	Continuing	Continuing
		Subtotal	1.498	1.659		1.958		-		1.958			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test and Evaluation	MIPR	USA Test and Eval Command:Alexandria, VA	-	1.800		2.100		-		2.100	Continuing	Continuing	Continuing
ILR Metric Development	MIPR	NIST, DLI, MIT-LL:Various	0.655	0.050		-		-		-	Continuing	Continuing	Continuing
Data Collection	MIPR		3.022	-		1.890		-		1.890	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604321A: *ALL SOURCE ANALYSIS SYSTEM*	PROJECT B51: *SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Army Research Laboratory:Adelphi, MD											
		Subtotal	3.677	1.850		3.990		-		3.990			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7.763	16.244		17.310		-		17.310			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604321A: *ALL SOURCE ANALYSIS SYSTEM*	**PROJECT** B51: *SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM*

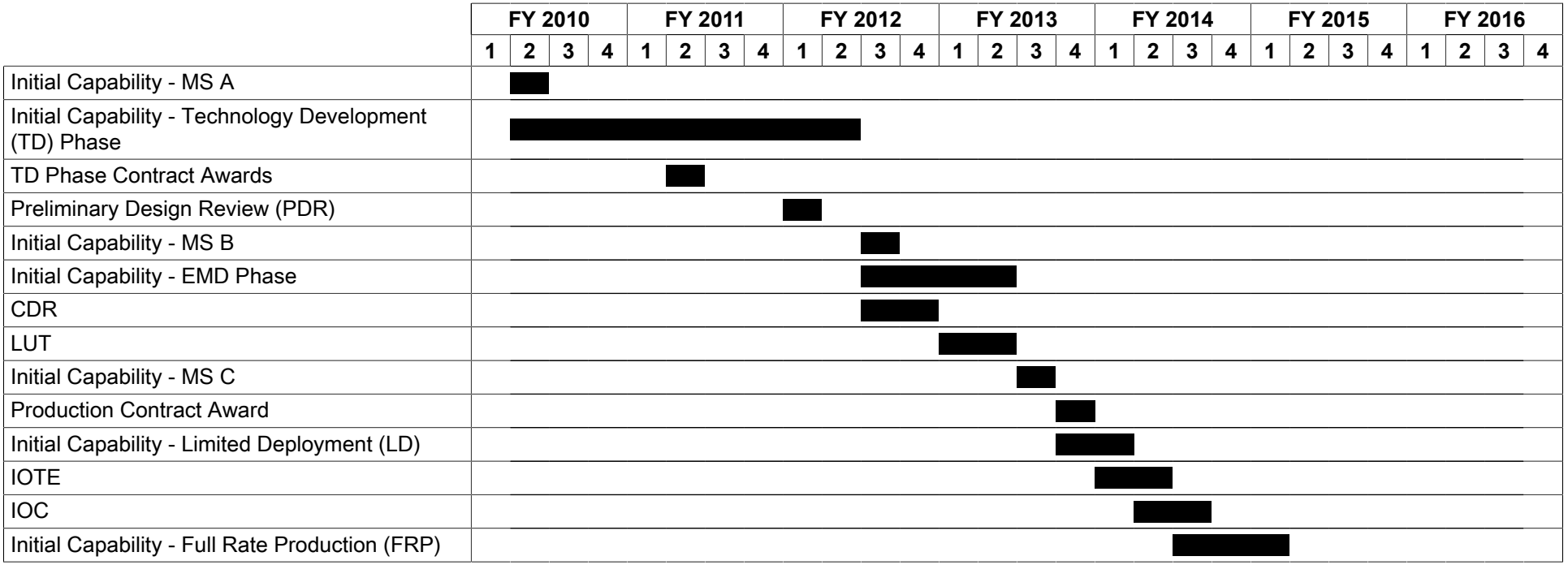

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604321A: *ALL SOURCE ANALYSIS SYSTEM*	**PROJECT** B51: *SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Initial Capability - MS A	2	2010	2	2010
Initial Capability - Technology Development (TD) Phase	2	2010	2	2012
TD Phase Contract Awards	2	2011	2	2011
Preliminary Design Review (PDR)	1	2012	1	2012
Initial Capability - MS B	3	2012	3	2012
Initial Capability - EMD Phase	3	2012	2	2013
CDR	3	2012	4	2012
LUT	1	2013	2	2013
Initial Capability - MS C	3	2013	3	2013
Production Contract Award	4	2013	4	2013
Initial Capability - Limited Deployment (LD)	4	2013	1	2014
IOTE	1	2014	2	2014
IOC	2	2014	3	2014
Initial Capability - Full Rate Production (FRP)	3	2014	1	2015

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604328A: *TRACTOR CAGE*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	20.564	23.194	26.577	-	26.577	23.264	25.886	21.477	10.188	Continuing	Continuing
C71: *DC71*	20.564	23.194	26.577	-	26.577	23.264	25.886	21.477	10.188	Continuing	Continuing

Note

Not Applicable

A. Mission Description and Budget Item Justification

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	20.564	23.194	26.577	-	26.577
Total Adjustments	20.564	23.194	26.577	-	26.577
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	20.564	23.194	26.577	-	26.577

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604328A: *TRACTOR CAGE*	PROJECT C71: *DC71*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
C71: *DC71*	20.564	23.194	26.577	-	26.577	23.264	25.886	21.477	10.188	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not Applicable

A. Mission Description and Budget Item Justification

Not Applicable

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Not Applicable	20.564	23.194	26.577
Articles:	0	0	
Description: Not Applicable			
FY 2010 Accomplishments: Not Applicable			
FY 2011 Plans: Not Applicable			
FY 2012 Plans: Not Applicable			
Accomplishments/Planned Programs Subtotals	20.564	23.194	26.577

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	64.930	80.337	73.728	-	73.728	48.553	44.802	47.454	38.270	Continuing	Continuing
033: *ADV CREW SVC WPN*	9.094	-	-	-	-	-	-	-	-	0.000	9.094
S58: *SOLDIER ENHANCEMENT PROGRAM*	4.517	4.850	3.275	-	3.275	3.243	4.161	4.100	4.189	Continuing	Continuing
S60: *CLOTHING & EQUIPMENT*	10.942	9.711	6.322	-	6.322	5.604	1.915	1.967	2.057	Continuing	Continuing
S61: *ACIS ENGINEERING DEVELOPMENT*	12.181	10.295	18.946	-	18.946	17.186	19.253	22.280	12.760	Continuing	Continuing
S62: *Counter-Defilade Target Engagement - SDD*	7.276	34.416	19.968	-	19.968	0.603	-	-	-	0.000	62.263
S63: *SMALL ARMS IMPROVEMENT*	9.653	19.805	18.168	-	18.168	14.361	14.364	14.207	14.374	Continuing	Continuing
S64: *COMMON REMOTELY OPERATED WPN SYS (CROWS)*	10.000	-	-	-	-	-	-	-	-	0.000	10.000
S70: *PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)*	1.267	1.260	3.063	-	3.063	3.568	1.142	1.116	1.128	Continuing	Continuing
VS5: *SOLDIER PROTECTIVE EQUIPMENT*	-	-	3.986	-	3.986	3.988	3.967	3.784	3.762	Continuing	Continuing

Note

Change Summary Explanation:

Fiscal Year 2010: Program Decrease - $18.248 million realigned to higher priority requirements.
Fiscal Year 2012: Program Increase - $14.141 million for development efforts associated with Aircrew Integrated System, Counter-Defilade Target Engagement - Individual Airburst Weapon System, Personnel Recovery Support System and Soldier Protective Equipment.

A. Mission Description and Budget Item Justification

FY 2012 budget request funds Infantry Support Weapons. This program element (PE) Engineering and Manufacturing Development (EMD) manages the Soldier as a system, with the goal of increasing Soldiers' combat effectiveness, increasing survivability, and improving the Soldiers' quality of life. It develops and tests prototypes of weapons, clothing, equipment, and other items useful to support the Soldier.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*

Project 033 (Advanced Crew Served Weapon) develops the Lightweight .50 Caliber Machine Gun which enables the Soldier to effectively suppress and incapacitate exposed personnel targets out to 2,000 meters as well as providing a capability to defeat light armored vehicles out to 1,500 meters. The new .50 Caliber weapon will reduce weight and recoil, and eliminate manual adjustment of headspace and timing.

Project S58 (Soldier Enhancement Program) supports accelerated integration, modernization, and enhancement efforts of lighter, more lethal weapons, and improved Soldier items including lighter, more comfortable load-bearing equipment, field gear, survivability items, communications equipment, and navigational aids.

Project S59 (Soldier Support Equipment) supports system development and prototyping of critical Soldier support systems and other combat service support equipment that will improve unit sustainability and combat effectiveness.

Project S60 (Clothing and Equipment) supports pre-production development of state-of-the-art individual clothing and equipment to improve the survivability, mobility and sustainment affecting the quality of life of the individual Soldier.

Project S61 (Aircrew Integrated Systems) provides System Development programs with improved aviator safety, survivability, and human performance that amplify the warfighting effectiveness and facilitates full-spectrum dominance of the Army aircraft including the AH-64 Apache/Longbow, CH-47 Chinook, UH/HH-60 Blackhawk, Light Utility Helicopter, and Armed Reconnaissance Helicopter.

Project S62 (Counter-Defilade Target Engagement) the XM25, Individual Airburst Weapon System (IAWS) delivers a 25mm programmable high explosive airburst (HEAB) round to defeat defilade and point areas targets out to approximately 600 meters. Accurate and lethal engagement of defilade targets at the squad level is the number one capability gap identified by the United States Army Infantry Center (USAIC).

Project S63 (Small Arms Improvements) demonstrates engineering development models or integrated commercial items designed to enhance lethality, target acquisition, fire control, training effectiveness, and reliability for small arms weapon systems and ammunition. FY2011 new programs include Improved Weapons Coatings, Personal Defense Weapon, 30 Round 5.56mm Magazine, Modular Handgun and Precision Sniper Rifle.

Project S64 (CROWS) funds will be applied to continue enhancing CROWS capability and reliability, and to increase its application across combat and tactical platforms. This capability will enhance the Soldier's survivability, lethality and situational awareness.

Project S70 (Personnel Recovery Support System) provides system research, development and testing of the Personal Recovery Support System/Personnel Recovery Support Equipment supporting operations to report and locate isolated, missing, detained or captured Soldiers.

Project VS5 (Soldier Protective Equipment) supports engineering and manufacturing development of Individual Soldier Ballistic Protection equipment. It will leverage advancements in technology to continue incremental improvements to body armor (to include improved outer tactical vests, plate carriers, and helmets) and other personal protective equipment.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	83.178	80.337	59.587	-	59.587
Current President's Budget	64.930	80.337	73.728	-	73.728
Total Adjustments	-18.248	-	14.141	-	14.141
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-18.248	-	14.141	-	14.141

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT 033: *ADV CREW SVC WPN*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
033: *ADV CREW SVC WPN*	9.094	-	-	-	-	-	-	-	-	0.000	9.094
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project develops the Lightweight .50 Caliber Machine Gun which will meet the U.S. Army/SOCOM requirements for a Lightweight Enhanced .50 Caliber Machine Gun. The project will result in the development of a lightweight .50 Caliber machine gun system enabling the Soldier to effectively suppress and incapacitate exposed personnel targets out to 2,000 meters, as well as providing a capability to defeat lightly armored vehicles out to 1,500 meters. Successful development of the Lightweight .50 Caliber Machine Gun will increase the warfighter's lethality while significantly reducing tactical load and supportability costs. The new .50 Caliber weapon will reduce weight and recoil, and eliminate manual adjustment of headspace and timing.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Integrated Logistics Support (ILS) ***Articles:*** ***Description:*** Description: Provide ILS for the Lightweight .50 Caliber Machine Gun. ***FY 2010 Accomplishments:*** Funding provided for ILS for the Lightweight .50 Caliber Machine Gun. FY2010 Accomplishments: Completed ILS technical docouementation and conducted provisioning conferences and logitics demonstrations.	0.200 0	-	-	-	-
Title: Weapon System Design Test ***Articles:*** ***Description:*** Description: Conduct weapon systems design test. ***FY 2010 Accomplishments:*** Funding provided to conduct weapon systems design test. FY 2010 Accomplishments: Conducted contractor testing to validate weapon design parameters and reliability.	8.827 0	-	-	-	-
Title: Small Business Innovative Research/Small Business Technology Transfer Program ***Articles:*** ***Description:*** Small Business Innovative Research/Small Business Technology Transfer Program	0.067 0	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT 033: *ADV CREW SVC WPN*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Army allocation to SBIR.					
Accomplishments/Planned Programs Subtotals	9.094	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• WTCV, G12800: *Lightweight .50 Caliber Machine Gun*	0.974	18.941	28.796	5.427	34.223		33.207	31.540	32.069	0.000	169.920

D. Acquisition Strategy

In support of the US Army Infantry Center (USAIC) Capability Production Document (CPD) for Enhanced .50 Caliber Machine Gun (M2A1), the Lightweight .50 Caliber Machine Gun will be developed. Milestone C is scheduled second quarter FY2012. The development contractor is General Dynamics Armament and Technical Products (GDATP) of Burlington, Vermont. The Acquisition Strategy (Sole Source), Acquisition Plan, and Milestone B were approved by the Milestone Decision Authority (MDA) - PEO Soldier.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S58: *SOLDIER ENHANCEMENT PROGRAM*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
S58: *SOLDIER ENHANCEMENT PROGRAM*	4.517	4.850	3.275	-	3.275	3.243	4.161	4.100	4.189	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This program supports accelerated integration, modernization, and capability enhancement efforts of lighter, more lethal weapons, including improved optics, sights, and fire controls; and improved soldier items including lighter, more comfortable load-bearing equipment, field gear, survivability items, communications equipment, and navigational aids. Soldiers are managed in three categories: Dismounted Soldiers, mounted Soldiers (air and ground vehicle), and other Soldiers. Projects are generally completed in three years or less.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: The Soldier Enhancement Program (SEP) reviews candidate capability products through market surveys and product evaluations.	2.567	3.407	2.050	-	2.050
Articles:	0	0			
Description: Same as above					
FY 2010 Accomplishments: Evaluated and procured prototypes and/or tested the following Soldier Equipment: Mountain Boots; Army Combat Shirt; Tactical Head Lamp; Illumination System; Tactical Duostocks; Blask Absorbing Helmet Liners; Tripod; Rynoskin protection to clothing; Green Laser Technology; Flash Eliminator; Flash Suppressor; Trauma Medical Bag; Resistance Training Kit; Fire Resistance Socks; Improved Chin Straps and Integrated Fire Control Device.					
FY 2011 Plans: Evaluate and procure prototypes and/or test the following Soldier equipment and weapons items: M26 MASS; 12 ga Non-Lethal; Grenade Laser Range Finder; Sniper Tripod; Compact M110 SASS; Sniper Weapons Collimator; Sniper Quick Fire Sight; and Parachute Oxygen Mask.					
FY 2012 Base Plans: Evaluate and procure prototypes and/or test Soldier equipment and weapons items. Up to 125+ proposals from Soldiers, Units, Industry and Academia. Will be submitted and reviewed by TRADOC and material developer					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S58: *SOLDIER ENHANCEMENT PROGRAM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
(PEO). SEP criteria will be applied and then submitted to a CoC Executive Council to see if new capability initiatives will be approved for test and evaluation.					
Title: In house engineering support and integration services, conduct technical evaluations and program reviews. ***Articles:*** ***Description:*** Same as above ***FY 2010 Accomplishments:*** In house engineering support and integration services, conduct technical evaluations and program reviews for the following systems: Flotation Collar, 7-day Bandage; Frigid Towel; Wide Area Monitor; MRAP Gunner Helmet; Glo-Shade. ***FY 2011 Plans:*** In house engineering support and integration services, conduct technical evaluations and program reviews for the following systems: 12 ga Non-Lethal; Medical Bag; Chin Straps; 3D Camo; Field Tarp Modifications, Wireless Intercom; Body Heat Battery Charger; and Airborne Goggle. ***FY 2012 Base Plans:*** In house engineering support and integration services, conduct technical evaluations and program reviews. Engineering capability will be maintained for new initiatives coming from submitted Soldier capability proposals.	0.997 0	0.835 0	0.610	-	0.610
Title: Conduct market surveys and/or evaluations on new items to commence development and demonstration. New items initiated will continue evaluation/procurement of new prototypes. ***Articles:*** ***Description:*** Same as above ***FY 2010 Accomplishments:*** Market surveys and evaluations were conducted on the following items: Multi-Tool; Dual Current Power; Facial Protective System; Energy Stix; Mag Flare Launcher; Tactical Rescue Stretcher; Waterless Tooth Brush; and Sand Bagger. ***FY 2011 Plans:***	0.953 0	0.608 0	0.615	-	0.615

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S58: *SOLDIER ENHANCEMENT PROGRAM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Market surveys and/or evaluations to be conducted on 3D Camo; Flotation Collar, 7 Day Bandage; Airborne Goggles and Weapons case. ***FY 2012 Base Plans:*** Market survey capability will be applied to new proposals for Soldier capabilities.					
Accomplishments/Planned Programs Subtotals	4.517	4.850	3.275	-	3.275

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPA3, MA6800: *Soldier Enhancement, OPA3 MA6800*	4.558	5.416	9.591		9.591		6.498	1.698	0.324	Continuing	Continuing
• OPA2, BA5300: *Soldier Enhancement, OPA2 BA5300*	4.632	5.125	1.843		1.843		1.703	1.775	1.833	Continuing	Continuing
• WTCV, GC0076: *Small Arms (SEP), WTCV GC0076*	4.997	4.042	2.453		2.453		2.452	2.412	2.495	Continuing	Continuing

D. Acquisition Strategy

The Soldier Enhancement Program (SEP) focuses on COTS initiatives, Soldier capability enhancements and integration efforts that lend themselves to accelerated acquisiton and fielding in the near term (three years or less). New SEP candidates are reviewed and approved semi-annually. SEP items are procured from multiple appropriations, i.e., OPA and WTCV.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S58: *SOLDIER ENHANCEMENT PROGRAM*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	RO	PEO Soldier:Ft. Belvoir, VA	9.450	2.139		0.405		-		0.405	Continuing	Continuing	Continuing
		Subtotal	9.450	2.139		0.405		-		0.405			

Remarks

Costs vary annually depending on number and type of items being evaluated.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	C/FP	PEO Soldier:Ft. Belvoir, VA	31.850	0.367		2.092		-		2.092	Continuing	Continuing	Continuing
		Subtotal	31.850	0.367		2.092		-		2.092			

Remarks

Candidates for the Soldier Enhancement Program are received, reviewed, and approved semi-annually. Contractual efforts are focused on procuring prototypes for testing.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	RO	PEO Soldier:Ft. Belvoir, VA	5.319	0.900		0.567		-		0.567	Continuing	Continuing	Continuing
		Subtotal	5.319	0.900		0.567		-		0.567			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S58: *SOLDIER ENHANCEMENT PROGRAM*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	RO	PEO Soldier:Ft. Belvoir, VA	9.450	1.444		0.211		-		0.211	Continuing	Continuing	Continuing
		Subtotal	9.450	1.444		0.211		-		0.211			

Remarks

Testing costs vary annually depending on number and type of items being evaluated.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	56.069	4.850		3.275		-		3.275			

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S60: *CLOTHING & EQUIPMENT*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
S60: *CLOTHING & EQUIPMENT*	10.942	9.711	6.322	-	6.322	5.604	1.915	1.967	2.057	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This funding supports engineering and manufacturing development tasks related to individual clothing, equipment and personnel parachutes with the goal of enhancing the lethality, survivability, mobility and quality of life of the individual Soldier. It funds system integration and formal DT/OT of preproduction and production representative systems leveraging advancements in materials, nanotechnology, fabrication techniques, moisture management, flame resistance, antimicrobial treatments, insect protection, extreme environmental protection and advancements in chemical/biological protection to increase the capabilities and durability of tactical and non-tactical clothing and individual equipment.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Individual Soldier Ballistic Protection Moves to Program Element PE 0604601 VS5 in FY12	6.739	4.799	-	-	-
Articles:	0	0			
Description: Increase the Warfighter lethality and mobility, by optimizing Soldier protection while effectively managing all life cycle aspects of Personal Protective Equipment (PPE).					
FY 2010 Accomplishments: Successfully tested new Smart Sensor prototypes (Smart Sensor allows Soldiers to test their plates for cracks or damage at any location) to 100% accuracy. Awarded contract to generate government Computer Aided Design (CAD) and screw-free engineering design for the Advanced Combat Helmet (ACH) and the Enhanced Combat Helmet (ECH). The screw-free design will improve the ballistic performance and also reduce the weight of the ACH and ECH.					
FY 2011 Plans: Continue incremental improvements (sizing, functionality, heat management, and reduce weight/cube of Interceptor Body Armor System and transition new technologies as they mature. Leverage emerging blast testing data analysis to establish performance baseline of next generation PPE. Continue with Non Destructive Test Equipment (NDTE) software improvements. Make NDTE and ECH production and fielding decisions. Continue to improve ballistic and advanced laser protection on combat eyewear. Improve lens coatings to improve scratch and fog resistance.					
Title: Soldier Uniforms and Clothing	2.175	2.107	3.337	-	3.337
Articles:	0	0			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S60: *CLOTHING & EQUIPMENT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Develop and provide superior and sustainable integrated clothing for the Soldier in a rapidly changing global environment. ***FY 2010 Accomplishments:*** Revised Technical Data Packages to transition Operation Enduring Freedom Camouflage Pattern (OCP) to production for 19 items. Conducted Fit Test for Women's Combat Uniform (WACU) and awarded contract for production of prototype WACUs to be used in FY11 User Evaluation (Wear Test). Initiated development of Flame Resistant (FR) capability in the Extended Cold Weather Clothing System (ECWCS) Generation III (Gen III). Conducted thermal testing of Flame Resistant Environmental Ensemble (FREE) and prepared user evaluation questionnaire for evaluation which started in Nov 10. Conducted electro-static discharge testing of FR Fuel Handler's Coverall and the Army Aircrew Uniform (A2CU). Updated hook & loop on A2CU. Developed Army Service Uniform (ASU) (tropical) white, short sleeve shirt with lighter weight fabric and convertible collar. Developed hot weather variant of FR clothing uniforms (iCVC/A2CU). ***FY 2011 Plans:*** Apply appropriate FR materials to hot weather vehicle crewmen uniforms and FR Fuel Handlers coveralls. Conduct product improvements for clothing bag items. Conduct user evaluations of clothing bag items. Publish an updated Combat Glove Approved Products List (APL). System Engineering Change Proposals (ECPs) and technology insertions to update components and synergy of Generation (GEN) III Extended Cold Weather Clothing System (ECWCS) to provide FR protection in cold weather clothing. Evaluate Improved Physical Fitness Uniform (IPFU) trunks and t-shirts. Improve fit of Army Combat Uniforms for women. ***FY 2012 Base Plans:*** Conduct Phase IV of the Army's effort to evaluate alternative camouflage patterns to the current universal camouflage pattern (UCP). Conduct user evaluation for ECWCS GEN III product improvement to incorporate FR capabilities. Conduct evaluation of clothing bag Improved Physical Fitness Uniform (IPFU) moisture wicking t-shirt and trunk product improvement. Clarify updated Key Performance Parameters (KPPs) and conduct user evaluation of FREE program of record material solution with transition to production in FY13. Update Army Combat Shirt (ACS) to increase area of coverage to accommodate the plate carrier body armor system. Conduct user evaluation on Modular Boot System with transition to production in FY 13. Down select the program of record material solution for the Mountain Combat Boot with MS-C and transition to sustainment					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S60: *CLOTHING & EQUIPMENT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
in FY13. Conduct materiel change efforts to improve the durability and comfort of tactical and environmental gloves.					
Title: Individual Equipment ***Articles:*** ***Description:*** Develop and provide superior and sustainable integrated individual equipment, for the Soldier, in a rapidly changing global environment. ***FY 2010 Accomplishments:*** Continued to refine design and incorporate new material/technology that pertains to form, fit, and function of the load bearing equipment. Continued to serve the Airborne community by developing equipment that is tailorable to Airborne operations. Completed development and evaluation of Medium Rucksack and airdrop intergration testing of Medium Rucksack and Tactical Assault Panel (TAP). ***FY 2011 Plans:*** Continue to refine design and incorporate new material/technology that pertains to form, fit, and function of the load bearing equipment. Continue to serve the Airborne community by developing equipment that is tailorable to Airborne operations. Purchase Advanced Ram Air Parachute test items and conduct developmental testing and operational testing. Continue to certify lights for the Approved Family of Flashlight List (AFFL) Certification program. ***FY 2012 Base Plans:*** Conduct limited user evaluation of the Improved Water Treatment Device (IWTD) increment 1 (water purification) with transition to production in FY 13. Complete operational testing of Advanced Ram Air Parachute System (ARAPS). Conduct limited user evaluations of Modular Lightweight Load-carrying Equipment (MOLLE) components to include hydration carrier, improved medic set, and various pouches with transition to sustainment in FY 13. Conduct limited user evaluation on Team Stove and Mountaineering Kits with MS-C and transition to production in FY 13. Conduct operational test and user evaluation of the Multi-Purpose Hydration System (MPHS) with MS-C and transition to production in FY 14.	2.028 0	2.405 0	2.985	-	2.985
Title: Soldier Cooling ***Articles:*** ***Description:*** Soldier Cooling	-	0.400 0	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S60: *CLOTHING & EQUIPMENT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2011 Plans: Continue to enhance Soldier Cooling system performance and reliability. Continue to design for improved comfort, decreased weight/cube and improved power management.					
Accomplishments/Planned Programs Subtotals	10.942	9.711	6.322	-	6.322

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• RDTE: *RDTE, 0603827.S53, Clothing and Equipment*	6.794	7.106	6.985		6.985		6.573	6.657	5.376	Continuing	Continuing
• OMA: *OMA, 121017, Central Funding and Fielding*	70.305	71.664	74.940		74.940		78.177	80.240	80.240	Continuing	Continuing
• OPA: *OPA, MA7801, Advanced Tactial Parachute System*	39.066	41.591	52.185		52.185		45.922	44.234	29.729	Continuing	Continuing

D. Acquisition Strategy

Acquisition strategies will vary in methods: (1) Quick fixes in 12-24 months or less from concept to Type Classification (TC); (2) modernization improvements which require limited RDT&E and will be completed in more than 24-48 months from inception to Type Classification; and (3) fully integrated development that will require substantial RDT&E funding and will be completed in four years or more.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S60: *CLOTHING & EQUIPMENT*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
In-House Support	Various	PM SPIE:Various	4.925	0.900		0.750		-		0.750	Continuing	Continuing	Continuing
		Subtotal	4.925	0.900		0.750		-		0.750			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	Various	NSRDEC:Natick, MA	9.708	1.391		1.075		-		1.075	Continuing	Continuing	Continuing
Development Contracts	C/IDIQ	Various:Natick MA	26.647	3.500		2.098		-		2.098	Continuing	Continuing	Continuing
		Subtotal	36.355	4.891		3.173		-		3.173			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Misc Support Costs	Various	Various:Various	9.874	2.050		0.979		-		0.979	Continuing	Continuing	Continuing
		Subtotal	9.874	2.050		0.979		-		0.979			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	Various	Various:Various	9.708	1.870		1.420		-		1.420	Continuing	Continuing	Continuing
		Subtotal	9.708	1.870		1.420		-		1.420			

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	60.862	9.711		6.322		-		6.322			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S60: *CLOTHING & EQUIPMENT*	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S60: *CLOTHING & EQUIPMENT*

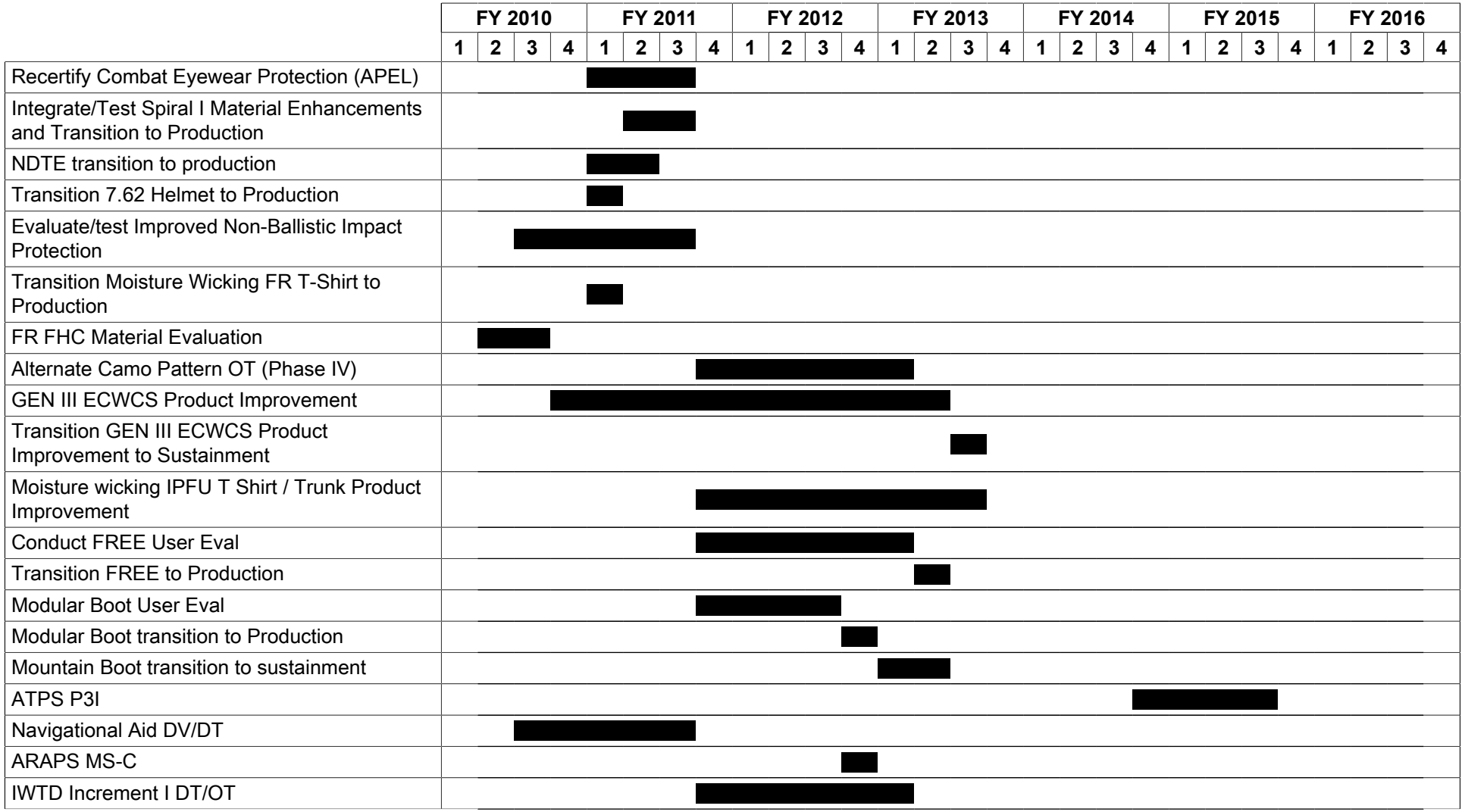

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S60: *CLOTHING & EQUIPMENT*

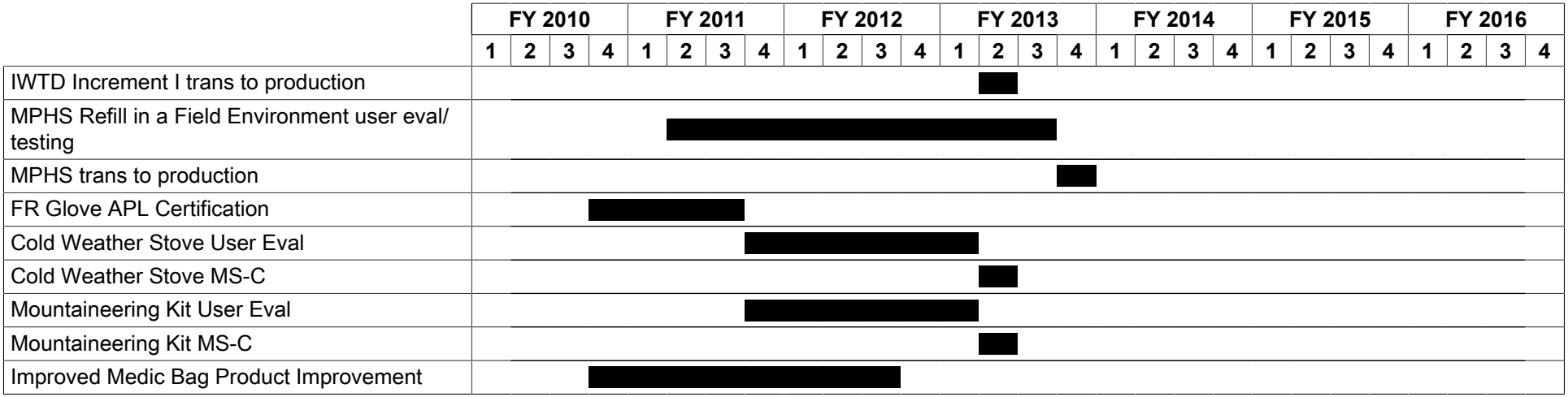

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S60: *CLOTHING & EQUIPMENT*

Schedule Details

	Start		End	
Events	Quarter	Year	Quarter	Year
Recertify Combat Eyewear Protection (APEL)	1	2011	3	2011
Integrate/Test Spiral I Material Enhancements and Transition to Production	2	2011	3	2011
NDTE transition to production	1	2011	2	2011
Transition 7.62 Helmet to Production	1	2011	1	2011
Evaluate/test Improved Non-Ballistic Impact Protection	3	2010	3	2011
Transition Moisture Wicking FR T-Shirt to Production	1	2011	1	2011
FR FHC Material Evaluation	2	2010	3	2010
Alternate Camo Pattern OT (Phase IV)	4	2011	1	2013
GEN III ECWCS Product Improvement	4	2010	2	2013
Transition GEN III ECWCS Product Improvement to Sustainment	3	2013	3	2013
Moisture wicking IPFU T Shirt / Trunk Product Improvement	4	2011	3	2013
Conduct FREE User Eval	4	2011	1	2013
Transition FREE to Production	2	2013	2	2013
Modular Boot User Eval	4	2011	3	2012
Modular Boot transition to Production	4	2012	4	2012
Mountain Boot transition to sustainment	1	2013	2	2013
ATPS P3I	4	2014	3	2015
Navigational Aid DV/DT	3	2010	3	2011
ARAPS MS-C	4	2012	4	2012
IWTD Increment I DT/OT	4	2011	1	2013
IWTD Increment I trans to production	2	2013	2	2013
MPHS Refill in a Field Environment user eval/testing	2	2011	3	2013

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S60: *CLOTHING & EQUIPMENT*

	Start		End	
Events	Quarter	Year	Quarter	Year
MPHS trans to production	4	2013	4	2013
FR Glove APL Certification	4	2010	3	2011
Cold Weather Stove User Eval	4	2011	1	2013
Cold Weather Stove MS-C	2	2013	2	2013
Mountaineering Kit User Eval	4	2011	1	2013
Mountaineering Kit MS-C	2	2013	2	2013
Improved Medic Bag Product Improvement	4	2010	3	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S61: *ACIS ENGINEERING DEVELOPMENT*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
S61: *ACIS ENGINEERING DEVELOPMENT*	12.181	10.295	18.946	-	18.946	17.186	19.253	22.280	12.760	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project conducts Engineering and Manufacturing Development for Army aircrew safety, survivability, and human performance. These funds complete the Engineering and Manufacturing Development of the Air Warrior Encrypted Aircraft Wireless Intercom System and initiates Air Soldier System (Air SS) development and integration. The Air SS addresses Air Warrior capability gaps identified during combat operations in Iraq and Afghanistan including the effects of weight and bulk, lack of situational awareness, and lack of functionally integrated aircrew member life support equipment. Currently Army aircrews must trade off Air Warrior life support capabilities to ensure compatibility with the confined space of rotary wing crew stations. The Air SS will address these and other gaps defined in the Air SS Increment I CDD using a Soldier as a System approach to provide improved situational awareness; provide terrain, weather, threat, and obstacle avoidance information that can prevent aircraft mishaps and fatalities; resolve the lack of a common aircrew helmet with modern Head-Up display technologies; increase the Soldier's ability to operate safely in degraded visual environments and extreme environmental conditions; and deliver the capability to perform missions in excess of 5.3 (up to current goal of 11.0) hours in hot/humid environments under Chemical/Biological threat conditions. The first delivery of Air SS capability is identified as sub-increment 1a and will provide optimized survival equipment and integrated lightweight body armor directly contributing reduced bulk and increased mobility and crew member performance; a replacement flight helmet that transitions to a Modular Aircrew Common Helmet with improved crash energy attenuation; increased laser eye protection to align with current laser threats; and a Wearable Environmental Control System with integrated portable power that increases crew member mobility and reduces airframe space, weight and power requirements. The second delivery of capability is sub-increment 1b, which builds upon the initial sub-increment and further reduces bulk through a layered clothing ensemble with active thermal regulation, chemical/biological protection, and waste collection fully integrated into the duty uniform; an integrated Soldier-worn electronics suite that combines the functionality of bulky and separate situational/spatial awareness and life support systems and their separate batteries. These funds also initiate development and integration efforts for the eventual delivery of sub-increment 1c, the final and full Air SS capability delivery that completely replaces the legacy Air Warrior system. This is the full integration of Air Soldier capabilities necessary to meet the Air SS KPP threshold requirement for a 25% weight and bulk reduction over the legacy Air Warrior Aviation Life Support Equipment system. Sub-increment 1c provides improved safety and soldier survivability, increased situational awareness, and reduced pilot/crew member workload through an integrated protective ensemble that optimizes the Air SS capabilities delivered under sub-increments 1a and 1b. This final delivery of capability also enhances the previous Air SS integrated electronics suite by adding a wireless aircraft and survival and evasion communications capability; a Modular Aircrew Common Helmet and Display System with fully integrated chem/bio eye and respiratory protection; a digital day/night Heads Up Display common to all aircraft platforms; and optimized laser eye protection. This program does not duplicate any aircraft platform program efforts.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Aircrew Integrated Systems (ACIS) Engineering Development	12.181	10.295	18.946	-	18.946
Articles:	0	0			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S61: *ACIS ENGINEERING DEVELOPMENT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Continued integration of preplanned Air Warrior Increment III (including AWIS encryption certification and EDM Software development) and Air Soldier System improvements development. ***FY 2010 Accomplishments:*** Continued integration of preplanned Air Warrior Increment III (including AWIS encryption certification and EDM Software development). ***FY 2011 Plans:*** Transitions Air Soldier System sub-Increment 1a advanced development improvements into engineering manufacturing development to develop improved helmet protection, improved fixed laser eye protection, and wearable cooling and integrated wearable power supply system, and other sub-Increment 1a capabilities. ***FY 2012 Base Plans:*** Continues development and qualification of Air Soldier System sub-Increment Ia. Improves helmet protection, improves fixed laser eye protection, and develops wearable cooling and integrated wearable power supply system. Begins three-dimensional audio, head tracking, soldier display, aircraft mounted mission display, soldier computer module development, integrated layered clothing system, and aircraft integration development.					
Accomplishments/Planned Programs Subtotals	12.181	10.295	18.946	-	18.946

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• ACIS Advanced Development: *RDTE, A PE 0603827A, PROJ S51 - Adv Dev*	2.136	0.141	0.134		0.134		0.146	0.153	0.155	Continuing	Continuing
• ACIS Procurement: *Aircraft Procurement, Army SSN AZ3110 - ACIS*	66.053	52.423	82.883		82.883		47.670	102.011	116.056	Continuing	Continuing

D. Acquisition Strategy

Engineering and Manufacturing Development efforts for Aircrew Integrated Systems program include completion of the Air Warrior Aircraft Wireless Intercom System (AWIS) and continuation of the Air Soldier System. The AWIS is a hands-free telecommunication device using radio signals for aircrew communication. Through a series of developmental program increments, the Air Soldier System program integrates capabilities including optimized survival equipment, Wearable Environmental

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S61: *ACIS ENGINEERING DEVELOPMENT*

Control System with integrated wearable power, integrated Soldier-worn electronics suite, wireless aircraft and survival and evasion communications cabability, a fully compliant Modular Integrated Helmet and Display System (MIHDS), Chemical, Biological (CB) eye and respiratory protection, digital day/night Heads Up Display common to all Army aircraft platforms and optimized laser eye protection, waste disposal system and reduced weight and bulk. The MIHDS will provide a day (as well as night) heads up display, external audio, don in flight CB protection and improved laser eye protection. Development efforts are awarded through competitive cost plus fixed fee contracts or by Military Interdepartmental Purchase Requests (MIPRs) to other government agencies.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S61: *ACIS ENGINEERING DEVELOPMENT*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Administration	Allot	Various Government:Huntsville, Alabama	0.896	0.248		0.359		-		0.359	Continuing	Continuing	Continuing
		Subtotal	0.896	0.248		0.359		-		0.359			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Warrior and Air Soldier System Development	C/FP	Various Government:Various Locations	13.153	9.740		17.640		-		17.640	Continuing	Continuing	Continuing
Personnel Recovery Support Equipment Development	SS/FP	Various Activities:Various Locations	29.600	-		-		-		-	Continuing	Continuing	Continuing
Congressional Add, Composite Bottles for Survival Egress Air	SS/FP	JVYS:Huntsville, Alabama	2.000	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	44.753	9.740		17.640		-		17.640			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	RO	Various Government:Various Locations	0.510	0.251		0.947		-		0.947	Continuing	Continuing	Continuing
		Subtotal	0.510	0.251		0.947		-		0.947			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S61: *ACIS ENGINEERING DEVELOPMENT*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	RO	Various Activities:Various Locations	0.184	0.056		-		-		-	Continuing	Continuing	Continuing
		Subtotal	0.184	0.056		-		-		-			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	46.343	10.295		18.946		-		18.946			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S61: *ACIS ENGINEERING DEVELOPMENT*

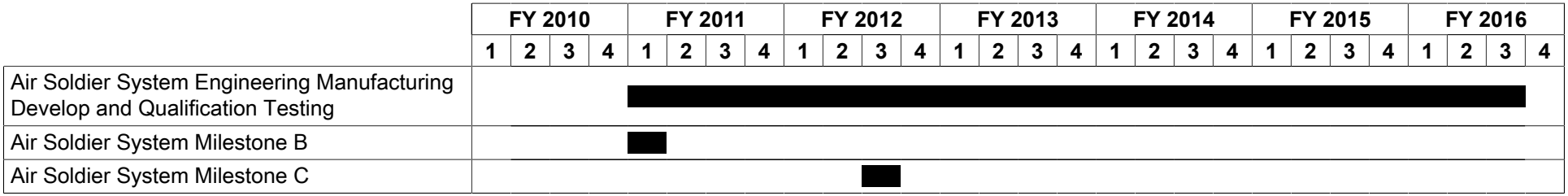

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604601A: *Infantry Support Weapons*	**PROJECT** S61: *ACIS ENGINEERING DEVELOPMENT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Air Soldier System Engineering Manufacturing Develop and Qualification Testing	1	2011	3	2016
Air Soldier System Milestone B	1	2011	1	2011
Air Soldier System Milestone C	3	2012	3	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S62: *Counter-Defilade Target Engagement - SDD*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
S62: *Counter-Defilade Target Engagement - SDD*	7.276	34.416	19.968	-	19.968	0.603	-	-	-	0.000	62.263
Quantity of RDT&E Articles											

Note

Note applicable for this item.

A. Mission Description and Budget Item Justification

The Maneuver Center of Excellence (MCoE), FT Benning, GA (User Community) identifies the Counter Defilade Target Engagement (CDTE) as their number one material solution to mitigate a critical capability gap for our Soldiers in combat (defeating defilade targets from 15-500m). The XM25 CDTE system provides the Infantry Soldier with a leap-ahead overmatch capability that will dramatically increase lethality, range, and capability through the use of a family of low-velocity programmable 25mm ammunition. The XM25 CDTE fires 25mm munitions including high-explosive airburst (HEAB), armor-piercing, breaching, less-than-lethal, and training rounds. The XM25 comes with a target acquisition/fire control that integrates thermal capability with direct-view optics laser rangefinder, compass, fuze setter, ballistic computer, laser pointer and illuminator and internal display. The XM25 has a 500-meter point target range and a 700-meter area target range capable of deating defilade (hidden) targets.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Design, Develop and Fabricate	5.000	18.967	12.170	-	12.170
Articles:	0	0			
Description: Description: Design, develop and fabricate weapon systems					
FY 2010 Accomplishments: Design, Develop and Fabricate FY 2010 Accomplishments: Capability Development Document (CDD) prepared and staffed, received Joint Requirements Oversight Council (JROC) approval for Milestone B December 2010.					
FY 2011 Plans: Design, Develop and Fabricate					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S62: *Counter-Defilade Target Engagement - SDD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2011 Plans: Design, develop, fabricate and implement technical and producible improvements to the weapon system design, if required. Funds will also provide for prototype assembly and demonstration as well as some manufacturing facility ramp up. ***FY 2012 Base Plans:*** Design, Develop and Fabricate FY 2012 Plans: Design improvements, if required, design finalization, long lead items, and additional manufacturing facility start up costs					
Title: Engineering and Training Development ***Articles:*** ***Description:*** Description: Engineering and Training Development ***FY 2010 Accomplishments:*** Engineering and Training Development FY 2010 Accomplishments: Capability Development Document (CDD) prepared and staffed, received Joint Requirements Oversight Council (JROC) approval for Milestone B December 2010 ***FY 2011 Plans:*** Engineering and Training Development FY 2011 Plans: Continued engineering support and services to include engineering evaluations, verifications and validation of system performance requirements, contractor inspections and development of training solutions and it's successful implementation. ***FY 2012 Base Plans:*** Engineering and Training Development FY 2012 Plans: Continued engineering support and services to include engineering evaluations, verifications and validation of system performance requirements, contractor inspections and for the development of training solutions and its successful implementation.	1.000 0	2.530 0	1.300	-	1.300
Title: Development Test and Evaluation	1.000	11.889	6.000	-	6.000

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S62: *Counter-Defilade Target Engagement - SDD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Articles:	0	0			
Description: Description: Development Test and Evaluation ***FY 2010 Accomplishments:*** Development Test and Evaluation FY 2010 Accomplishments: Capability Development Document (CDD) prepared and staffed, received Joint Requirements Oversight Council (JROC) approval for Milestone B December 2010. ***FY 2011 Plans:*** Development Test and Evaluation FY2011 Plans: Developmental testing, technical and risk assessments and evaluations, systems performance and safety requirements testing and validation of manufactures facilities. ***FY 2012 Base Plans:*** Development Test and Evaluation FY2012 Plans: Continued developmental testing, technical and risk assessments and evaluations, systems performance and safety requirements testing and validation of manufactures facilities.					
Title: Program Management	0.276	1.030	0.498	-	0.498
Articles:	0	0			
Description: Description: Program Management ***FY 2010 Accomplishments:*** Program Management FY 2010 Accomplishments: Capability Development Document (CDD) prepared and staff, awaiting the Joint Requirements Oversight Council (JROC) approval for Milestone B. ***FY 2011 Plans:*** Program Management					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S62: *Counter-Defilade Target Engagement - SDD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2011 Plans: Program management, logistical and life cycle support, to organize, coordinate and control program activities and to comply with contract requirements to include timely delivery of the required products and services. ***FY 2012 Base Plans:*** Program Management FY 2012 Plans: Program management, logistical and life cycle support, to organize, coordinate and control program activities and to comply with contract requirements to include timely delivery of the required products and services.					
Accomplishments/Planned Programs Subtotals	7.276	34.416	19.968	-	19.968

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• RDTE: PE 0603827A, Project S55: *RDTE: PE 0603827A, Project S55*	5.867									0.000	5.867
• WTCV: G16100: *WTCV: G16100*			16.046		16.046		70.321	70.285	70.217	0.000	260.959
• AMMO: E92500: *AMMO: E92500*			3.399		3.399		10.166	15.676	32.162	0.000	65.851

D. Acquisition Strategy

The XM25 CDTE transitioned from the Technology and Development phase to Engineering and Manufacturing Development (EMD) phase by achieving Milestone B in December 2010. The EMD phase will complete development of the XM25 CDTE and verify training solution for the Milestone C approval in FY2013. Research and Development acquisition strategy is to use sole source contracting with ATK (formerly known as Alliant Techsystems), Plymouth, MN.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S62: *Counter-Defilade Target Engagement - SDD*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management (Government)	Allot	PM Soldier Weapons:Picatinny Arsenal, NJ	-	1.030		0.498		-		0.498	Continuing	Continuing	Continuing
		Subtotal	-	1.030		0.498		-		0.498			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Design, Develop & Fabricate	SS/CPFF	ATK:Plymouth, MN	-	18.967		12.170		-		12.170	Continuing	Continuing	Continuing
		Subtotal	-	18.967		12.170		-		12.170			

Remarks

The FY2010 EMD Contract award will not occur until early 2Qtr11 due to delayed Milestone B decision and DCAA audit of contractor.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	Various	Multiple:Multiple	-	2.330		1.100		-		1.100	Continuing	Continuing	Continuing
Training Development Support	MIPR	PEO STRI:PEO STRI	-	0.200		0.200		-		0.200	Continuing	Continuing	Continuing
		Subtotal	-	2.530		1.300		-		1.300			

Remarks

The FY2010 EMD Contract award will not occur until early 2Qtr11 due to delayed Milestone B decision and DCAA audit of contractor.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S62: *Counter-Defilade Target Engagement - SDD*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test (Government)	Various	Performed by Government:Various Activities	-	11.889		6.000		-		6.000	Continuing	Continuing	Continuing
		Subtotal	-	11.889		6.000		-		6.000			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	34.416		19.968		-		19.968			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604601A: *Infantry Support Weapons*	**PROJECT** S62: *Counter-Defilade Target Engagement - SDD*

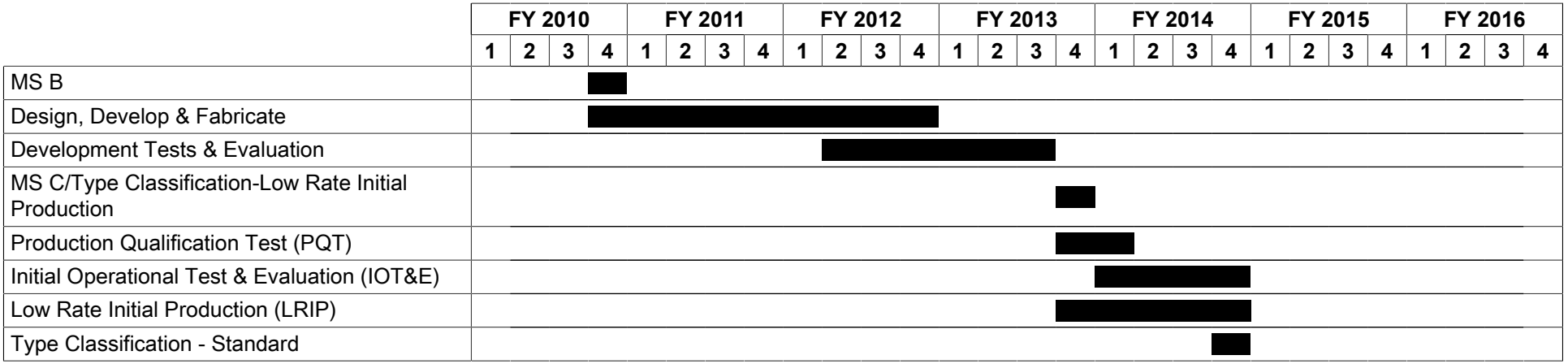

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604601A: *Infantry Support Weapons*	**PROJECT** S62: *Counter-Defilade Target Engagement - SDD*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MS B	4	2010	4	2010
Design, Develop & Fabricate	4	2010	4	2012
Development Tests & Evaluation	2	2012	3	2013
MS C/Type Classification-Low Rate Initial Production	4	2013	4	2013
Production Qualification Test (PQT)	4	2013	1	2014
Initial Operational Test & Evaluation (IOT&E)	1	2014	4	2014
Low Rate Initial Production (LRIP)	4	2013	4	2014
Type Classification - Standard	4	2014	4	2014

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S63: *SMALL ARMS IMPROVEMENT*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
S63: *SMALL ARMS IMPROVEMENT*	9.653	19.805	18.168	-	18.168	14.361	14.364	14.207	14.374	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Small Arms Improvement program funds Engineering and Manufacturing Development (EMD) of engineering models/studies and the integration of commercial items with weapons/ammunition. Small arms include individual and crew-served weapons/ammunition ranging up to 40 millimeter. Current and future efforts focus on improvements designed to enhance lethality, target acquisition, fire control, training effectiveness, and reliability of small arms weapons/ammunition. Focus areas include the demonstration, integration and study of light weight materials, coatings, concealants, scouting, observation, lethal and non-lethal ammunition, and equipment. Benefits include continuous improvements to fire control equipment, optics, close quarters battle kit, training devices, component mounts, weapon mounts, suppressors, magazines, binoculars, ammunition, ammunition upgrades, Personal Defense Weapon, 30 Round 5.56mm Magazine, Modular Handgun, Precision Sniper Rifle, new weapons, weapon upgrades and accessories (e.g., Sniper Upgrades), and small arms weapon enhancements. In accordance with congressional language and the Secretary of the Army's direction, the Army initiated a new start individual weapon in FY10. The new carbine will provide the Soldier with an enhanced weapons capability and will be competed utilizing a best value, full and open competition to meet operational requirements. The requirement for the new individual carbine is being coordinated with other joint services to equip the warfighter with an accurate, reliable, Soldier-centric basic weapon capability which will be evaluated against current and emerging threats and incorporates technology advancements in the small arms industry mitigating capability gaps and shortcomings in currently fielded carbines. New starts in FY2012 consists of the following new initiative: Modular Handgun Systems and Precision Sniper Rifle.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: New Weapons	1.368	9.148	10.705	-	10.705
Articles:	0	0			
Description: Description: Development of new weapons					
FY 2010 Accomplishments: Evaluated new weapons initiatives. FY 2010 Accomplishments: Initiated the Individual Carbine Competition.					
FY 2011 Plans: Evaluate on-going new weapons initiatives. FY 2011 Plans: Evaluate on-going initiatives of the Individual Carbine Competition. Provide program management guidance to support future Capability Development Documents.					
FY 2012 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S63: *SMALL ARMS IMPROVEMENT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue on-going and initiate new weapons programs. FY 2012 Plans: Evaluate on-going initiatives of the Individual Carbine Competition and initiate the evaluation of the Modular Handgun and Precision Sniper Rifle. Initiate design, development and engineering and testing efforts to support new Capability Development Documents. Conduct demonstrations of the Individual Carbine Competition.					
Title: Small Arms Weapons Enhancements ***Articles:*** ***Description:*** Description: Enhancement developments of small arms weapons ***FY 2010 Accomplishments:*** Enhancement of small arms weapons Continued engineering and development of the XM205 Lightweight Tripod and Weapon Upgrades and Accessories. Initiated the M4 Carbine Product Improvement Program and Sniper Upgrades. ***FY 2011 Plans:*** Enhancement of small arms weapons Continue evaluation of M4 Carbine Product Improvement Program, Sniper Upgrades, and initiate Suppressors program. ***FY 2012 Base Plans:*** Enhancement of small arm weapons Continue engineering, development, evaluation and testing of M4 Carbine Product Improvement Program, Sniper Upgrades, Suppressors and initiate the Close Quarter Battle Kit Re-Competition.	4.087 0	6.097 0	5.013	-	5.013
Title: Ammunition ***Articles:*** ***Description:*** Improvement of small arms ammunition. ***FY 2010 Accomplishments:*** Evaluate small arms ammunition initiatives. Contract award to incorporate micro mechanical safe and arm assembly equipment and provide safe and	3.531 0	3.365 0	1.600	-	1.600

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S63: *SMALL ARMS IMPROVEMENT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
arm for fuze and cartridge testing; to procure additional 7.62mm lightweight stainless steel cartridges; and to manufacture, evaluate and test prototype XM1112 40mm low velocity airbursting non-lethal munition cartridge. ***FY 2011 Plans:*** Continue on-going activities to enhance small arms ammunition. Planned contract award to incorporate micro mechanical safe and arm assembly equipment and provide safe and arm for fuze and cartridge testing. Evaluate and test prototype XM1112 40mm low velocity airbursting non-lethal munition cartridge. Study, design and implement technical and producibility improvements to the Air Bursting Fuze for low velocity High Explosive Airbursting (HEAB) cartridge. Transition small arms ammunition RDTE initiatives to PEO Ammunition. ***FY 2012 Base Plans:*** Continue on-going activities to enhance small arms ammunition. Continue engineering, development, evaluation and testing of the XM1112 40mm low velocity airbursting non-lethal munition cartridge. Continued design and implementation of producible improvements to the Air Bursting Fuze.					
Title: Combat Optics ***Description:*** Improvement of combat optics ***FY 2012 Base Plans:*** Initiate combat optics and upgrades research and development efforts. Funding planned to provide engineering support and services to include engineering evaluations, verifications and validation of weapon systems performance requirements.	-	-	0.100	-	0.100
Title: Fire Control ***Articles:*** ***Description:*** Improvement of small arms fire control. ***FY 2010 Accomplishments:*** Design a new mounting bracket to improve flexibility of mounting improve flexibility of mounting the XM320 Improved Grenade Launcher Module to host weapons and mounting sights. Conduct developmental testing to determine Grenade Long Range Fire performance of the XM320 Improved Grenade Launcher Module. ***FY 2011 Plans:***	0.667 0	1.195 0	0.750	-	0.750

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S63: *SMALL ARMS IMPROVEMENT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Conversion of drawings and specifications into Government/Military standard format. Continue developmental testing to determine Grenade Long Range Fire suitability and supportability and qualification test of new mounting bracket of the XM320 Improved Grenade Launcher Module. ***FY 2012 Base Plans:*** Validation of the XM320 Improved Grenade Launcher Module technical data package to be conducted prior to release for competition.					
Accomplishments/Planned Programs Subtotals	9.653	19.805	18.168	-	18.168

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• RDTE S54: *RDTE S54, Program Element 0603827A - Soldier Systems - Advanced Development*	5.085		4.506		4.506		4.853	5.100	5.040	Continuing	Continuing
• WTCV, GZ1290: *WTCV, GZ1290, M24 Squad Automatic Weapon (SAW) MODS*	33.695	5.922	8.480		8.480		5.037	5.088	5.173	Continuing	Continuing
• WTCV, GZ2800: *WTCV, GZ2800, M16 Rifle MODS*	4.173	3.855	3.476		3.476		3.248	3.240	3.292	Continuing	Continuing
• WTCV, GB3000: *WTCV, GB3000, MK19 Grenade Machine Gun MODS*	8.523	4.286								Continuing	Continuing
• WTCV, GZ1300: *WTCV, GZ1300, M240 Medium Machine Gun MODS*	22.709	15.852	15.718		15.718		4.663	4.624	4.702	Continuing	Continuing
• WTCV, GB3007: *WTCV, GB3007, M4 Carbine MODS*	35.525	26.944	25.092	16.800	41.892		13.099	13.328	13.552	Continuing	Continuing
• WTCV, GB4000: *WTCV, GB4000, M2 .50 CAL Heavy Machine Gun MODS*	36.766	15.000	14.856		14.856		9.965	5.548	20.218	Continuing	Continuing
			1.994		1.994		1.993	1.992	1.991	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S63: *SMALL ARMS IMPROVEMENT*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• WTCV, GZ1500: *WTCV, GZ1500, Sniper Rifle MODS*											

D. Acquisition Strategy

Primary strategy is to mature and finalize design efforts, award RDT&E hardware contracts, and test and evaluate systems that will result in type classification and follow-on production contract awards.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S63: *SMALL ARMS IMPROVEMENT*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Allot	PM Soldier Weapons:PM Soldier Weapons	1.987	0.880		2.475		-		2.475	Continuing	Continuing	Continuing
Travel	MIPR	PM Soldier Weapons:PM Soldier Weapons	0.280	0.180		0.223		-		0.223	Continuing	Continuing	Continuing
		Subtotal	2.267	1.060		2.698		-		2.698			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	MIPR	Various:Various	2.886	4.240		0.388		-		0.388	Continuing	Continuing	Continuing
		Subtotal	2.886	4.240		0.388		-		0.388			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development	PO	RDECOM - ARDEC:RDECOM - ARDEC	8.181	4.951		8.279		-		8.279	Continuing	Continuing	Continuing
Logistics	MIPR	TACOM:TACOM	0.460	0.630		1.291		-		1.291	Continuing	Continuing	Continuing
Human Research and Eng Directorate	MIPR	Aberdeen Proving Ground:Aberdeen Proving Ground	0.850	0.485		0.598		-		0.598	Continuing	Continuing	Continuing
		Subtotal	9.491	6.066		10.168		-		10.168			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S63: *SMALL ARMS IMPROVEMENT*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	MIPR	Developmental Test Command (DTC):Developmental Test Command (DTC)	3.978	5.704		3.767		-		3.767	Continuing	Continuing	Continuing
Operational Testing	MIPR	Army Test and Evaluation Command (ATEC):Army Test and Evaluation Command (ATEC)	2.649	2.175		1.047		-		1.047	Continuing	Continuing	Continuing
Validation Testing	MIPR	Developmental Test Command (DTC):Developmental Test Command (DTC)	3.912	0.560		0.100		-		0.100	Continuing	Continuing	Continuing
		Subtotal	10.539	8.439		4.914		-		4.914			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	25.183	19.805		18.168		-		18.168			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S63: *SMALL ARMS IMPROVEMENT*

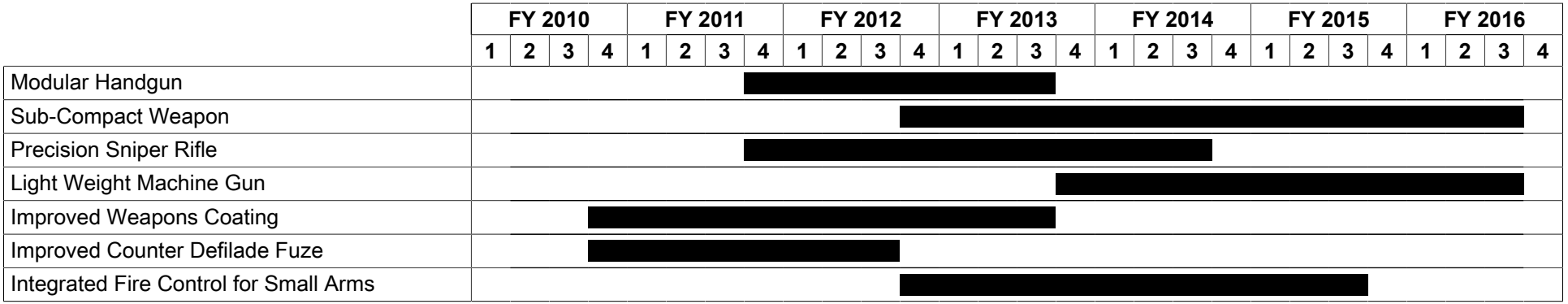

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604601A: *Infantry Support Weapons*	**PROJECT** S63: *SMALL ARMS IMPROVEMENT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Modular Handgun	4	2011	3	2013
Sub-Compact Weapon	4	2012	3	2016
Precision Sniper Rifle	4	2011	3	2014
Light Weight Machine Gun	4	2013	3	2016
Improved Weapons Coating	4	2010	3	2013
Improved Counter Defilade Fuze	4	2010	3	2012
Integrated Fire Control for Small Arms	4	2012	3	2015

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S64: *COMMON REMOTELY OPERATED WPN SYS (CROWS)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
S64: *COMMON REMOTELY OPERATED WPN SYS (CROWS)*	10.000	-	-	-	-	-	-	-	-	0.000	10.000
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project develops capability, reliability and supportability enhancements for Remote Weapon Station platforms, to include the Common Remotely Operated Weapons Station (CROWS), that enhance the Soldier's survivability, lethality and situational awareness while increasing the system's application across combat and tactical platforms. FY10 RDTE funds were reprogrammed from WTCV to address an Operational Need Statement (ONS 08-6152) to provide an increased elevation capability to engage targets at elevations up to 80 degrees. The operational need is driven by Mounted Operation in Urban Terrain (MOUT) environments in order to acquire and engage enemy targets in rooftop or high mountain positions. Funds also maintain a state-of-the-art system by providing for product improvements that will enhance new weapons adapter kits, value-added or performance specification engineering change proposals, software development and integration, engineering modifications (storage lots, redesigns, prototypes and testing) and increased commonality between CROWS variants.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Design & Fabricate CROWS Increased Elevation Capability	9.500	-	-	-	-
Articles:	0				
Description: Description: Contract with Kongsberg Aerospace for development of the increased elevation capability.					
FY 2010 Accomplishments: Design and Fabricate Hardware. FY2010 Accomplishments: Initiated program to address ONS 08-6152. Contract award is planned March 2011.					
Title: Engineering Support	0.394	-	-	-	-
Articles:	0				
Description: Description: Government engineering support for R&D effort.					
FY 2010 Accomplishments: ARDEC engineering support. FY2010 Accomplishments: Evaluated operational needs requirement.					
Title: Program management	0.106	-	-	-	-
Articles:	0				

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S64: *COMMON REMOTELY OPERATED WPN SYS (CROWS)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Description: Program management. ***FY 2010 Accomplishments:*** PM management support of the R&D effort. FY2010 Accomplishments: Initiated program and contract negotiations, coordinated engineering support and evaluation of the operational needs requirement.					
Accomplishments/Planned Programs Subtotals	10.000	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• WTCV, G04700, CROWS: *WTCV, G04700, CROWS*	552.370		0.000	14.856	14.856		56.201	56.173	56.162	0.000	735.762

D. Acquisition Strategy

The Common Remotely Operated Weapon Station (CROWS) uses a single-step acquisition approach in its strategy. The CROWS is planned to achieve Type Classification Standard in 2QFY11, Full Materiel Release in 4QFY11, and Full Rate Production in 2QFY12, in accordance with the Capability Production Document (CPD) Increment 1, as clarified in June 2009.

The program objective is to continue developing, improving and fielding the CROWS on Up-Armored High Mobility Multipurpose Wheeled Vehicles (UA-HMMWV) and other combat vehicles to the Army Acquisition Objective (AAO) and in accordance with the Basis of Issue Plan (BOIP). In addition, the program will support new and emerging urgent requirements like the integration of the Mine Resistant Ambush Protected (MRAP) family of vehicles, M1A2 Abrams Main Battle Tank, M1200 Armored Knight, Ground Combat Vehicles and Joint Lightweight Tactical Vehicles (JLTV).

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S70: *PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
S70: *PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)*	1.267	1.260	3.063	-	3.063	3.568	1.142	1.116	1.128	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project provides system research and development of Personnel Recovery Support System (PRSS) products that support operations to report and locate isolated, missing, detained or captured (IMDC) Soldiers. The PRSS program consists of the enhancement of existing products to ensure continued successful interoperability within the relevant theater of operation, and the development of a Personal Reporting Device (PRD) that will operate over a secure architecture.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Development of Personnel Recovery Support System (PRSS)	1.267	1.260	3.063	-	3.063
Articles:	0	0			
Description: Development of PRSS products that ensure continued successful interoperability within the relevant theater of operation, and development of a Personal Reporting Device that will operate over a secure architecture. ***FY 2010 Accomplishments:*** Development of PRSS products improved interoperability within the relevant theater of operation. ***FY 2011 Plans:*** Continue to develop performance enhancements to improve effectiveness of Personnel Recovery Support System (PRSS) products. ***FY 2012 Base Plans:*** Continue development of performance enhancements to improve effectiveness of Personnel Recovery Support System (PRSS) products, and begin development of a new Personal Reporting Device (PRD) within the evolving DoD global Military Distress (MDR) network.					
Accomplishments/Planned Programs Subtotals	1.267	1.260	3.063	-	3.063

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S70: *PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• Procurement, OPA: *Other Procurement, Army, SSN G01101 - Personnel Recovery Support System (PRSS)*	6.959	7.813	8.509		8.509		8.472	8.244	7.448	Continuing	Continuing
• Procurement, APA: *Aircraft Procurement, Army SSN AZ3110 - ACIS, includes funding of PRSE aircraft mods*	66.053	52.423	82.883		82.883		47.670	102.011	116.056	Continuing	Continuing

D. Acquisition Strategy

The Personnel Recovery Support System (PRSS) program development effort for performance optimization will be executed through Firm Fixed Price contracts and Military Interdepartmental Purchase Requests to other Governmental agencies. Open competition will be conducted for the Personal Reporting Device (PRD) development to encourage integration and innovation from private industry.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S70: *PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Adminstration	Allot	Various Government:Huntsville, Alabama	-	0.027		0.338		-		0.338	Continuing	Continuing	Continuing
		Subtotal	-	0.027		0.338		-		0.338			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Personnel Recovery Support System Development	SS/FP	Various:Product Development	-	0.838		1.939		-		1.939	Continuing	Continuing	Continuing
		Subtotal	-	0.838		1.939		-		1.939			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	RO	Various Organizations:Various Locations	-	0.220		0.586		-		0.586	Continuing	Continuing	Continuing
		Subtotal	-	0.220		0.586		-		0.586			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	RO	Various Organizations:Various Locations	-	0.175		0.200		-		0.200	Continuing	Continuing	Continuing
		Subtotal	-	0.175		0.200		-		0.200			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S70: *PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)*

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	1.260		3.063		-		3.063			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S70: *PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)*

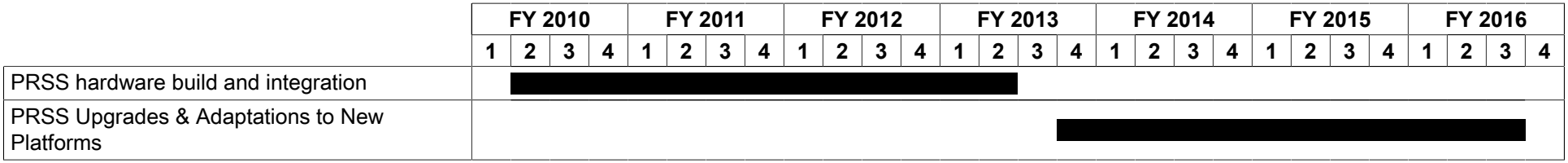

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT S70: *PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
PRSS hardware build and integration	2	2010	2	2013
PRSS Upgrades & Adaptations to New Platforms	4	2013	3	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT VS5: *SOLDIER PROTECTIVE EQUIPMENT*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
VS5: *SOLDIER PROTECTIVE EQUIPMENT*	-	-	3.986	-	3.986	3.988	3.967	3.784	3.762	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This funding supports engineering and manufacturing development tasks related to Individual Soldier Ballistic Protection. It funds system integration and formal DT/OT of preproduction and production representative systems leveraging advancements in technology to continue incremental improvements (sizing, functionality, heat management and reduction of weight/bulk)of body armor, and transition of new technologies as they mature. It funds efforts to assess head protection component technologies to mitigate the effects of ballistic/blast and non-ballistic impact(crash) threats, and continue to increase eyewear ballistic/blast protection and transition to production.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Soldier Protective Equipment ***Description:*** Newly established funding line. Effort was previously executed in Program Element 0604601 S60. Effort is to increase the Warfighter lethality and mobility, by optimizing Soldier protection while effectively managing all life cycle aspect of Personal Protective Equipment (PPE). ***FY 2012 Base Plans:*** Complete stab and ballistic protection integration efforts for the Family of Concealable Body Armor and transition to production in FY13. Initiate System Capability & Manufacturing Process Demonstration (SC&MPD) of Soldier Protection System (SPS) Increment 1a. SPS will be a Mission Tailorable Body Armor (MTBA) suite to provide integrated protection to Soldiers' Vital Torso, Head & Face and Extremities and will transition to production in FY14. Continue development, test and evaluation of self-diagnostic capability for ballistic insert integrity. Continue to improve ballistic & advanced laser protection on combat eyewear. Improve lens coatings to improve scratch & fog resistance.	-	-	3.986	-	3.986
Accomplishments/Planned Programs Subtotals	-	-	3.986	-	3.986

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT VS5: *SOLDIER PROTECTIVE EQUIPMENT*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 0603827: *Soldier Protective Equipment*			1.846		1.846		2.872	2.950	2.938	0.000	12.479
• 121017: *Central Funding & Fielding*			74.940		74.940		78.177	80.240	93.221	0.000	405.291

D. Acquisition Strategy

Acquisition strategies will vary in methods: (1) Quick fixes in 12-24 months or less from concept to Type Classification (TC), (2) modernization improvements which require limited RD&E and will be completed in 24-48 months from inception to TC, and (3) fully integrated development that will require substantial RDT&E funding and will be completed in four years or more.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT VS5: *SOLDIER PROTECTIVE EQUIPMENT*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
In House Support	Various	PM SPE:various	-	-		0.200		-		0.200	Continuing	Continuing	0.000
		Subtotal	-	-		0.200		-		0.200			0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Contracts	Various	Various:Various	-	-		1.400		-		1.400	Continuing	Continuing	0.000
Engineering Spt	MIPR	NSRDEC:Natick, MA	-	-		0.672		-		0.672	Continuing	Continuing	0.000
		Subtotal	-	-		2.072		-		2.072			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Misc Support Costs	Various	Various:Various	-	-		0.600		-		0.600	0.000	0.600	0.000
		Subtotal	-	-		0.600		-		0.600	0.000	0.600	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing Costs	MIPR	Various:various	-	-		1.114		-		1.114	Continuing	Continuing	0.000
		Subtotal	-	-		1.114		-		1.114			0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		3.986		-		3.986			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT VS5: *SOLDIER PROTECTIVE EQUIPMENT*	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604601A: *Infantry Support Weapons*	PROJECT VS5: *SOLDIER PROTECTIVE EQUIPMENT*

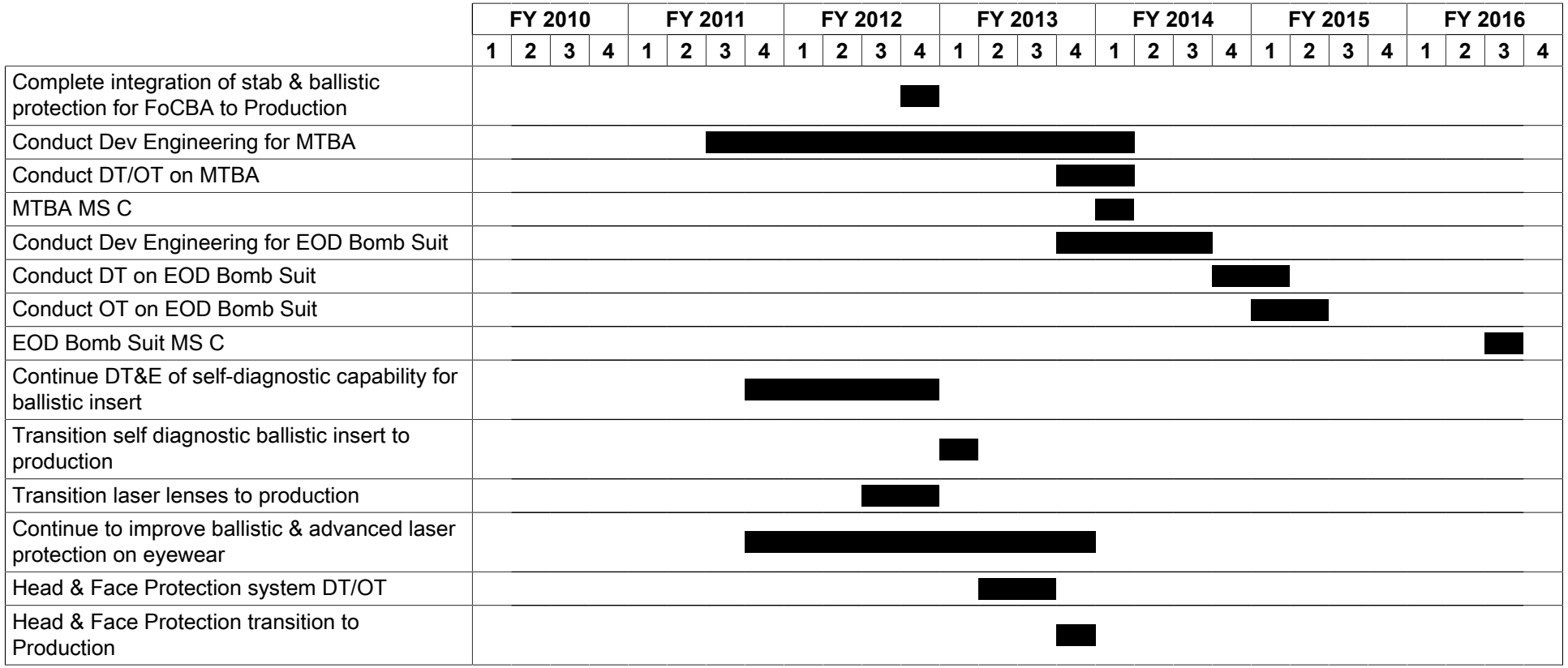

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604601A: *Infantry Support Weapons*	**PROJECT** VS5: *SOLDIER PROTECTIVE EQUIPMENT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Complete integration of stab & ballistic protection for FoCBA to Production	4	2012	4	2012
Conduct Dev Engineering for MTBA	3	2011	1	2014
Conduct DT/OT on MTBA	4	2013	1	2014
MTBA MS C	1	2014	1	2014
Conduct Dev Engineering for EOD Bomb Suit	4	2013	3	2014
Conduct DT on EOD Bomb Suit	4	2014	1	2015
Conduct OT on EOD Bomb Suit	1	2015	2	2015
EOD Bomb Suit MS C	3	2016	3	2016
Continue DT&E of self-diagnostic capability for ballistic insert	4	2011	4	2012
Transition self diagnostic ballistic insert to production	1	2013	1	2013
Transition laser lenses to production	3	2012	4	2012
Continue to improve ballistic & advanced laser protection on eyewear	4	2011	4	2013
Head & Face Protection system DT/OT	2	2013	3	2013
Head & Face Protection transition to Production	4	2013	4	2013

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604604A: *MEDIUM TACTICAL VEHICLES*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	5.460	3.710	3.961	-	3.961	3.974	3.878	3.901	4.707	Continuing	Continuing
H07: *FAMILY OF MED TAC VEH*	5.460	3.710	3.961	-	3.961	3.974	3.878	3.901	4.707	Continuing	Continuing

Note

FY 2012: Funds realigned to higher priority requirements.

A. Mission Description and Budget Item Justification

This Program Element (PE) supports continued modernization of the Army's medium truck and trailer fleet and the Armored Security Vehicle (ASV). In the medium fleet, the Family of Medium Tactical Vehicles (FMTV) replaces aging M35 2 1/2-ton trucks, and M809 and M900 Series 5-ton trucks that are beyond their economic useful life of 15-20 years. FMTV fills 2 1/2-ton Light Medium Tactical Vehicle (LMTV) and 5-ton truck Medium Tactical Vehicle (MTV) requirements, and includes companion trailers, performing over 55 percent of the Army's local and line haul, and unit resupply missions, and operates throughout the theater as multi-purpose transportation vehicles in combat, combat support and combat service support units. The ASV is an all-wheel drive armored vehicle that provides ballistic protection, overhead protection and protection against landmines. It is used by the Military Police to perform missions of area security, maneuver and mobility support, police intelligence, and law and order across the entire operational continuum. It is also being used as a Convoy Protection Platform for Combat Support and Combat Service Support units. This PE funds government technical insertion initiatives that will feed into implementation of the Tactical Wheeled Vehicle (TWV) Modernization Strategy and the TWV Armoring Strategy as a bridge to future tactical vehicle efforts. This PE allows the PM to leverage technology and address capability gaps in performance and reliability as identified by the user community and reported in the field. FY12-16 funding will be used to continue Technology Insertion and address field issues requiring RDT&E funds and will be used to increase protection and survivability of the FMTV through continued development and integration of armor enhancements and applications. ASV funds will be used to develop a Military Police Non-Lethal A-Kit to accept a Non-Lethal Mission Enhancement Package.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	5.683	3.710	5.742	-	5.742
Current President's Budget	5.460	3.710	3.961	-	3.961
Total Adjustments	-0.223	-	-1.781	-	-1.781
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.223	-			
• Adjustments to Budget Years	-	-	-1.781	-	-1.781

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604604A: *MEDIUM TACTICAL VEHICLES*	PROJECT H07: *FAMILY OF MED TAC VEH*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
H07: *FAMILY OF MED TAC VEH*	5.460	3.710	3.961	-	3.961	3.974	3.878	3.901	4.707	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not Applicable.

A. Mission Description and Budget Item Justification

This Program Element (PE) supports continued modernization of the Army's medium truck and trailer fleet and the Armored Security Vehicle (ASV). In the medium fleet, the Family of Medium Tactical Vehicles (FMTV) replaces aging M35 2 1/2-ton trucks, and M809 and M900 Series 5-ton trucks that are beyond their economic useful life of 15-20 years. FMTV fills 2 1/2-ton Light Medium Tactical Vehicle (LMTV) and 5-ton truck Medium Tactical Vehicle (MTV) requirements, and includes companion trailers, performing over 55 percent of the Army's local and line haul, and unit resupply missions, and operates throughout the theater as multi-purpose transportation vehicles in combat, combat support and combat service support units. The ASV is an all-wheel drive armored vehicle that provides ballistic protection, overhead protection and protection against landmines. It is used by the Military Police to perform missions of area security, maneuver and mobility support, police intelligence, and law and order across the entire operational continuum. It is also being used as a Convoy Protection Platform for Combat Support and Combat Service Support units. This PE funds government technical insertion initiatives that will feed into implementation of the Tactical Wheeled Vehicle (TWV) Modernization Strategy and the TWV Armoring Strategy as a bridge to future tactical vehicle efforts. This PE allows the PM to leverage technology and address capability gaps in performance and reliability as identified by the user community and reported in the field. FY12-16 funding will be used to continue Technology Insertion and address field issues requiring RDT&E funds and will be used to increase protection and survivability of the FMTV through continued development and integration of armor enhancements and applications. ASV funds will be used to develop a Military Police Non-Lethal A-Kit to accept a Non-Lethal Mission Enhancement Package.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Automotive Technological Evaluation, Testing & Insertion	0.282	2.740	1.057	-	1.057
Articles:	0	0			
Description: Funding is provided for the following effort					
FY 2010 Accomplishments: Funded FMTV Automotive Technological Evaluation, Testing & Insertion					
FY 2011 Plans: Continued with FMTV Automotive Technological Evaluation, Testing & Insertion					
FY 2012 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604604A: *MEDIUM TACTICAL VEHICLES*	PROJECT H07: *FAMILY OF MED TAC VEH*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
WIII continue to fund FMTV Automotive Technological Evaluation, Testing & Insertion					
Title: Suspension ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Funded FMTV Suspension	0.364 0	-	-	-	-
Title: Armor Spiral Development ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Funded Armor Spiral Development ***FY 2012 Base Plans:*** Continued Armor Spiral Development	2.965 0	-	0.957	-	0.957
Title: CAT Transmission ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Funded FMTV CAT Transmission	0.898 0	-	-	-	-
Title: Fuel Economy ***Description:*** Funding is provided for the following effort ***FY 2012 Base Plans:*** WIII provide funding for FMTV Fuel Economy research	-	-	0.957	-	0.957
Title: Government System Test and Evaluation ***Description:*** Funding is provided for the following effort	-	-	0.990	-	0.990

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604604A: *MEDIUM TACTICAL VEHICLES*	PROJECT H07: *FAMILY OF MED TAC VEH*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2012 Base Plans: Will fund Government System Test and Evaluation					
Title: ASV Military Police Non-Lethal Mission Enhancement Package	0.951	0.970	-	-	-
Articles:	0	0			
Description: Funding is provided for the following effort					
FY 2010 Accomplishments: Funded ASV Military Police Non-Lethal Mission Enhancement Package					
FY 2011 Plans: WIll continue to fund ASV Military Police Non-Lethal Mission Enhancement Package					
Accomplishments/Planned Programs Subtotals	5.460	3.710	3.961	-	3.961

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• D15500: *Family of Medium Tactical Vehicles*	1,344.321	1,434.546	432.936	11.094	444.030		527.582	520.801	699.931	0.000	5,384.720
• D02800: *Armored Security Vehicle*	161.390	167.258								0.000	328.648

D. Acquisition Strategy

FMTV - Technological insertion will be accomplished by a Fixed Price or Cost Plus Fixed Fee (Level of Effort) basis.

ASV - The Mission Enhancement Package (MEP) effort will be completed by TARDEC on a level of effort basis.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604604A: *MEDIUM TACTICAL VEHICLES*	PROJECT H07: *FAMILY OF MED TAC VEH*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FMTV Suspension	Various	Various:Various	-	-		-		-		-	Continuing	Continuing	Continuing
FMTV Automotive Technological Evaluation and Insertion	Various	Various:Various	5.696	2.740		1.057		-		1.057	Continuing	Continuing	Continuing
FMTV Armor Spiral Development	Various	Various:Various	-	-		0.957		-		0.957	Continuing	Continuing	Continuing
FMTV CAT Transmission	Various	BAE Systems TVS:Various	1.132	-		-		-		-	Continuing	Continuing	Continuing
FMTV Fuel Economy	C/FP	Various:Various	-	-		0.957		-		0.957	Continuing	Continuing	Continuing
ASV Mission Enhancement Package (MEP)	TBD	TBD:TBD	-	0.970		-		-		-	Continuing	Continuing	Continuing
		Subtotal	6.828	3.710		2.971		-		2.971			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FMTV Export Power Test	TBD	TBD:TBD	0.031	-		-		-		-	Continuing	Continuing	Continuing
FMTV CAT Transmission Test	MIPR	Aberdeen Test Center:Aberdeen Test Center	-	-		-		-		-	Continuing	Continuing	Continuing
FMTV Automotive Technological Evaluation and Insertion	Various	Various:Various	-	-		0.352		-		0.352	Continuing	Continuing	Continuing
FMTV Armor Spiral Development Testing	MIPR	TARDEC:Warren, MI	-	-		0.319		-		0.319	Continuing	Continuing	Continuing
FMTV Fuel Economy Testing	MIPR	TARDEC:Warren, MI	-	-		0.319		-		0.319	Continuing	Continuing	Continuing
		Subtotal	0.031	-		0.990		-		0.990			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604604A: *MEDIUM TACTICAL VEHICLES*	PROJECT H07: *FAMILY OF MED TAC VEH*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	6.859	3.710		3.961		-		3.961			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604604A: *MEDIUM TACTICAL VEHICLES*	PROJECT H07: *FAMILY OF MED TAC VEH*

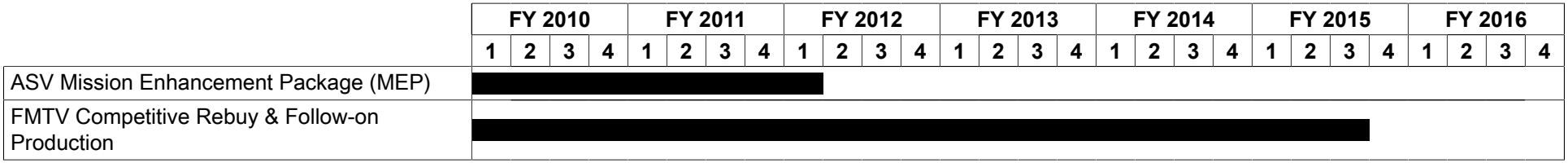

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604604A: *MEDIUM TACTICAL VEHICLES*	PROJECT H07: *FAMILY OF MED TAC VEH*

Schedule Details

	Start		End	
Events	Quarter	Year	Quarter	Year
ASV Mission Enhancement Package (MEP)	1	2010	1	2012
FMTV Competitive Rebuy & Follow-on Production	1	2010	3	2015

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604609A: *Smoke, Obscurant and Target Defeating Sys - Eng Dev*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	0.939	5.335	-	-	-	-	-	-	-	0.000	6.274
198: *Target Defeating System*	-	2.425	-	-	-	-	-	-	-	0.000	2.425
200: *SMOKE/OBSCURANT SYSTEM*	0.939	2.910	-	-	-	-	-	-	-	0.000	3.849

Note

Fiscal Year 2012: Program decrease to both Target Defeating System and Smoke/Obscurant System.

A. Mission Description and Budget Item Justification

Project 0604609A supports the conducting of System Development and Demonstration (SDD) for the development and improvement of an array of obscurant systems to improve survivability of the combined armed forces, complement combined weapon systems, and enhance force effectiveness and combat power. This program element supports development of the Projected/Generated Obscuration Capability (PGOC), including the Screening Obscuration Module (SOM) initiatives. This program element supports critical management studies and analyses that are conducted on a continuing basis to ensure that engineering and manufacturing development efforts are targeted against the emerging threat. Program element supports the conduct of SDD in smoke and obscurant agents, munitions, and devices to improve the survivability of the combined armed forces, complement combined weapon systems, and enhance force effectiveness and combat power. U.S. Forces must be able to effectively neutralize and degrade energy weapon systems and electro-optical systems/smart weapons that operate in the full range of the electromagnetic spectrum. Improvements are sought across the entire multi-spectral range from visual through infrared (IR) and millimeter wavelengths (MMW) radar for incorporation into self-protection smoke systems. The smoke obscuration technologies supported by this program element enhance smoke systems as force multipliers. This program has no FY12 Base or OCO RDTE request.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	0.973	5.335	13.981	-	13.981
Current President's Budget	0.939	5.335	-	-	-
Total Adjustments	-0.034	-	-13.981	-	-13.981
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-13.981	-	-13.981
• Other Adjustments 1	-0.034	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604609A: *Smoke, Obscurant and Target Defeating Sys - Eng Dev*	PROJECT 198: *Target Defeating System*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
198: *Target Defeating System*	-	2.425	-	-	-	-	-	-	-	0.000	2.425
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Project supports the development and improvement of an array of obscurant systems to improve survivability of the combined armed forces, complement combined weapon systems, and enhance force effectiveness and combat power. This program element supports development of the Projected/Generated Obscuration Capability (PGOC), including the Screening Obscuration Module (SOM) initiatives. SOM is a small smoke generator that degrades the visual through near infrared portion of the Electro-Magnetic Spectrum. PGOC will integrate an obscuration generator and grenade launcher(s) onto an unmanned platform to provide the capability of obscuring the Visual/IR spectrum.

This program element supports critical management studies and analyses that are conducted on a continuing basis to ensure that engineering and manufacturing development efforts are targeted against the emerging threat. US Forces must be able to effectively neutralize and degrade energy weapon systems and electro-optical systems/smart weapons that operate in the full range of the electromagnetic spectrum. Improvements are sought across the entire multi-spectral range from visual through infrared (IR) and millimeter wavelengths (MMW) radar for incorporation into self-protection smoke systems. This program has no FY12 Base or OCO RDTE request.

PGOC Milestone B scheduled for 4Q FY2012. During POM 13-17, program will request BA4, Smoke, Obscurant (E79) funds in FY2013 and FY2014 be reprogrammed to BA5 to support efforts following Milestone B.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Modeling, simulation, and toxicology effort. ***Articles:*** ***Description:*** Modeling, simulation, and toxicology effort. ***FY 2011 Plans:*** Modeling, simulation, and toxicology effort.	-	0.625 0	-
Title: PGOC development. ***Articles:*** ***Description:*** PGOC development. ***FY 2011 Plans:***	-	1.800 0	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604609A: *Smoke, Obscurant and Target Defeating Sys - Eng Dev*	PROJECT 198: *Target Defeating System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
PGOC development.			
Accomplishments/Planned Programs Subtotals	-	2.425	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• RDT&E, BA4: *RDT&E, BA4, PE 0603627A, Project E79 Smoke, Obscurant and Target Defeating Sys - Adv Dev*	4.894	2.425	9.501		9.501		3.828			0.000	25.237
• RDT&E, BA5: *RDT&E, BA5, PE 0604609A, Project 200 Smoke, Obscurant and Target Defeating Sys - Eng Dev*	0.973	2.910								0.000	3.883

D. Acquisition Strategy

Acquisition Strategy: Development of SOD, PGOC and SOM systems to include design, construction, modeling and testing of prototypes.

SOD acquisition strategy follows an evolutionary strategy with two increments. The first increment, SOD-Visual-restricted, provides visual only screening in a restricted environment, such as the inside of a building. The second increment, SOD-Bi-Spectral, will provide visual through far-infrared screening in all environments.

PGOC acquisition strategy follows an evolutionary strategy with two increments. The first increment will integrate an obscuration generator and grenade launcher(s) onto an unmanned platform to provide the capability of obscuring the Visual/IR spectrum. The second increment will add the capability of obscuring the Millimeter Wave (MMW) spectrum to the obscuration generator. PGOC Milestone A was approved 2Q FY2011. PGOC Milestone B is scheduled for 4Q FY2012. PGOC Milestone C is scheduled for 4Q FY2014.

SOM acquisition strategy is to develop a small smoke generator that degrades the visual through near infrared portion of the Electro-Magnetic Spectrum. SOM Milestone B is scheduled for 4Q FY2012. SOM Milestone C is scheduled for 4Q FY2015.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604609A: *Smoke, Obscurant and Target Defeating Sys - Eng Dev*	PROJECT 200: *SMOKE/OBSCURANT SYSTEM*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
200: *SMOKE/OBSCURANT SYSTEM*	0.939	2.910	-	-	-	-	-	-	-	0.000	3.849
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Project supports the development and improvement of an array of obscurant systems to improve survivability of the combined armed forces, complement combined weapon systems, and enhance force effectiveness and combat power. This program element supports development of the Projected/Generated Obscuration Capability (PGOC), including the Screening Obscuration Module (SOM) initiatives. SOM is a small smoke generator that degrades the visual through near infrared portion of the Electro-Magnetic Spectrum. PGOC will integrate an obscuration generator and grenade launcher(s) onto an unmanned platform to provide the capability of obscuring the Visual/IR spectrum.

This program element supports critical management studies and analyses that are conducted on a continuing basis to ensure that engineering and manufacturing development efforts are targeted against the emerging threat. US Forces must be able to effectively neutralize and degrade energy weapon systems and electro-optical systems/smart weapons that operate in the full range of the electromagnetic spectrum. Improvements are sought across the entire multi-spectral range from visual through infrared (IR) and millimeter wavelengths (MMW) radar for incorporation into self-protection smoke systems. This program has no FY12 Base or OCO RDTE request.

PGOC Milestone B scheduled for 4Q FY2012. During POM 13-17, program will request BA4, Smoke, Obscurant (E79) funds in FY2013 and FY2014 be reprogrammed to BA5 to support efforts following Milestone B.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Prepare and conduct MDDR and Milestone A (PGOC). ***Articles:*** ***Description:*** Prepare and conduct MDDR and Milestone A (PGOC). ***FY 2010 Accomplishments:*** Prepare and conduct MDDR and Milestone A (PGOC).	0.939 0	-	-
Title: PGOC development. ***Articles:*** ***Description:*** PGOC development. ***FY 2011 Plans:***	-	2.910 0	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604609A: *Smoke, Obscurant and Target Defeating Sys - Eng Dev*	PROJECT 200: *SMOKE/OBSCURANT SYSTEM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
PGOC development.			
Accomplishments/Planned Programs Subtotals	0.939	2.910	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 0603627: *Smoke, Obscurant and Target Defeating Sys - Adv Dev*	4.894	2.425	10.300		10.300		4.000			0.000	26.519
• 0604609: *Smoke and Oscurant and Target Defeating Sys - Eng Dev*		2.425								0.000	2.425

D. Acquisition Strategy

Acquisition Strategy: Development of SOD, PGOC and SOM systems to include design, construction, modeling and testing of prototypes.

SOD acquisition strategy follows an evolutionary strategy with two increments. The first increment, SOD-Visual-restricted, provides visual only screening in a restricted environment, such as the inside of a building. The second increment, SOD-Bi-Spectral, will provide visual through far-infrared screening in all environments.

PGOC acquisition strategy follows an evolutionary strategy with two increments. The first increment will integrate an obscuration generator and grenade launcher(s) onto an unmanned platform to provide the capability of obscuring the Visual/IR spectrum. The second increment will add the capability of obscuring the Millimeter Wave (MMW) spectrum to the obscuration generator. PGOC Milestone A was approved 2Q FY2011. PGOC Milestone B is scheduled for 4Q FY2012. PGOC Milestone C is scheduled for 4Q FY2014.

SOM acquisition strategy is to develop a small smoke generator that degrades the visual through near infrared portion of the Electro-Magnetic Spectrum. SOM Milestone B is scheduled for 4Q FY2012. SOM Milestone C is scheduled for 4Q FY2015.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604611A: *JAVELIN (AAWS-M)*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	-	9.999	17.340	-	17.340	49.408	73.749	121.839	61.600	0.000	333.935
499: *JAVELIN (AAWS-M)*	-	9.999	17.340	-	17.340	49.408	73.749	121.839	61.600	0.000	333.935

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

FY12 RDTE funding continues development efforts for Javelin Increment II. Javelin Increment II is planned as a capability upgrade of the currently fielded Javelin through modernization of key system components. Javelin Increment II consists of modernization of the Javelin warhead and missile guidance section integrated with the existing Javelin system components, resulting in a system enabling lethality at extended ranges. The Extended Range Line of Sight Lethality Initial Capabilities Document was approved on 3 Nov 10 by the Joint Requirements Oversight Council (JROC). Javelin Increment II mitigates current capability gaps against fleeting targets of opportunity and target sets across the full spectrum of operations. Javelin Increment II modernization capability improvements are a direct result of lessons learned from firing 1,281 Javelin in Iraq and Afghanistan through CY10. Multi-purpose warhead cut-in and fielding will be accelerated, if earlier opportunity exists.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	9.999	17.400	-	17.400
Current President's Budget	-	9.999	17.340	-	17.340
Total Adjustments	-	-	-0.060	-	-0.060
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.060	-	-0.060

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604611A: *JAVELIN (AAWS-M)*	PROJECT 499: *JAVELIN (AAWS-M)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
499: *JAVELIN (AAWS-M)*	-	9.999	17.340	-	17.340	49.408	73.749	121.839	61.600	0.000	333.935
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

FY12 RDTE funding continues development efforts for Javelin Increment II. Javelin Increment II is planned as a capability upgrade of the currently fielded Javelin through modernization of key system components. Javelin Increment II consists of modernization of the Javelin warhead and missile guidance section integrated with the existing Javelin system components, resulting in a system enabling lethality at extended ranges. The Extended Range Line of Sight Lethality Initial Capabilities Document was approved on 3 Nov 10 by the Joint Requirements Oversight Council (JROC). Javelin Increment II mitigates current capability gaps against fleeting targets of opportunity and target sets across the full spectrum of operations. Javelin Increment II modernization capability improvements are a direct result of lessons learned from firing 1,281 Javelin in Iraq and Afghanistan through CY10. Multi-purpose warhead cut-in and fielding will be accelerated, if earlier opportunity exists.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Javelin Increment II Risk Reduction	-	9.999	17.340
Articles:		0	
Description: Javelin Increment II consists of warhead and guidance section modernization to enable lethality at extended ranges.			
FY 2011 Plans: Javelin Increment II development of multi-purpose warhead and guidance section modernization technologies.			
FY 2012 Plans: Javelin Increment II development of warhead and guidance section modernization technologies and documentation effort prepares for FY13 MS B. Design work and prototype fabrication will begin to support guidance section and warhead modernization to enable lethality at extended ranges.			
Accomplishments/Planned Programs Subtotals	-	9.999	17.340

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• CC0007: *Javelin (AAWS-M)*	258.553	163.929	160.767		160.767		138.705	141.068	113.385	0.000	1,110.037

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604611A: *JAVELIN (AAWS-M)*	PROJECT 499: *JAVELIN (AAWS-M)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 0203802: *Javelin*	3.979									0.000	3.979

D. Acquisition Strategy

The Javelin Increment II Material Development Decision (MDD) is planned for late FY 2011. The risk reduction effort will take place in FY 2012 and early FY 2013. Competition will be pursued on the path to Milestone (MS) B. Javelin Increment II MS B is planned for FY 2013 followed by a 48-month Engineering and Manufacturing Development (EMD) phase. Javelin Increment II consists of modernization of the warhead and missile guidance section enabling lethality at extended ranges. The Javelin modernization program meets the identified need of the Army to ensure that United States (US) forces have an overmatching capability against current and future enemy combatants.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604611A: *JAVELIN (AAWS-M)*	PROJECT 499: *JAVELIN (AAWS-M)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering/Program Mgmt, Contractor	TBD	TBD:TBD	-	1.792		-		-		-	Continuing	Continuing	0.000
System Engineering/Program Management, Govt	TBD	Close Combat Weapon Systems (CCWS) Project Office:Redstone Arsenal, Alabama	-	0.956		2.549		-		2.549	Continuing	Continuing	0.000
		Subtotal	-	2.748		2.549		-		2.549			0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Engineering	TBD	TBD:TBD	-	5.746		14.791		-		14.791	Continuing	Continuing	0.000
		Subtotal	-	5.746		14.791		-		14.791			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Test & Evaluation, Contractor	TBD	TBD:TBD	-	0.165		-		-		-	Continuing	Continuing	0.000
System Test & Evaluation, Govt	TBD	Other Government Agencies:TBD	-	1.340		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	1.505		-		-		-			0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	9.999		17.340		-		17.340			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604611A: *JAVELIN (AAWS-M)*	PROJECT 499: *JAVELIN (AAWS-M)*

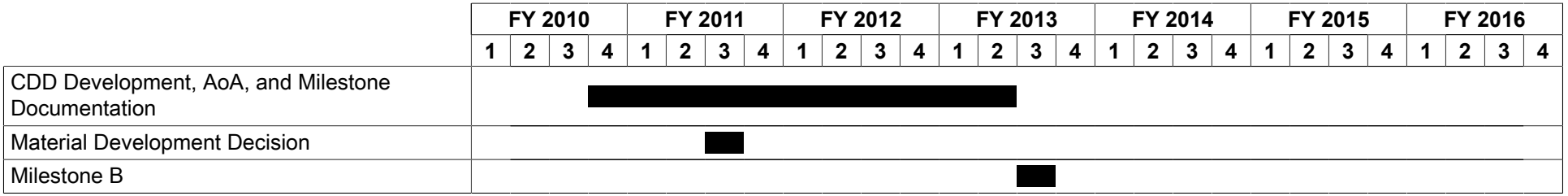

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604611A: *JAVELIN (AAWS-M)*	**PROJECT** 499: *JAVELIN (AAWS-M)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CDD Development, AoA, and Milestone Documentation	4	2010	2	2013
Material Development Decision	3	2011	3	2011
Milestone B	3	2013	3	2013

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604622A: *Family of Heavy Tactical Vehicles*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	8.072	3.519	5.478	-	5.478	3.591	2.976	2.952	2.937	Continuing	Continuing
659: *FAMILY OF HVY TAC VEH*	5.538	2.135	-	-	-	-	-	-	-	0.000	7.673
65A: *MOVEMENT TRACKING SYSTEM (MTS)*	1.309	1.132	1.490	-	1.490	1.597	-	-	-	Continuing	Continuing
E50: *TRAILER DEVELOPMENT*	1.225	0.252	1.994	-	1.994	-	-	-	-	Continuing	Continuing
VR5: *TWV PROTECTION KITS*	-	-	1.994	-	1.994	1.994	2.976	2.952	2.937	0.000	12.853

Note

FY10 Funding decreased due to reprogramming of funds.
FY12 Funding increase for Tactical Wheeled Vehicles Protection Kits.

A. Mission Description and Budget Item Justification

This program element aligns system development and demonstration of Heavy Tactical Vehicles with Future Modular Force requirements to support combat and combat support missions. These missions include the following: line haul, local haul, and unit resupply. These trucks transport water, ammunition, and general cargo over all terrain and throughout the battle-space. Funding will also be used for developing the Army's next generation of tactical truck, as part of the Army's Tactical Wheeled Vehicle Modernization Strategy. Funding in Project 65A is for the development of the Movement Tracking System (MTS). Funding in Project E50 supports the continued modernization of the Army's trailer fleets and supports the continuous product improvements, technology insertion, and new capabilities for tactical trailers. Funding in Project VR5 supports periodic, evolutionary upgrade of survivability and crew protection for Heavy Tactical Vehicles as described in the Long Term Protection Strategy.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	9.826	3.519	3.454	-	3.454
Current President's Budget	8.072	3.519	5.478	-	5.478
Total Adjustments	-1.754	-	2.024	-	2.024
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-1.500	-			
• SBIR/STTR Transfer	-0.254	-			
• Adjustments to Budget Years	-	-	2.024	-	2.024

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604622A: *Family of Heavy Tactical Vehicles*	PROJECT 659: *FAMILY OF HVY TAC VEH*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
659: *FAMILY OF HVY TAC VEH*	5.538	2.135	-	-	-	-	-	-	-	0.000	7.673
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

Not applicable for this item.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Rocket Propelled Grenade (RPG) net optimization between HEMTT A2 and A4. ***Articles:*** ***Description:*** Rocket Propelled Grenade (RPG) net optimization between HEMTT A2 and A4. ***FY 2010 Accomplishments:*** Integrate protection against Rocket Propelled Grenade (RPG) threats for HEMTT vehicles. Adapt proven RPG net technology to meet the protection requirements for HEMTT A4 and HEMTT A2. Integration effort requires panel sizing and attaching basketry with standoff hardware. Leverage TARDEC survivability expertise to perform the integration.	0.383 0	-	-	-	-
Title: HEMTT A3 performance and durability testing. ***Articles:*** ***Description:*** HEMTT A3 performance and durability testing. ***FY 2010 Accomplishments:*** Perform durability and performance testing for direct comparison of the reliability, automotive performance and fuel consumption of the HEMTT A3 electric drive vehicle with the current production HEMTT A4.	0.950 0	-	-	-	-
Title: FHTV Technology Insertion ***Articles:*** ***Description:*** FHTV Technology Insertion	4.205 0	2.135 0	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604622A: *Family of Heavy Tactical Vehicles*	**PROJECT** 659: *FAMILY OF HVY TAC VEH*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Research and evaluate vehicle technology insertion candidates on HTV vehicle platforms to improve vehicle reliability, maintainability, safety, and efficiency. Incorporate vehicle change through an Engineering Change Proposal (ECP) process into FHTV production vehicles. ***FY 2011 Plans:*** Continuation of HTV's research and evaluate vehicle technology insertion candidates on HTV vehicle platforms to improve vehicle reliability, maintainability, safety, and efficiency. Incorporate vehicle change through an Engineering Change Proposal (ECP) process into FHTV production vehicles.					
Accomplishments/Planned Programs Subtotals	5.538	2.135	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• Family of Heavy Tactical Vehicles: *Family of Heavy Tactical Vehicles (FHTV) DA0500*	1,402.625	738.418	627.294	47.214	674.508		41.323	39.195	49.826	0.000	3,043.927

D. Acquisition Strategy

The Rocket Propelled Grenade integration will be accomplished within TARDEC and funded via Military Interdepartmental Purchase Request (MIPR). HEMTT A3 test and evaluation will be accomplished at Aberdeen Test Center and funded via MIPR. FHTV Technology insertion will be accomplished as tasks against a pre-existing contract with Osh Kosh Corporation.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604622A: *Family of Heavy Tactical Vehicles*	PROJECT 659: *FAMILY OF HVY TAC VEH*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Rocket Propelled Grenade (RPG) net optimization between HEMTT A2 and A4	MIPR	TARDEC:Warren, MI	-	-		-		-		-	Continuing	Continuing	Continuing
FHTV Technology Insertion	SS/CPFF	Osh Kosh Truck Corporation:Osh Kosh, WI	-	2.135		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	2.135		-		-		-			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HEMTT A3 performance and durability testing	MIPR	Aberdeen Testing Center:Aberdeen, MD	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	-		-		-		-			0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	2.135		-		-		-			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604622A: *Family of Heavy Tactical Vehicles*	PROJECT 659: *FAMILY OF HVY TAC VEH*

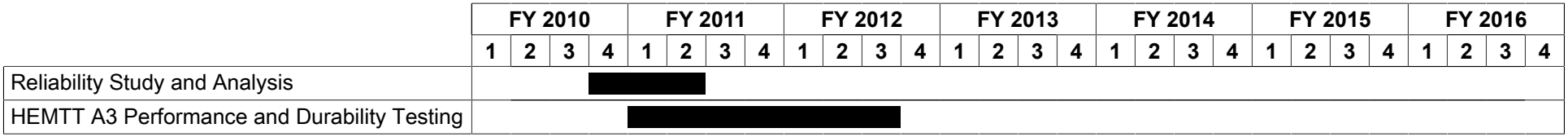

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604622A: *Family of Heavy Tactical Vehicles*	**PROJECT** 659: *FAMILY OF HVY TAC VEH*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Reliability Study and Analysis	4	2010	2	2011
HEMTT A3 Performance and Durability Testing	1	2011	3	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604622A: *Family of Heavy Tactical Vehicles*	PROJECT 65A: *MOVEMENT TRACKING SYSTEM (MTS)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
65A: *MOVEMENT TRACKING SYSTEM (MTS)*	1.309	1.132	1.490	-	1.490	1.597	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Testing includes Information Assurance (IAVA), penetration testing, etc.

A. Mission Description and Budget Item Justification

Movement Tracking System (MTS) is a satellite based, asset visibility and situational awareness enabler that assists Combat Support/Combat Service Support (CS/CSS) commanders and their staffs. MTS identifies and tracks the location of vehicles, communicates with vehicle operators, and redirects missions on a worldwide, near real-time basis during peacetime operations and war. MTS provides the capability to link ground level operators conducting missions and commanders/managers that plan, direct, and control operations and allows for continuous CS/CSS asset visibility across the tactical area of operations. FY08/09 funding supported development of block modifications on the MTS. This block modification will develop and test required interfaces to Transportation Coordinator's Automated Information for Movement System (TC AIMS II) (direct electronic interface) and Global Combat Support System-Army (GCSS-Army) (direct electronic interface). FY12 funding continues interface development & testing.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Movement Tracking System (MTS)	1.171	0.982	0.879	-	0.879
Articles:	0	0			
Description: Funding is provided for the following effort					
FY 2010 Accomplishments: Development of block modifications on the MTS system					
FY 2011 Plans: Continuous improvements to system.					
FY 2012 Base Plans: WIll continue to provide improvements to the system					
Title: System Testing	0.138	0.150	0.611	-	0.611
Articles:	0	0			
Description: Funding is provided for the following effort					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604622A: *Family of Heavy Tactical Vehicles*	**PROJECT** 65A: *MOVEMENT TRACKING SYSTEM (MTS)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Provided system testing for the Movement Tracking System ***FY 2011 Plans:*** Continued System Testing ***FY 2012 Base Plans:*** Testing includes Information Assurance (IAVA) testing, penetration testing, etc.					
Accomplishments/Planned Programs Subtotals	1.309	1.132	1.490	-	1.490

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• D16103: *Movement Tracking System (MTS)*	78.377	93.736	55.147	32.000	87.147					Continuing	Continuing

D. Acquisition Strategy

RDTE efforts to support block development approach through a continuous series of overlapping modular development and integration testing to include multiple interface developments in support of follow-on production.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604622A: *Family of Heavy Tactical Vehicles*	PROJECT 65A: *MOVEMENT TRACKING SYSTEM (MTS)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software development, engineering, testing, program management	C/FP	Comtech Mobile Datacom Corp:Germantown, MD	12.827	0.982		1.340		-		1.340	Continuing	Continuing	Continuing
		Subtotal	12.827	0.982		1.340		-		1.340			

Remarks

A full and open competition Request for Proposal release is imminent. Comtech Datacom Corporation is the current contractor under a contract extention.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Testing	TBD	TBD:TBD	2.761	0.150		0.150		-		0.150	Continuing	Continuing	0.000
		Subtotal	2.761	0.150		0.150		-		0.150			0.000

Remarks

Prototype testing.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	15.588	1.132		1.490		-		1.490			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604622A: *Family of Heavy Tactical Vehicles*	PROJECT 65A: *MOVEMENT TRACKING SYSTEM (MTS)*

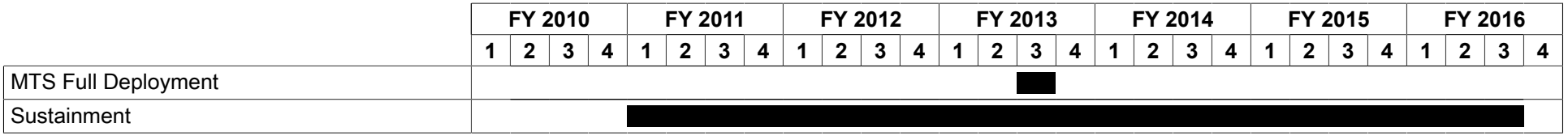

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604622A: *Family of Heavy Tactical Vehicles*	**PROJECT** 65A: *MOVEMENT TRACKING SYSTEM (MTS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MTS Full Deployment	3	2013	3	2013
Sustainment	1	2011	3	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604622A: *Family of Heavy Tactical Vehicles*	PROJECT E50: *TRAILER DEVELOPMENT*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
E50: *TRAILER DEVELOPMENT*	1.225	0.252	1.994	-	1.994	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This program element supports continued modernization of the Army's trailer fleet. The FY 2012 funds support development and integration of emerging state of the art technology improvements and new capabilities. FY 2012 funding will develop, design and build prototype to meet Army operational capability gaps identified by CASCOM, and also will support continued insertion of new technology to the current fleet, including testing. Other on-going technologies being reviewed are corrosion prevention and modularity and transportability enhancements such as improved suspension. Modernized trailers are better able to match the capabilities of today's improved tactical wheeled vehicles and tractors.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Program Management ***Articles:*** ***Description:*** Program Management ***FY 2011 Plans:*** Funds will provide Program Management to support the system	- 0	0.252 0	-	-	-
Title: Trailer enhancements. ***Articles:*** ***Description:*** Funding is provided for the following effort. ***FY 2010 Accomplishments:*** Trailer enhancements. ***FY 2012 Base Plans:*** Semitrailer enhancements to increase loading and off-loading efficiency and increase the range of Engineer Construction Equipment (ECE) that can be transported on the M870A3. Development efforts will focus on modifications to the gooseneck and to the gooseneck/deck interface. Enhancements will leverage data obtained from the Army's operational experience with equipment transporter trailers, as well as the current state-of-the-art in commercial equipment transporter trailer design. Structural impacts and feasibility of hardware modifications necessary to incorporate enhancements will be evaluated using Modeling and Simulation, and will be verified	0.450 0	-	1.994	-	1.994

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604622A: *Family of Heavy Tactical Vehicles*	PROJECT E50: *TRAILER DEVELOPMENT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
through incorporation into a concept demonstration trailer which will be subjected to a 6,000 mile durability test. Increases in trailer loading efficiency and range of ECE transportable will be evaluated against an unmodified M870A3.					
Title: Mobile Power 30KW system power control unit development project. ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Mobile Power 30KW system power control unit development project.	0.775 0	-	-	-	-
Accomplishments/Planned Programs Subtotals	1.225	0.252	1.994	-	1.994

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• D01500: *Semi-Trailer Flatbed 22.5T M871A3*	2.390									Continuing	Continuing
• D01600: *Semi-Trailer Flatbed 34T M872A4*	10.972									Continuing	Continuing

D. Acquisition Strategy

FY12 funds are expected to be executed via contract to Osh Kosh Truck Corporation for design, development and build of system trailer prototypes.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604622A: *Family of Heavy Tactical Vehicles*	PROJECT E50: *TRAILER DEVELOPMENT*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	TACOM:Warren, MI	3.293	0.252		-		-		-	Continuing	Continuing	Continuing
Design, develop and build System Prototype Demonstrator Trailers	SS/CPFF	Osh Kosh Truck Corporation:Osh Kosh, WI	1.949	-		1.994		-		1.994	Continuing	Continuing	Continuing
Mobile Power 30KW control unit	MIPR	TARDEC:Warren, MI	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	5.242	0.252		1.994		-		1.994			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.242	0.252		1.994		-		1.994			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604622A: *Family of Heavy Tactical Vehicles*	PROJECT E50: *TRAILER DEVELOPMENT*

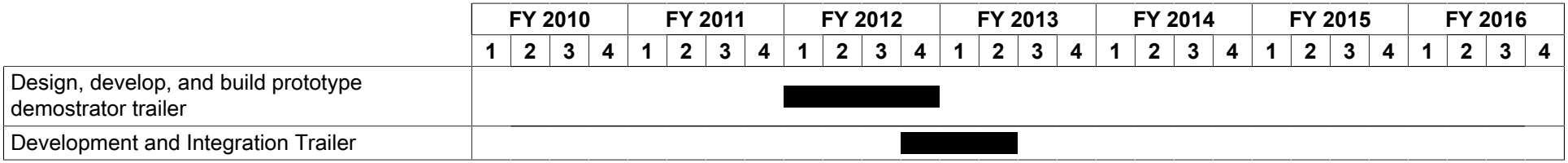

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604622A: *Family of Heavy Tactical Vehicles*	**PROJECT** E50: *TRAILER DEVELOPMENT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Design, develop, and build prototype demostrator trailer	1	2012	4	2012
Development and Integration Trailer	4	2012	2	2013

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604622A: *Family of Heavy Tactical Vehicles*	PROJECT VR5: *TWV PROTECTION KITS*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
VR5: *TWV PROTECTION KITS*	-	-	1.994	-	1.994	1.994	2.976	2.952	2.937	0.000	12.853
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This program element supports periodic, evolutionary upgrade of survivability and crew protection for Heavy Tactical Vehicles as described in the Long Term Protection Strategy. The upgrades will leverage from Army Technology Objective's (ATO) survivability and Army Research Laboratory's (ARL) research and development activities to develop and evaluate kits to adapt and anticipate changing threat environments, protection gaps, or improve the operating performance, efficiency, and reliability of HTV systems with protection kits installed by application of weight reduction technology.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Program Management ***Description:*** Funding is provided for the following effort ***FY 2012 Base Plans:*** Program Managment support	-	-	0.200	-	0.200
Title: Design and Build Prototype Kits. ***Description:*** Design and build prototype kits Heavy Tactical Vehicle systems. ***FY 2012 Base Plans:*** Design and build prototype kits that represent production alternatives in terms of form, fit, and function sufficient to validate the required protection levels and the kit interfaces to the vehicle platform.	-	-	1.594	-	1.594
Title: Test and Evaluation. ***Description:*** Funding is provided for the following effort ***FY 2012 Base Plans:*** Test and evaluation of Tactical Wheel Vehicle protection kits consist of ballistic evaluations, automotive performance, and durability mileage sufficient to assess kit performance against established vehicle and ballistic requirements. Testing will determine capabilities and limitations of the protection kit as integration onto the vehicle platform.	-	-	0.200	-	0.200
Accomplishments/Planned Programs Subtotals	-	-	1.994	-	1.994

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604622A: *Family of Heavy Tactical Vehicles*	PROJECT VR5: *TWV PROTECTION KITS*

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

FY12 funds are expected to be executed via Military Interdepartmental Purchase Request (MIPRs) to TARDEC and/or Army Research Laboratory (ARL) to support kit development efforts and to government test centers such as Aberdeen Proving Grounds (APG) or Yuma Proving Grounds (YPG) for testing.

FY12 funds will produce prototype kits using a pre-existing contract with Osh Kosh Truck Corporation. The prototype kits will be installed and evaluated at a government test center.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604622A: *Family of Heavy Tactical Vehicles*	PROJECT VR5: *TWV PROTECTION KITS*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	TACOM:Warren, MI	-	-		0.200		-		0.200	0.000	0.200	0.000
Design, develop, and build prototype kits.	SS/CPFF	Osh Kosh Truck Corporation:Osh Kosh, WI	-	-		1.594		-		1.594	0.000	1.594	0.000
		Subtotal	-	-		1.794		-		1.794	0.000	1.794	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Kits Test and Evaluation	MIPR	Aberdeen or Yuma Proving Grounds:Aberdeen, MD or Yuma, AZ	-	-		0.200		-		0.200	0.000	0.200	0.000
		Subtotal	-	-		0.200		-		0.200	0.000	0.200	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		1.994		-		1.994	0.000	1.994	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604622A: *Family of Heavy Tactical Vehicles*	**PROJECT** VR5: *TWV PROTECTION KITS*

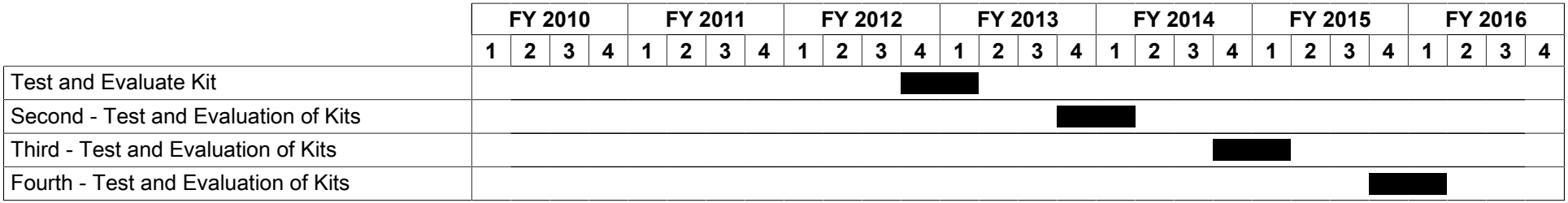

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604622A: *Family of Heavy Tactical Vehicles*	**PROJECT** VR5: *TWV PROTECTION KITS*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Test and Evaluate Kit	4	2012	1	2013
Second - Test and Evaluation of Kits	4	2013	1	2014
Third - Test and Evaluation of Kits	4	2014	1	2015
Fourth - Test and Evaluation of Kits	4	2015	1	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604633A: *AIR TRAFFIC CONTROL*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	8.453	9.892	22.922	-	22.922	10.023	10.254	6.835	6.915	Continuing	Continuing
586: *AIR TRAFFIC CONTROL*	8.453	9.892	22.922	-	22.922	10.023	10.254	6.835	6.915	Continuing	Continuing

Note

FY 12 - Funding increased $9577K for ATNAVICS Modernization and $1344 for Advanced Surveillance

FY 10 - Reflects +304K OMNIBUS reprogramming for Afghanistan Mission Network; +835K below threshold reprogramming

A. Mission Description and Budget Item Justification

This program element (PE) funds continuous efforts in the development of modernized tactical and fixed base Air Traffic Control (ATC) systems that will enable safety of aircraft landings in both the tactical and strategic ATC domains. ATC systems are required to achieve or maintain compliance with civil, military, domestic and international air traffic control and combat identification requirements and mandates. Funding will be utilized to develop, evaluate and integrate candidate technology mandates. Funded in this program element is the development of the Tactical Airspace Integration System (TAIS) Web Based Architecture and Airspace Improvements Initiative, Advanced Surveillance, Air Traffic Navigation Integration and Coordination System (ATNAVICS) modernization, Mobile Tower System (MOTS), Tactical Terminal Control System (TTCS) Pre-Planned Product Improvements (P3I), Fixed Base Precision Approach Radar (FBPAR) P3I, and maintenance monitoring. ATNAVICS provides all weather instrument flight capabilities to include terminal, radar precision approach and landing services to all Army, Joint, and allied aircraft. The MOTS is a tactical mobile tower designed to meet the deployability and communication requirements of the current to future force. TAIS develops software and required hardware for airspace management web services, to operate effectively in a dynamic net-centric interconnected environment. TAIS also integrates advanced surveillance interfaces to further enhance airspace integration and dynamic management capabilities. FBPAR is the Army's primary ground controlled precision approach capability to provide recovery operations for aircraft to fixed base airfields during adverse weather conditions. TTCS provides enhanced Air Traffic Services (ATS) communications support to aviation assets conducting reconnaissance, maneuver, medical evacuation, logistics, and intelligence operations across the battlefield. Maintenance monitoring is a remote maintenance capability for ATC systems.

Funded project improvements to ATC systems, including the TAIS and ATNAVICS, will align these programs with advanced networking, communications and interoperability goals, and provide compatibility with the Army Aviation aircraft and avionics upgrade programs including military (Global Air Traffic Management) and civil initiatives (Next Gen). In a networked battlefield, joint service systems and radars provide operational data to ATC missions assuming a communications infrastructure and data processing capability is embedded in ATC systems. ATC systems control and maintain information relevant to higher level organizations or other external systems; advanced networks and communications allow such information to be transmitted, to include aircraft positional information, weather data, landing surface conditions, airspace density, airspace control orders, restricted airspace, and flight plan data. As the Department of Defense transitions military aircraft to positional self-reporting technologies, these various technologies will be demonstrated and tested prior to integration into the ATC systems. Advanced surveillance relies on aircraft self-reporting technologies which include Automatic Dependent Surveillance Broadcast (ADS-B), Mode 5 and Mode S. Initial testing and integration of these systems are foundational to Advanced Surveillance to increase ATC systems availability to detect, manage, and disseminate aircraft information. ATNAVICS will network its advanced surveillance data (Mode 5 and Mode S) to aviation and joint network nodes. TAIS, the Airspace Management System of the Army Battle Command System (ABCS), requires the development and testing of web-based services for Airspace Command and Control (AC2) and ATS, and integration of these

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604633A: *AIR TRAFFIC CONTROL*

new web-based services into a common Army Battle Command hardware, ATS and Airspace Integration Improvement Initiatives (AI3) through advanced surveillance interfaces, mission planning interfaces, and providing TAIS dynamic airspace updates to the cockpit. TAIS RDTE also includes separate TAIS P3I efforts in FY12/13, FY 15 and FY 17. TAIS P3I include developing and testing improvements to the air picture adding unmanned aircraft positions cooperative self-reporting aircraft . To facilitate increased maintenance and system support, a remote maintenance capability will be developed for robust maintenance and troubleshooting. FBPAR includes upgrading computer capability. TTCS P3I includes enhanced survivability and capability for situational awareness through Force XXI Battle Command, Brigade-and-Below (FBCB2) and interoperability with TAIS.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	7.538	9.892	12.001	-	12.001
Current President's Budget	8.453	9.892	22.922	-	22.922
Total Adjustments	0.915	-	10.921	-	10.921
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	1.139	-			
• SBIR/STTR Transfer	-0.225	-			
• Adjustments to Budget Years	-	-	10.921	-	10.921
• Other Adjustments 1	0.001	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604633A: *AIR TRAFFIC CONTROL*	PROJECT 586: *AIR TRAFFIC CONTROL*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
586: *AIR TRAFFIC CONTROL*	8.453	9.892	22.922	-	22.922	10.023	10.254	6.835	6.915	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project funds continuous efforts in the development of modernized tactical and fixed base Air Traffic Control (ATC) systems that will enable safety of aircraft landings in both the tactical and strategic ATC domains. ATC systems are required to achieve or maintain compliance with civil, military, domestic and international air traffic control and combat identification requirements and mandates. Funding will be utilized to develop, evaluate and integrate candidate technology mandates. Funded in this program element is the development of the Tactical Airspace Integration System (TAIS) Web Based Architecture and Airspace Improvements Initiative, Advanced Surveillance, Air Traffic Navigation Integration and Coordination System (ATNAVICS) modernization, Mobile Tower System (MOTS), Tactical Terminal Control System (TTCS) Pre-Planned Product Improvements (P3I), Fixed Base Precision Approach Radar (FBPAR) P3I, and maintenance monitoring. ATNAVICS provides all weather instrument flight capabilities to include enroute, terminal, radar precision approach and landing services to all Army, Joint, and allied aircraft. The MOTS is a tactical mobile tower designed to meet the deployability and communication requirements of the current to future force. TAIS develops software and required hardware for airspace management web services, to operate effectively in a dynamic net-centric interconnected environment. TAIS also integrates advanced surveillance interfaces to further enhance airspace integration and dynamic management capabilities. FBPAR is the Army's primary ground controlled precision approach capability to provide recovery operations for aircraft to fixed base airfields during adverse weather conditions. TTCS provides enhanced Air Traffic Services (ATS) communications support to aviation assets conducting reconnaissance, maneuver, medical evacuation, logistics, and intelligence operations across the battlefield. Maintenance monitoring is a remote maintenance capability for ATC systems.

Funded project improvements to ATC systems, including the TAIS and ATNAVICS, will align these programs with advanced networking, communications and interoperability goals, and provide compatibility with the Army Aviation aircraft and avionics upgrade programs including military (Global Air Traffic Management) and civil initiatives (Next Gen). In a networked battlefield, joint service systems and radars provide operational data to ATC missions assuming a communications infrastructure and data processing capability is embedded in ATC systems. ATC systems control and maintain information relevant to higher level organizations or other external systems; advanced networks and communications allow such information to be transmitted, to include aircraft positional information, weather data, landing surface conditions, airspace density, airspace control orders, restricted airspace, and flight plan data. As the Department of Defense transitions military aircraft to positional self-reporting technologies. These various technologies will be demonstrated and tested prior to integration into the ATC systems. Advanced surveillance relies on aircraft self-reporting technologies which include Automatic Dependent Surveillance Broadcast (ADS-B), Mode 5 and Mode S. Initial testing and integration of these systems are foundational to Advanced Surveillance to increase ATC systems availability to detect, manage, and disseminate aircraft information. ATNAVICS will network its advanced surveillance data (Mode 5 and Mode S) to aviation and joint network nodes. TAIS, the Airspace Management System of the Army Battle Command System (ABCS), requires the development and testing of web-based services for Airspace Command and Control (AC2) and ATS, and integration of these new web-based services into a common Army Battle Command hardware, ATS and Airspace Integration Improvement Initiatives (AI3) through advanced surveillance interfaces, mission planning interfaces, and providing TAIS dynamic airspace updates to the cockpit. TAIS RDTE also includes separate TAIS P3I efforts in FY12/13, FY 15 and FY 17. TAIS P3I include, but are not limited to, developing and testing improvements to the air picture adding unmanned aircraft positions cooperative self-reporting aircraft . To facilitate increased maintenance and system support, a remote maintenance capability will be developed for robust maintenance and

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604633A: *AIR TRAFFIC CONTROL*	PROJECT 586: *AIR TRAFFIC CONTROL*

troubleshooting. FBPAR includes upgrading computer capability. TTCS P3I includes enhanced survivability and capability for situational awareness through Force XXI Battle Command, Brigade-and-Below (FBCB2) and interoperability with TAIS.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Mobile Tower System (MOTS) System Development, Demonstration & Testing	3.388	-	-
Articles:	0		
Description: The MOTS is a tactical mobile tower designed to meet the deployability and communication requirements of the current to future force. ***FY 2010 Accomplishments:*** Completes developmental testing to include transportability and handling testing, environmental, operational and storage testing, high altitude electromagnetic pulse testing, and system communications performance testing.			
Title: Tactical Airspace Integration System (TAIS) Native New Web Services Dev (AVN BOS)	3.409	5.000	4.127
Articles:	0	0	
Description: TAIS develops software and required hardware for airspace management web services to operate effectively in a dynamic net-centric interconnected environment. TAIS also integrates advanced surveillance interfaces to further enhance a dynamic airspace management capability. ***FY 2010 Accomplishments:*** Design and Develop TAIS service oriented architecture and web services in support of Airspace Command and Control (AC2) and Airspace Information Center (AIC) missions. These services will support airspace deconfliction and flight information and advisories. ***FY 2011 Plans:*** Design and Develop TAIS service oriented architecture and web services in support of Airspace Command and Control (AC2) and Airspace Information Center (AIC) missions. Continue development of airspace deconflict and flight information/advisory capabilities. Develop improved situational awareness and rapid clearance of fires capabilities. ***FY 2012 Plans:*** Design and Develop TAIS service oriented architecture and web services in support of Airspace Command and Control (AC2) and Airspace Information Center (AIC) missions. Continue development of airspace deconflict, flight information / advisory, situational awareness, and rapid clearance of fires capabilities. Develop advanced conflict detection capabilities such as Nuclear, Biological, Chemical Radiation (NBCR) conflict detection and aircraft safe altitude service.			
Title: TAIS P3I	0.500	-	3.300
Articles:	0		

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604633A: *AIR TRAFFIC CONTROL*	PROJECT 586: *AIR TRAFFIC CONTROL*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: TAIS P3I efforts are required to develop and test improvements to the air picture adding unmanned aircraft positions. ***FY 2010 Accomplishments:*** Develop improvements to TAIS air picture and situational awareness by providing capability to share airspace graphics and alerts with aircraft and UAS ground station cockpits. Conduct spiral development activities with coalition partners to provide interoperability of TAIS with NATO/coalition Battle Command systems to rapidly clear airspace. ***FY 2012 Plans:*** Develop improvements to TAIS air picture by adding the capability to view Blue Force Tracker-Aviation (BFT-A) air tracks that are integrated into the TAIS display. Continue development of situational awareness to the cockpit capabilities. Continue spiral development activities with coalition partners to enhance TAIS capability to deconflict airspace in a NATO/coalition environment.			
Title: Air Traffic Navigation Integration and Coordination System (ATNAVICS) Modernization ***Articles:*** ***Description:*** ATNAVICS is a highly mobile tactical area surveillance and precision approach air traffic control system. It provides the Joint Force Commander (JFC), or Combatant Commander (CCDR), with a mobile, self-contained, and reliable Airport Surveillance Radar (ASR), Precision Approach Radar (PAR), and a Secondary Surveillance Radar (SSR) capability. ***FY 2011 Plans:*** Begin Future Battle Command, Brigade and Below (FBCB2)/Blue Force Tracker integration ***FY 2012 Plans:*** Begin integration of the TPX-57 transponder permitting international standard Mode 5 and Mode S compatibility of the ATNAVICS system	-	0.200 0	13.000
Title: Advanced Surveillance ***Articles:*** ***Description:*** Advanced Surveillance technologies integration supports the non-recurring engineering, integration and test tasks required to incorporate the passive reception of self reporting technologies into Air Traffic Control programs. These Advanced Surveillance technologies include Advanced Dependent Surveillance-Broadcast (ADSB) as well as Mode 5 Level 2, Mode S and similar self reporting technologies. ***FY 2011 Plans:***	-	1.393 0	1.344

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604633A: *AIR TRAFFIC CONTROL*	PROJECT 586: *AIR TRAFFIC CONTROL*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Supports the integration of passive reception devices into a single engineering and development asset; the development of engineering release software to utilize these technologies; and then the test of these integrated technologies in a live fly field experiment. The associated documentation, analysis and integration data developed here will accelerate the technology maturization process and can then be directly leveraged to support future block upgrade activities. ***FY 2012 Plans:*** Supports continuing non-recurring engineering, integration and test tasks required to incorporate the passive reception of self reporting technologies in PM ATC programs of record. These Advanced Surveillance technologies include ADSB as well as Mode 5 Level 2, Mode S and similar self reporting technologies. Supports the continued software development to utilize these technologies; and then the test of these integrated technologies in a live fly field experiment. The associated documentation, analysis and integration data developed here will accelerate the technology maturization process and can then be directly leveraged to support future block upgrade activities.			
Title: TAIS Battle Command (BC) Collapse ***Articles:*** ***Description:*** TAIS BC Collapse efforts are required to develop conflict detection services and BC Thin Client collaboration web services that interface with the BC Collapse environment. ***FY 2011 Plans:*** Develop second phase of the Dynamic Airspace Collaboration Tool (DACT) to operate on the BC Thin Client. Develop airspace control means and conflict detection services on the BC Central Repository.	-	2.039 0	-
Title: Tactical Terminal Control System (TTCS) ***Articles:*** ***Description:*** TTCS provides enhanced Air Traffic Services communications support to aviation assets conducting reconnaissance, maneuver, medical evacuation, logistics, and intelligence operations across the battlefield. ***FY 2011 Plans:*** Complete closeout of the Up-Armor Non-Recurring Engineering (NRE) efforts. Perform Analysis of Alternatives (AoA)/Trade Study to determine how best to meet the DA survivability requirement for the future TTCS NRE effort. ***FY 2012 Plans:*** Provide TTCS technical support in refining system requirements and creating request for proposal. Perform proposal reviews and technical evaluations. Also, provide support for the competition process, negotiations, and award of contract.	-	0.472 0	0.209
Title: Tech and Log Support	0.826	0.678	0.829

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604633A: *AIR TRAFFIC CONTROL*	PROJECT 586: *AIR TRAFFIC CONTROL*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Articles:	0	0	
Description: Technical and logistics services in support of PM ATC. ***FY 2010 Accomplishments:*** Continue technical and logistic services in support of PM ATC. ***FY 2011 Plans:*** Continue technical and logistic services in support of PM ATC. ***FY 2012 Plans:*** Continue technical and logistic services in support of PM ATC.			
Title: Program Management Support	0.105	0.110	0.113
Articles:	0	0	
Description: Program Management Support of PM ATC. ***FY 2010 Accomplishments:*** Continue program management in support of PM ATC. ***FY 2011 Plans:*** Continue program management in support of PM ATC. ***FY 2012 Plans:*** Continue program management in support of PM ATC.			
Title: Small Business Innovative Research/ Small Business Technology Transfer Programs (SBIR/STRR)	0.225	-	-
Articles:	0		
Description: SBIR/STRR ***FY 2010 Accomplishments:*** SBIR/STRR			
Accomplishments/Planned Programs Subtotals	8.453	9.892	22.922

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604633A: *AIR TRAFFIC CONTROL*	PROJECT 586: *AIR TRAFFIC CONTROL*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• AA0050: *Air Traffic Control*	86.762	90.399	114.844		114.844		83.306	83.176	83.675	Continuing	Continuing

D. Acquisition Strategy

PM ATC will continue to embrace applicable new technology initiatives for the development of tactical and fixed base ATC equipment and the integration of new technology into existing systems. ATC systems are required to achieve or maintain compliance with civil, military, domestic and international air traffic control and upcoming Next Gen requirements and mandates. Funding will be utilized to develop, evaluate, and integrate required key technology and capability upgrades. Technology insertion will be acquired through contract modifications, engineering services tasks, and new/follow-on contracts.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604633A: *AIR TRAFFIC CONTROL*	PROJECT 586: *AIR TRAFFIC CONTROL*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	PM ATC:Redstone Arsenal, AL	2.122	0.110		0.113		-		0.113	Continuing	Continuing	Continuing
SBIR/STTR	TBD	TBD:TBD	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	2.122	0.110		0.113		-		0.113			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MOTS System Development and Demo	C/CPFF	Sierra Nevada Corp:Sierra, NV	28.951	-		-		-		-	Continuing	Continuing	0.000
MOTS Systems Development Support	Various	AMCOM and ATEC:Various	0.891	-		-		-		-	Continuing	Continuing	0.000
MOTS Contracted Services	C/CPFF	AMCOM:Huntsville, AL	0.930	-		-		-		-	Continuing	Continuing	0.000
ATNAVICS Modernization	SS/CPFF	Raytheon:Marlboro, Mass	-	0.200		13.000		-		13.000	Continuing	Continuing	Continuing
Advanced Surveillance	Various	Various:Various	-	1.393		1.344		-		1.344	Continuing	Continuing	Continuing
TAIS P3I	SS/CPFF	General Dynamics C4S:Huntsville, AL	0.691	-		3.300		-		3.300	Continuing	Continuing	Continuing
Tactical Terminal Control System (TTCS)	Various	Various:Various	-	0.472		0.209		-		0.209	Continuing	Continuing	Continuing
TAIS Battle Command Collapse	SS/CPFF	General Dynamics C4S:Huntsville, AL	-	2.039		-		-		-	Continuing	Continuing	Continuing
Tech and Log Development Support	Various	PM ATC:Huntsville, AL	2.376	0.678		0.829		-		0.829	Continuing	Continuing	Continuing
TAIS Native New Web Services Dev (AVN BOS) (Formerly BC Migration)	SS/CPFF	General Dynamics C4S:Huntsville, AL	5.224	5.000		4.127		-		4.127	Continuing	Continuing	Continuing
		Subtotal	39.063	9.782		22.809		-		22.809			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604633A: *AIR TRAFFIC CONTROL*	PROJECT 586: *AIR TRAFFIC CONTROL*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MOTS Prototype Testing	Various	Various:Various	3.709	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	3.709	-		-		-		-			0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	44.894	9.892		22.922		-		22.922			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604633A: *AIR TRAFFIC CONTROL*	PROJECT 586: *AIR TRAFFIC CONTROL*

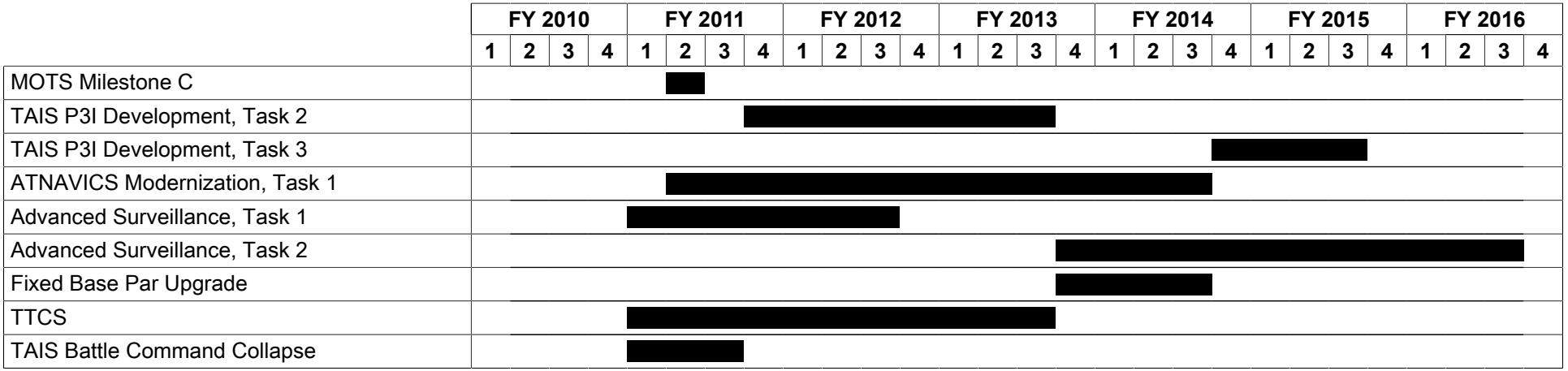

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604633A: *AIR TRAFFIC CONTROL*	**PROJECT** 586: *AIR TRAFFIC CONTROL*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MOTS Milestone C	2	2011	2	2011
TAIS P3I Development, Task 2	4	2011	3	2013
TAIS P3I Development, Task 3	4	2014	3	2015
ATNAVICS Modernization, Task 1	2	2011	3	2014
Advanced Surveillance, Task 1	1	2011	3	2012
Advanced Surveillance, Task 2	4	2013	3	2016
Fixed Base Par Upgrade	4	2013	3	2014
TTCS	1	2011	3	2013
TAIS Battle Command Collapse	1	2011	3	2011

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604642A: *LIGHT TACTICAL WHEELED VEHICLES*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	1.140	1.990	-	-	-	-	-	-	-	0.000	3.130
E40: *LTV Prototype*	1.140	1.990	-	-	-	-	-	-	-	0.000	3.130

Note

FY 2012 funds support the HMMWV Ambulance program.

A. Mission Description and Budget Item Justification

The High Mobility Multipurpose Wheeled Vehicle (HMMWV) is a lightweight, high performance, four-wheel drive, air transportable and air droppable, high mobility tactical wheeled vehicle. The HMMWV consists of a basic design with several variants including Cargo/Utility, Armament Carrier, Ambulance, Shelter Carrier and Armored Armament Carrier. RDT&E efforts support the integration and assessment of crew protection and safety improvements to the Light Tactical Vehicles (LTV). FY11 funding supports improvements to the HMMWV family of vehicles through the development of an ambulance variant on the Expanded Capacity Vehicle (ECV) chassis. Utilizing current production chassis for the ambulance variant incorporates engine technologies and maintainability improvements, which will result in decreased operational support costs. The FY10 Congressional Add funds fire support systems. Vehicle fires continue to be a significant cause for the number of crew casualties and equipment damage. The Congressional Funding for Fire Suppression systems will allow us to evaluate water-based extinguishing agents and delivery hardware for their ability to suppress external and internal vehicle fires as well as address aviation applications. The cooling effect, re-ignition prevention, environmental safety, and toxicity of the agents will be assessed. A novel tank fuel design will also be tested for its fire resistance against ballistic threats. Results of this program will form the basis of recommendations to Soldiers and Vehicle Program Managers for improved fire protection.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	1.990	-	-	-
Current President's Budget	1.140	1.990	-	-	-
Total Adjustments	1.140	-	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	1.140	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604642A: *LIGHT TACTICAL WHEELED VEHICLES*	PROJECT E40: *LTV Prototype*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
E40: *LTV Prototype*	1.140	1.990	-	-	-	-	-	-	-	0.000	3.130
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The High Mobility Multipurpose Wheeled Vehicle (HMMWV) is a lightweight, high performance, four-wheel drive, air transportable and air droppable, high mobility tactical wheeled vehicle. The HMMWV consists of a basic design with several variants including Cargo/Utility, Armament Carrier, Ambulance, Shelter Carrier and Armored Armament Carrier. RDT&E efforts support the integration and assessment of crew protection and safety improvements to the Light Tactical Vehicle (LTV). FY 2011 funding supports improvements to the HMMWV family of vehicles through the development of an ambulance variant on the Expanded Capacity Vehicle (ECV) chassis. Utilizing current production chassis for the ambulance variant incorporates engine technologies and maintainability improvements, which will result in decreased operational support costs. The FY10 Congressional Add funds fire suppression systems. Vehicle fires continue to be a significant cause for the number of crew casualties and equipment damage. The Congressional Funding for Fire Suppression systems will allow us to evaluate water-based extinguishing agents and delivery hardware for their ability to suppress external and internal vehicle fires as well as address aviation applications. The cooling effect, re-ignition prevention, environmental safety, and toxicity of the agents will be assessed. A novel tank fuel design will also be tested for its fire resistance against ballistic threats. Results of this program will form the basis of recommendations to Soldiers and Vehicle Program Managers for improved fire protection.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Program Management ***Articles:*** ***Description:*** In house Support. ***FY 2010 Accomplishments:*** Engineering Salaries	0.166 0	-	-
Title: Fire Suppression Testing ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Testing at ATC, ARL, AFRL, Public Health Command	0.678 0	-	-
Title: Hardware and Test Support ***Articles:*** ***Description:*** Funding is provided for the following effort.	0.296 0	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604642A: *LIGHT TACTICAL WHEELED VEHICLES*	PROJECT E40: *LTV Prototype*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Arctic Fire-Freeze Fire Extinguishing agent/equipment			
Title: XM997A3 HMMWV Ambulance Platform Development and Testing	-	1.990	-
Articles:		0	
Description: Funding is provided for the following effort			
FY 2011 Plans: XM997A3 HMMWV Ambulance Platform Development and Testing			
Accomplishments/Planned Programs Subtotals	1.140	1.990	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 4: *OPA1 HI MOB MULTIPURP WHLD VEH (HMMWV)*	1,317.566									0.000	1,317.566

D. Acquisition Strategy

The HMMWV Ambulance strategy involves the integration of the M997A2 ambulance box on an Expanded Capacity Vehicle (ECV) chassis. The new vehicle platform is anticipated to be classified as XM997A3. Integration of the two full materiel release systems is anticipated to allow the XM997A3 to enter the acquisition system post-milestone B. FY 2011 Core RDT&E will be used to fund the developmental testing portion of the XM997A3 program. Developmental testing will occur in a relevant environment at Government and contractor test facilities. The main goals of the developmental testing for this program are: 1.) to ensure that the modified air conditioning configuration on the XM997A3 will meet or exceed the air conditioning requirements of the current ECV platforms; 2.) to ensure that the air conditioning configuration on the XM997A3 will not degrade vehicle powertrain and driveline performance; and 3.) to ensure structural integrity of the integration of the legacy ambulance box on the ECV chassis. This will ensure that the XM997A3 platform will be ready for operational testing to properly support needs of the Army medical community.

Fire Suppression Systems Strategy will: 1) develop technical requirements and test parameters for water-based extinguishing agents; 2) identify potential agents and procure test materials; 3) Coordinate with Program Managers and other government agencies to define operational and integration impacts. 4) Conduct comparison testing against military ground vehicle and aircraft fire threats; 5) Provide recommendations to insure field units are aware of most effective extinguishing solutions and proper firefighting techniques.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604642A: *LIGHT TACTICAL WHEELED VEHICLES*	PROJECT E40: *LTV Prototype*

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604642A: *LIGHT TACTICAL WHEELED VEHICLES*	PROJECT E40: *LTV Prototype*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FY 2010 Congressional Add funds Program Management	MIPR	TARDEC:Warren, MI	0.166	-		-		-		-	Continuing	Continuing	0.000
FY 2011 Core funding supports XM997A3 Ambulance Platform Development/Testing	Various	AM General:Mishawaka, IN	-	0.390		-		-		-	Continuing	Continuing	Continuing
		Subtotal	0.166	0.390		-		-		-			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FY 2010 Congressional Add funds Portable and Fixed Extinguishing Systems Testing	MIPR	Aberdeen Test Center:Aberdeen Proving Ground, MD	0.378	-		-		-		-	0.000	0.378	0.000
FY 2010 Congressional Add funds Fuel Tank Design Fire Vulnerability Testing	MIPR	Army Research Laboratory:Aberdeen Proving Ground, MD	0.175	-		-		-		-	0.000	0.175	0.000
FY 2010 Congressional Add funds Multiple Aqueous Extinguishing Agent Toxicity Assessment Testing	MIPR	Public Health Command:Aberdeen Proving Ground, MD	0.025	-		-		-		-	0.000	0.025	0.000
FY 2010 Congressional Add funds Fire Suppression Testing	C/CPFF	Air Force Research Laboratory:Tyndall Air Force Base	0.051	-		-		-		-	0.000	0.051	0.000
FY 2010 Congressional Add funds Fire Suppression Testing	MIPR	Air Force Research Laboratory:Tyndall Air Force Base, FL	0.049	-		-		-		-	0.000	0.049	0.000
FY 2010 Congressional Add funds Arctic Fire-Freeze Fire Extinguishing Agent/ Equipment	SS/FFP	Global Safety Labs, Inc.:Tulsa, OK	0.296	-		-		-		-	0.000	0.296	0.000
	MIPR		-	1.600		-		-		-	0.000	1.600	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604642A: *LIGHT TACTICAL WHEELED VEHICLES*	PROJECT E40: *LTV Prototype*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FY 2011 Core Funding Supports XM997A3 Structural/ Endurance Testing		Aberdeen Test Center:Aberdeen Proving Ground, MD											
		Subtotal	0.974	1.600		-		-		-	0.000	2.574	

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.140	1.990		-		-		-			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604642A: *LIGHT TACTICAL WHEELED VEHICLES*	PROJECT E40: *LTV Prototype*

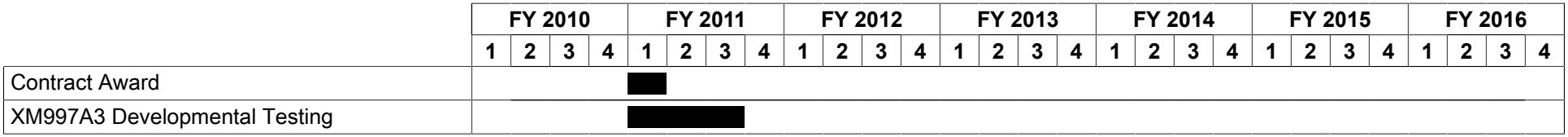

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604642A: *LIGHT TACTICAL WHEELED VEHICLES*	**PROJECT** E40: *LTV Prototype*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Contract Award	1	2011	1	2011
XM997A3 Developmental Testing	1	2011	3	2011

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604646A: *Non-Line of Sight Launch System*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	88.205	81.247	-	-	-	-	-	-	-	0.000	169.452
F72: *BCT NON-LINE OF SIGHT LAUNCH SYSTEM*	88.205	81.247	-	-	-	-	-	-	-	0.000	169.452

Note

NLOS-LS Program was terminated.
The FY 2010 Total Adjustments of $-3018 is for SBIR/STTR Transfer.

A. Mission Description and Budget Item Justification

The Non-Line of Sight Launch System (NLOS-LS) program was terminated in March 2010. The Navy will continue the development of the system as per the January 2006, Memorandum of Agreement for its small boat threat on its Littoral Combat Ships.

Prior to termination, this project funded the System Development and Demonstration (SDD) for the Non-Line of Sight Launch System (NLOS-LS), which is part of the Brigade Combat Team (BCT) modernization program. NLOS-LS has been developed to deliver its "enabling lethality" capabilities to the Infantry Brigade Combat Teams (IBCTs). NLOS-LS consists of the Precision Attack Missile (PAM) and a highly deployable, platform-independent Container Launch Unit (CLU) with self-contained technical fire control, electronics, communications and software for remote unmanned operations.

This project focuses on the development of a materiel solution to meet the NLOS-LS operational need as delineated in the Future Combat System (FCS) Operational Requirements Document (ORD) and Increment 1 Early-Infantry Brigade Combat Team (E-IBCT) Capabilities Production Document (CPD). The PAM will be vertically launched directly from the CLU based on fire missions received via the BCT network and will be capable of being updated in-flight via on-board radios by the network. The vertical launch capability permits a system that is highly deployable as well as being able to engage a wide spectrum of targets in diverse environments and terrain. The PAM will have Automatic Target Acquisition (ATA) capability which can be upgraded in future versions.

NLOS-LS, delivered during the Increment 1 timeframe, will equip Current Forces with an Advanced Field Artillery Tactical Data System (AFATDS) command based unmanned precision attack missile system. Increment 2 will address objective requirements to meet the Capability Development Document (CDD). These efforts will include Insensitive Munition requirements, incorporation of the Handheld, Manpack and Small Form Fits (HMS)-J, Ground Mobile Radio (GMR) radios into the system, integration of the Blue Force Tracker into the control cell, Data Storage Device (DSD) modifications to alleviate NSA concerns, and Integrated Computing System (ICS) updates. Additional threshold requirements planned for BCT modernization program include interoperability with Battle Command, Level 5 Interactive Electronic Technical Manual System, In-Flight Target Updates the ability to disenable in flight, 72 hour on-board power, functioning Platform Soldier Mission Readiness System/ Logistics Decision Support System.

The NLOS-LS program was terminated March 2010. The current Army contract is being terminated and all hardware/property is being transferred to ARDEC and Navy. Due to program termination, the FY 11 Budget Request for NLOS LS is no longer required.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army					DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*		R-1 ITEM NOMENCLATURE PE 0604646A: *Non-Line of Sight Launch System*			
B. Program Change Summary ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**
Previous President's Budget	91.223	81.247	58.718	-	58.718
Current President's Budget	88.205	81.247	-	-	-
Total Adjustments	-3.018	-	-58.718	-	-58.718
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-3.018	-	-58.718	-	-58.718

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604646A: *Non-Line of Sight Launch System*	PROJECT F72: *BCT NON-LINE OF SIGHT LAUNCH SYSTEM*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
F72: *BCT NON-LINE OF SIGHT LAUNCH SYSTEM*	88.205	81.247	-	-	-	-	-	-	-	0.000	169.452
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The Non-Line of Sight Launch System (NLOS-LS) program was terminated in March 2010. The Navy will continue the development of the system as per the January 2006, Memorandum of Agreement for its small boat threat on its Littoral Combat Ships.

Prior to termination, this project funded the System Development and Demonstration (SDD) for the Non-Line of Sight Launch System (NLOS-LS), which is part of the Brigade Combat Team (BCT) modernization program. NLOS-LS has been developed to deliver its "enabling lethality" capabilities to the Infantry Brigade Combat Teams (IBCTs). NLOS-LS consists of the Precision Attack Missile (PAM) and a highly deployable, platform-independent Container Launch Unit (CLU) with self-contained technical fire control, electronics, communications and software for remote unmanned operations.

This project focuses on the development of a materiel solution to meet the NLOS-LS operational need as delineated in the Future Combat System (FCS) Operational Requirements Document (ORD) and Increment 1 Early-Infantry Brigade Combat Team (E-IBCT) Capabilities Production Document (CPD). The PAM will be vertically launched directly from the CLU based on fire missions received via the BCT network and will be capable of being updated in-flight via on-board radios by the network. The vertical launch capability permits a system that is highly deployable as well as being able to engage a wide spectrum of targets in diverse environments and terrain. The PAM will have Automatic Target Acquisition (ATA) capability which can be upgraded in future versions.

NLOS-LS, delivered during the Increment 1 timeframe, will equip Current Forces with an Advanced Field Artillery Tactical Data System (AFATDS) command based unmanned precision attack missile system. Increment 2 will address objective requirements to meet the Capability Development Document (CDD). These efforts will include Insensitive Munition requirements, incorporation of the Handheld, Manpack and Small Form Fits (HMS)-J, Ground Mobile Radio (GMR) radios into the system, integration of the Blue Force Tracker into the control cell, Data Storage Device (DSD) modifications to alleviate NSA concerns, and Integrated Computing System (ICS) updates. Additional threshold requirements planned for BCT modernization program include interoperability with Battle Command, Level 5 Interactive Electronic Technical Manual System, In-Flight Target Updates the ability to disenable in flight, 72 hour on-board power, functioning Platform Soldier Mission Readiness System/ Logistics Decision Support System.

The NLOS-LS program was terminated March 2010. The current Army contract is being terminated and all hardware/property is being transferred to ARDEC and Navy. Due to program termination, the FY 11 Budget Request for NLOS LS is no longer required.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604646A: *Non-Line of Sight Launch System*	PROJECT F72: *BCT NON-LINE OF SIGHT LAUNCH SYSTEM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Systems Engineering, Prototypes, Test, and Program Management ***Articles:*** ***Description:*** Funding was provided for the following effort ***FY 2010 Accomplishments:*** Prepared for, participated in, and conducted 6 flight tests during PEO I's Limited User Test (LUT) in support of a MS C decision in March FY10. Conducted a detailed and formal Failure Review Board (FRB) to analyze the results of the 6 flight tests. Developed and conducted MSC review efforts. The program was terminated in March FY11. Began termination and material disposition activities.	64.618 0	-	-
Title: Contractor Termination Costs ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** (Special) These costs are paid to the contractor and subcontractors as per FAR 31.205 for; Severance Pay, Reasonable costs continuing after termination, Settlement of expenses, and the costs to return field service personnel from remote or liaison sites. (Other) These funds are for costs that are currently not covered by the Government contract and are required by FAR part 31. These costs include but are not limited to Allowable Fee, Cost incurred, but not billed to the FAR contract, Non-cancelable commitments, Unexpired leases, Alterations/restorations required by leases, and Loss of useful value of capital property. These costs began accumulating as of March FY10. In addition to the FAR termination costs this element includes Disposition of Terminated Material to the Navy and ARDEC. These funds also include all cost for packaging, transporting, and short and long term storage of selected materials IAW FAR 45/49. Over 9,500 individual end items and 2 control System Integration Laboratories (SILs) required disposition. These items are displaced among 12 contractors and or government agencies throughout the United States. All Secure equipment was dispositioned IAW NSA requirements. Unobligated funding are still required for final negotiation of the termination proposal. By holding these funds from the contractor it provides greater leverage for contract negotiations.	23.587 0	-	-
Title: Program Termination ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2011 Plans:*** As a result of the program termination these funds are no longer required.	-	81.247 0	-
Accomplishments/Planned Programs Subtotals	88.205	81.247	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604646A: *Non-Line of Sight Launch System*	**PROJECT** F72: *BCT NON-LINE OF SIGHT LAUNCH SYSTEM*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 0604660A: *FCS Manned Ground Vehicles & Common Grd Vehicle Components*	231.103									0.000	231.103
• 0604661A: *FCS System of Systems Engr & Program Management*	847.011	568.711	383.872		383.872		518.188	648.502	352.069	0.000	3,808.398
• 0604662A: *FCS Reconnaissance (UAV) Platforms*	92.444	50.304								0.000	142.748
• 0604663A: *FCS Unmanned Ground Vehicles*	122.418	249.948	143.840		143.840		106.480	131.880	32.009	0.000	911.047
• 0604664A: *FCS Unattended Ground Sensors*	39.664	7.515	0.499		0.499					0.000	47.678
• 0604665A: *FCS Sustainment & Training R&D*	685.524	610.389					251.761	254.232	181.558	0.000	2,187.185
• WTCV G86200: *FCS Spin Out Program*	210.909									0.000	210.909
• ACFT A00015: *BCT Unmanned Aerial Veh (UAVs) Incr 1*		44.206								0.000	44.206
• OPA B00001: *BCT Unattended Ground Sensor*		29.718								0.000	29.718
• OPA B00002: *PABCT Network*		176.543								0.000	187.068
• OPA B00003: *BCT Network CP 13/14*							229.528	187.955	179.653	0.000	768.167
• OPA F00001: *BCT Unmanned Ground Vehicle*		20.046	24.805		24.805					0.000	48.096
• OPA F00002: *BCT Unmanned Ground Vehicle CP 13/14*			11.924		11.924		422.192	834.171	696.603	0.000	2,414.904
• OPA G80001: *BCT Training/ Logistics/Management*		61.581	149.308		149.308		49.792	28.259		0.000	435.142
			57.103		57.103		441.250	347.466	273.354	0.000	1,308.265

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604646A: *Non-Line of Sight Launch System*	PROJECT F72: *BCT NON-LINE OF SIGHT LAUNCH SYSTEM*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPA G00002: *BCT Training/ Logistics/Management CP 13/14*											

D. Acquisition Strategy

The Army awarded the NLOS-LS SDD contract on 19 March 2004 to Netfires Limited Liability Company (LLC), consisting of Lockheed Martin Corporation, doing business through its Missiles and Fire control and operating entity in Grand Prairie, TX; and the Raytheon Corporation, doing business through its Missile Systems Business Unit in Tuscon, AZ. The NLOS-LS SDD contract was definitized 20 August 2004. The NLOS-LS program was terminated March 2010. The current Army contract is being terminated and all hardware/property is being transferred to ARDEC and Navy.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-5, RDT&E Termination Liability: PB 2012 Army							DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*			R-1 ITEM NOMENCLATURE PE 0604646A: *Non-Line of Sight Launch System*			PROJECT F72: *BCT NON-LINE OF SIGHT LAUNCH SYSTEM*	
Cost ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**
Program Termination Liability	88.205	81.247	-	-	-	-	-

Notes

The Army awarded the NLOS-LS SDD contract on 19 March 2004 to Netfires Limited Liability Company (LLC), consisting of Lockheed Martin Corporation, doing business through its Missiles and Fire control and operating entity in Grand Prairie, TX; and the Raytheon Corporation, doing business through its Missile Systems Business Unit in Tuscon, AZ. The NLOS-LS SDD contract was definitized 20 August 2004. The NLOS-LS program was terminated March 2010. The current Army contract is being terminated and all hardware/property is being transferred to ARDEC and Navy.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604660A: *FCS Manned Grd Vehicles & Common Grd Vehicle*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	231.103	-	-	-	-	-	-	-	-	0.000	231.103
FC1: *FCS MANNED GRD VEHICLES & COMMON GRD VEHICLE*	231.103	-	-	-	-	-	-	-	-	0.000	231.103

Note

FY10: MGV Program was terminated and HQDA has withheld $180M for higher priority requirements.

A. Mission Description and Budget Item Justification

The Future Combat Systems (FCS) Manned Ground Vehicles (MGV) Core Program of Record was terminated in July 2009. FY09 effort prior to termination included completion of design activities leading up to and including MGV SoS PDRs. Associated activities with building Automotive Test Rigs and firing platforms to demonstrate and conduct initial proof of principle on common engine and transmission components long with gun and auto-loading principles. Stop Work contractual direction was issued on June 24th 2009 and was followed by the termination letter on July 17, 2009. The termination letter directed Boeing and its One Team Partners to stop work on all MGV activities except for those items related to the Active Protection System (APS), portions of the Hit Avoidance Systems (HAS), and Non-Line of Sight-Cannon (NLOS-C). The NLOS-C activity was terminated on xxx based on ADM YYY. The funding for FY10 will cover other and special termination cost, the cost for dispositioning all program materials, to include hardware and software, and the cost of completing the development of the APS to achieve TRL 7 in case one or multiple GCV elect to use this technology. For FY09 and prior, this program element supported the development of Manned Ground Vehicles (MGVs) (exclusive of the NLOS-C specific mission equipment). The following common MGV subsystem developments are also included, (NLOS-C common subsystems): armor, suspension, structures, defensive armament system, signature management, Nuclear, Biological, and Chemical, Vetronics, power and energy (includes hybrid electric drive), auxiliary systems, and hit avoidance system. Also included in this project is mission specific equipment for the following platforms: Infantry Combat Vehicle (ICV), Mounted Combat System (MCS), Non-Line of Sight Mortar (NLOS-M), Command and Control Vehicle (C2V), Reconnaissance and Surveillance Vehicle (RSV), Field Recovery and Maintenance Vehicle (FRMV), and the Medical Vehicle (MV). The APS effort continued into the 4rd Qtr FY10, at which time the decision was made not to exercise the option to continue the APS efforts through the prime contractor. With the above-mentioned termination, the Government has negotiated reduced termination costs saving $180 million of FY 09 funding.

FY11 funding represented in this document does not reflect the restructure to the program as a result of the recently signed Acquisition Decision Memorandum

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604660A: *FCS Manned Grd Vehicles & Common Grd Vehicle*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	275.116	-	-	-	-
Current President's Budget	231.103	-	-	-	-
Total Adjustments	-44.013	-	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-34.600	-			
• SBIR/STTR Transfer	-9.413	-			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604660A: *FCS Manned Grd Vehicles & Common Grd Vehicle*	PROJECT FC1: *FCS MANNED GRD VEHICLES & COMMON GRD VEHICLE*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
FC1: *FCS MANNED GRD VEHICLES & COMMON GRD VEHICLE*	231.103	-	-	-	-	-	-	-	-	0.000	231.103
Quantity of RDT&E Articles											

Note

Not applicable to this item.

A. Mission Description and Budget Item Justification

The Future Combat Systems (FCS) Manned Ground Vehicles (MGV) Core Program of Record was terminated in July 2009. FY09 effort prior to termination included completion of design activities leading up to and including MGV SoS PDRs. Associated activities with building Automotive Test Rigs and firing platforms to demonstrate and conduct initial proof of principle on common engine and transmission components long with gun and auto-loading principles. Stop Work contractual direction was issued on June 24th 2009 and was followed by the termination letter on July 17, 2009. The termination letter directed Boeing and its One Team Partners to stop work on all MGV activities except for those items related to the Active Protection System (APS), portions of the Hit Avoidance Systems (HAS), and Non-Line of Sight-Cannon (NLOS-C). The NLOS-C activity was terminated on 7 December 2009 based on ADM 23 June 2009. The funding for FY10 will cover other and special termination cost, the cost for dispositioning all program materials, to include hardware and software, and the cost of completing the development of the APS to achieve TRL 7 in case one or multiple GCV elect to use this technology. For FY09 and prior, this program element supported the development of Manned Ground Vehicles (MGVs) (exclusive of the NLOS-C specific mission equipment). The following common MGV subsystem developments are also included, (NLOS-C common subsystems): armor, suspension, structures, defensive armament system, signature management, Nuclear, Biological, and Chemical, Vetronics, power and energy (includes hybrid electric drive), auxiliary systems, and hit avoidance system. Also included in this project is mission specific equipment for the following platforms: Infantry Combat Vehicle (ICV), Mounted Combat System (MCS), Non-Line of Sight Mortar (NLOS-M), Command and Control Vehicle (C2V), Reconnaissance and Surveillance Vehicle (RSV), Field Recovery and Maintenance Vehicle (FRMV), and the Medical Vehicle (MV). The APS effort continued into the 4rd Qtr FY10, at which time the decision was made not to exercise the option to continue the APS efforts through the prime contractor. With the above-mentioned termination, the Government has negotiated reduced termination costs saving $180 million of FY 09 funding.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Government GFX Testing	2.636	-	-
Articles:	0		
Description: Funding is provided for the following effort			
FY 2010 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604660A: *FCS Manned Grd Vehicles & Common Grd Vehicle*	PROJECT FC1: *FCS MANNED GRD VEHICLES & COMMON GRD VEHICLE*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Costs are to continue the testing support to APS/HAS effort which includes; Static Warhead/Dynamic Threat Test 1st QTR, which tests the data that will be utilized by Army Materiel Systems Analysis Agency (AMSAA) and Army Research Laboratory (ARL) to refine their Modeling and Simulation (M&S) of the Short Range Counter Measure (SRCM) against different threats (10 foreign threats, to be used from inventory) 1st QTR, SRCM Design Verification Test which will verify SRCM component maturation (20 foreign threats, to be used from inventory; 20 SRCMs to be purchased) 4th QTR, SRCM Warhead (WHD) and M&S and Test.			
Title: HQDA Withheld ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** The Army has successfully negotiated $180 million dollars of savings from the termination proposal. These funds have been currently withdrawn from the program office to HQDA.	180.000 0	-	-
Title: Termination Costs ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** (Special Termination Costs) These costs are paid to the contractor and subcontractors as per FAR 31.205 for; Severance Pay, Reasonable costs continuing after termination, Settlement of expenses, and the costs to return field service personnel from remote or liaison sites. (Other Termination Costs) These funds are for costs that are currently not covered by the Government contract and are required by FAR part 31. These costs include but are not limited to Allowable Fee, Cost incurred, but not billed to the FAR contract, Non-cancelable commitments, Unexpired leases, Alterations/restorations required by leases, and Loss of useful value of capital property. These costs began accumulating as of March FY10. In addition to the FAR termination costs this element includes Disposition of Terminated Material to other Army agencies. These funds also include all cost for packaging, transporting, and short and long term storage of selected materials IAW FAR 45/49. All Secure equipment was dispositioned IAW NSA requirements.	48.467 0	-	-
Accomplishments/Planned Programs Subtotals	231.103	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604660A: *FCS Manned Grd Vehicles & Common Grd Vehicle*	PROJECT FC1: *FCS MANNED GRD VEHICLES & COMMON GRD VEHICLE*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 0604646A: *Non-Line of Sight - Launch Sytem*	88.205	81.247								0.000	169.452
• 0604661A: *FCS System of Systems Engr & Program Management*	847.011	568.711	383.872		383.872		518.188	648.502	352.069	0.000	3,808.398
• 0604662A: *FCS Reconnaissance (UAV) Platforms*	92.444	50.304								0.000	142.748
• 0604663A: *FCS Unmanned Ground Vehicles*	122.418	249.948	143.840		143.840		106.480	131.880	32.009	0.000	911.047
• 0604664A: *FCS Unattended Ground Sensors*	39.664	7.515	0.499		0.499					0.000	47.678
• 0604665A: *FCS Sustainment & Training R&D*	685.524	610.389					251.761	254.232	181.558	0.000	2,187.185
• WTCV G86200: *FCS Spin Out Program*	210.909									0.000	210.909
• ACFT A00015: *BCT Unmanned Aerial Veh (UAVs) Incr 1*		44.206								0.000	44.206
• OPA B00001: *BCT Unattended Ground Sensor*		29.718								0.000	29.718
• OPA B00002: *BCT Network*		176.543								0.000	176.543
• OPA B00003: *BCT Network Incr 2*							229.528	187.955	179.653	0.000	768.167
• OPA F00001: *BCT Unmanned Ground Vehicle*		20.046	24.805		24.805					0.000	48.096
• OPA F00002: *BCT Unmanned Ground Vehicle CP 13/14*			11.924		11.924		422.192	834.171	696.603	0.000	2,414.904
• OPA G80001: *BCT Training/ Logistics/Management*		61.581	149.308		149.308		49.792	28.259		0.000	435.142
			57.103		57.103		441.250	347.466	273.354	0.000	1,308.265

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604660A: *FCS Manned Grd Vehicles & Common Grd Vehicle*	PROJECT FC1: *FCS MANNED GRD VEHICLES & COMMON GRD VEHICLE*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPA G00002: *BCT Training/ Logistics/Management CP 13/14*											

D. Acquisition Strategy

Strategy The Army awarded the original FCS Contract to the Boeing Company, 30 May 2003 as the Lead System Integrator (LSI). The contract was definitized 10 Dec 2003. The LSI contracted BAE Systems and General Dynamic Land Systems (GDLS) as One Team Partner's to execute the MGV portion of the SDD contract. The MGV family consist of (7) vehicle platforms which was to be produced cooperatively by BAE and GDLS corporations. During FY09, FCS completed the systems of systems platform Preliminary Design Review (PDRs). In July 09 the MGV portion of the SDD contract was terminated after completion of all SoS PDR activities. The contract prototype and component assets will be dispositioned in accordance with FAR-45/29 ensuring the most cost efficient method to the government. The Active Protection System (APS) completed its development in FY10.

With the above-mentioned termination, $180 million has identified as excess and has been withdrawn from the program for higher priority Army requirements.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	847.011	568.711	383.872	-	383.872	490.045	518.188	648.502	352.069	Continuing	Continuing
FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*	847.011	568.711	383.872	-	383.872	490.045	518.188	648.502	352.069	Continuing	Continuing

Note

FY12 and FY13: Program was restructured to meet emerging requirements and the funds were used for higher priority requirements.

A. Mission Description and Budget Item Justification

This Program Element (PE) includes contractor and government scope to ensure that the Army is fielding platforms, components and software that are integrated together to provide increased capability for the soldier that are supportable and trainable. The PE includes effort associated with developing the infrastructure, architecture, and design of the Army?s integrated network. This project includes the following government effort: System of system architecture and design standards for the Army, BCT Integration, BCT simulation, BCT testing and experimentation, BCT logistics, and BCT training. This project includes support to other DOD agencies for joint programs and collaboration efforts with PEO Integration and Capability Package portfolio integration.

Beginning in FY 2010, this Program Element includes all SoS (engineering, test, logistics, training and program management) cost associated with IBCT Increment 1 and future BCT Integration, experimentation, and test. Beginning in FY11 all prime contractor fee is moved to appropriate platform funding Program Element. Beginning in FY12 platform System Engineering & Program Management is accounted for in the appropriate platform funding Program Element. The Government support costs includes funding for government personnel labor, travel, training, supplies, other support costs (support contractors, Automated Data Processing (ADP), communications, supplies, and equipment), and platform unique testing.

Immediately after the completion of SoS PDR, all remaining FCS Brigade Combat Team (BCT) effort was terminated in FY10. System Engineering efforts to support the future BCT Modernization efforts will continue through the Network CDR. After completion of the Network CDR the remaining contractor system of system engineering effort will be terminated and transferred to the government in logical cost effective manner. The government will then manage all system of system engineering requirements and efforts for the Army to ensure the most cost effective and timely management of integration activities and BCT fieldings.

Supports other services for Joint Programs, Multinational Project Arrangements, and collaborative efforts. Includes the procurement of Government Furnished Equipment/Items/Data/property (GFX). GFX is used when procurement of an item is not available to the contractor other than through the Government, or the Government can provide this service or item at lower cost.

FY11 funding represented in this document does not reflect the restructure to the program as a result of the recently signed Acquisition Decision Memorandum

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	912.399	568.711	566.378	-	566.378
Current President's Budget	847.011	568.711	383.872	-	383.872
Total Adjustments	-65.388	-	-182.506	-	-182.506
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-34.400	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-182.506	-	-182.506
• Other Adjustments 1	-30.988	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*	847.011	568.711	383.872	-	383.872	490.045	518.188	648.502	352.069	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This Program Element (PE) includes contractor and government scope to ensure that the Army is fielding platforms, components and software that are integrated together to provide increased capability for the soldier that are supportable and trainable. The PE includes effort associated with developing the infrastructure, architecture, and design of the Army?s integrated network. This project includes the following government effort: System of system architecture and design standards for the Army, BCT Integration, BCT simulation, BCT testing and experimentation, BCT logistics, and BCT training. This project includes support to other DOD agencies for joint programs and collaboration efforts with PEO Integration and Capability Package portfolio integration.

Beginning in FY 2010, this Program Element includes all SoS (engineering, test, logistics, training and program management) cost associated with IBCT Increment 1 and future BCT Integration, experimentation, and test. Beginning in FY11 all prime contractor fee is moved to appropriate platform funding Program Element. Beginning in FY12 platform System Engineering & Program Management is accounted for in the appropriate platform funding Program Element. The Government support costs includes funding for government personnel labor, travel, training, supplies, other support costs (support contractors, Automated Data Processing (ADP), communications, supplies, and equipment), and platform unique testing.

Immediately after the completion of SoS PDR, all remaining FCS Brigade Combat Team (BCT) effort was terminated in FY10. System Engineering efforts to support the future BCT Modernization efforts will continue through the Network CDR. After completion of the Network CDR the remaining contractor system of system engineering effort will be terminated and transferred to the government in logical cost effective manner. The government will then manage all system of system engineering requirements and efforts for the Army to ensure the most cost effective and timely management of integration activities and BCT fieldings.

Supports other services for Joint Programs, Multinational Project Arrangements, and collaborative efforts. Includes the procurement of Government Furnished Equipment/Items/Data/property (GFX). GFX is used when procurement of an item is not available to the contractor other than through the Government, or the Government can provide this service or item at lower cost.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: CONTRACTOR SYSTEM OF SYSTEM ENGINEERING & PROGRAM MANAGEMENT - IBCT INCREMENT1	53.240	0.095	-
Articles:	0	0	
Description: Implemented processes, models, tools & management structure to integrate all subcontractor partners into one team to meet cost, schedules, and technical performance requirements in the contract to include program overview, Earned Value Management, briefings, technology reviews, reports, program risk, subcontract management, data, operation management,			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
contract management, procurement and acquisition management along with Small and Minority Business Integration, SDD Affordability/CAIV/ Life Cycle Management and development of program baseline & Integrated Master Schedule. FY10 includes Program Management for the remainder of Increment 1 effort through LUT 10. FY11 supports the Customer Test. ***FY 2010 Accomplishments:*** See narrative above. ***FY 2011 Plans:*** See narrative above.			
Title: CONTRACTOR SUPPORTABILITY/LOGISTICS - IBCT INCREMENT 1 ***Articles:*** ***Description:*** Provided test support for equipment testing and demonstrations for Increment 1 systems supportability performance verification. Validate Maneuver Sustainment and other applicable support concepts during testing, demonstrations, and validations. Ensure sensor collection of data for logistics decision support system software is adequate to support logistics modeling verification and validation efforts. Complete integration of logistics requirements for the IBCT Increment 1 systems. Ensure Supportability architectures and requirements are implemented during design, development, fabrication and test of IBCT Increment 1 platforms/systems to achieve Transportability, Deployability and Operational Availability. Complete data products for supportability planning, PBL planning, IETM development, Level of Repair Analysis, Logistics Management Information (LMI) Logistics Demonstrations, UID Implementation, Core Logistics Analysis and Source of Repair Analysis and diagnostic models. Complete ILS assessments to ensure that requirements for RAM-T and supportability are met. Provide support for Logistics Demonstration Planning and readiness reviews, 4QFY10. ***FY 2010 Accomplishments:*** See narrative above. ***FY 2011 Plans:*** See narrative above.	3.965 0	1.132 0	-
Title: CONTRACTOR SOS INTEGRATION - IBCT INCREMENT 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:***	8.869 0	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Conducted the Increment 1 delta CDR, conducted Industrial Capability Assessment for all major suppliers in support of PRR, and support MS C Decision review. Planned and conducted all system level IQT, develop, test integrated releases of SOSCOE Battle Command and other software applications at the NSQT. Implemented engineering changes to correct faults, detected from FY09 TFT/FDT&E/LUT, improved system reliability, and conducted FY10 TT (Technical Test)/FDT&E/LUT.			
Title: CONTRACTOR TRAINING SPECS AND PRODUCTS - IBCT INCREMENT 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Designed and developed Interactive Multimedia Instruction (IMIs) and Job Aids to enable individual and collective training and to support the technical field tests (TFT), FDT&E and LUT. Update the currently fielded TADSS to support training of the evaluation force in preparation for and during LUT.	2.447 0	-	-
Title: CONTRACTOR SOS TEST AND M&S - IBCT INCREMENT 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Planned and executed qualification testing of the new form factor U/T-UGS, updated Network Integration Kit (NIK) - formerly B-kit, updated SUGV, and Class I Block 0 UAV at various ATEC test ranges. Developed and executed detailed Technical Test (TT) Plan in a classified network environment. Technical Test is executed by a team of 300+ engineers over two month period of test execution and regression testing. Supported integration of Increment 1 SW and HW in support of the TT. Provided data analysis and final TT test report to support December 2010 DAB Update. Provided support to the FY10 FDTE and LUT.	25.716 0	-	-
Title: CONTRACTOR FEE - IBCT INCREMENT 1 ***Articles:*** ***Description:*** This includes both the Boeing incentive and fixed fee. Beginning in FY11 fee is included in each PE. Therefore fee in FY11 is for only SoS Engineering and Program Management effort. Fee is calculated only on new effort not cost overruns. ***FY 2010 Accomplishments:*** See narrative above. ***FY 2011 Plans:***	29.100 0	0.123 0	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
See narrative above.			
Title: GOVERNMENT: (SYSTEMS ENGI & PM - INC 1) & (BCT Tech Integration Support & Facility - WSMR)	53.224	9.101	-
Articles:	0	0	
Description: Funding is provided for the following effort.			
FY 2010 Accomplishments: Participated and ensured the government and soldiers best interest/values were considered in the following: System of System (SoS) reviews, trade studies, architectural mgt, requirements decomposition, requirements flow down, development of specifications, interface definitions, configuration mgt oversight, specialty engineering, analysis and verification of integrated force effectiveness, Software, Risk, M&S, Simulation, Performance/Product/Producibility Assurance, Integration & Verification, Technology and Experimentation Management. FY10 included system engineering and analysis effort required to support integration and testing. The following integration and test events occurred in FY10: Initial Qualification Test for each system, Technical Test, Field Development Test & Experimentation, Platoon and Company Situational Training Exercise, Limited User Test. FY11 supports the Customer Test. PROGRAM MANAGEMENT: Provide integrated program management (i.e. planning, directing, tools and controlling functions), for all development activities to include data and supplier management, program control, government training, procurement and contracts management, operations management for incremental BCTs and new combat vehicle development. Provide Congressional Title 10 oversight, cost analysis and management, budget development, justification and tracking, Earned Value Management, Integrated Master Schedule development and management, Complementary Program management and operations management associated with contractor management. Also includes TRADOC support for requirement analysis, AoA support, and Milestone C and associated decision point reviews.			
FY 2011 Plans: See narrative above.			
Title: GOVERNMENT: (SYS TEST & EVAL -STE- & M&S - IBCT INC 1) & (NK Integration M&S)	83.534	76.365	-
Articles:	0	0	
Description: Funding is provided for the following efforts.			
FY 2010 Accomplishments: Continued to fund and support APS, NIK, UAV, UGS and UGV testing at ATEC test centers. Provided for range support for IBCT Increment 1 platform qualification testing, IBCT Increment 1 Technical Tests and the LUT 10. Provided SME support to the contractor and surge engineering support as required to support specific IBCT Increment 1 test events. Funded the development and modification of modeling and simulation test tools for future test events. These tools include test event design tools as well			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
as test data collection capabilities. Funds the operational and maintenance and hardware (HW) refresh costs of the Common Control Nodes and WSMR and APG. Funded for infrastructure and test facilities that supported the IBCT Increment 1 testing. Funded DREN connectivity to selected contractor sites. Continue modifications to M&S GFX to include OneSAF v5.0, White Sands Missile Range digital terrain databases, three dimensional visualization tools, and Night Vision Laboratory's Toolset to accurately represent Increment 1 systems, networks and Battle Command in a realistic synthetic environment. Executed 6 M&S Integration Events to federate the M&S simulations and stimulators required for execution of FY10 TT and LUT events. Starts development of Brigade-scale simulation environment that will be required to support the FY11 IOT&E, to include comparative evaluation of IBCTs with and without Increment 1 material in a validated and realistic operational and threat environment. ***FY 2011 Plans:*** Fund and support NIK, CPD threshold Class I UAV, UGS and CPD threshold UGV production verification testing at ATEC test centers. Funds the planning and conduct of Government Technical Tests, Increment 1 Initial Operational Test and Comparative Test to include range support, threat, data collection and analysis. Detail plan range support for production verification testing of IBCT Increment 1 systems. Funds overarching M&S integration activity within the Government, to include responsibility for integration of M&S GFX and VV&A in support of Army-led Increment 1 comparative IOT&E. Provides operationally relevant and realistic brigade and above scale environment to allow a single live CAB to conduct IOT&E operations in coordination with soldiers controlling two additional CABs, the Brigade headquarters, and elements of the above Brigade force in simulation environment.			
Title: GOVERNMENT OTHER - ***Articles:*** ***Description:*** Funding is provided for the following efforts. ***FY 2010 Accomplishments:*** This includes support to both PM and non-PM government support offices that provide technical expertise (PEO C3T, TRADOC, UAMBL, ARL, FFID, etc). This also includes other technical support contracts like the Sandia Labs - MITRE, Software Steering Committee from University South California and University of Maryland which also reviews software performance, logistics products, network requirements and capabilities. It includes all electronic hardware and software required for government personnel (computers, Blackberry, software, internet and ACE software agreements). CIO and Security management within the PM. ***FY 2011 Plans:*** See narrative above.	32.472 0	10.204 0	-
Title: BCT PLATFORM A-KIT DEVELOPMENT - IBCT INCREMENT 1 ***Articles:***	3.810 0	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Provided for the continuation of the design effort of the A-Kits for the current production configurations of the 1151 and 1165 HMMWV variants. Funded the development of Technical Data packages for both A-Kit variants to include installation drawings as well as updating all Technical Bulletins containing installation instructions. Funded the Installation of the A-Kit, any Legacy equipment as well as supporting the NIK installations on all HMMWV test vehicles. Funded the A-Kit contractor support to all required testing.			
Title: GOVERNMENT GFX - IBCT INCREMENT 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** PEO STRI Technical Management Integration (TMI) support to the Boeing Training IPT, managing the technical activities of development, system engineering, modeling, design support, integration and test, and delivery of the Training Common Components (TCC) software to the prime contractor.	2.309 0	-	-
Title: CONTRACTOR SYSTEM OF SYSTEM ENGINEERING & PROGRAM MANAGEMENT - CP 13/14 ***Articles:*** ***Description:*** Implement processes, models, tools & management structure to integrate all subcontractor partners into one team to meet cost, schedules, and technical performance requirements in the contract to include program overview, Earned Value Management, briefings, technology reviews, reports, program risk, subcontract management, data, operation management, contract management, procurement and acquisition management along with Small and Minority Business Integration, SDD Affordability/CAIV/ Life Cycle Management and development of program baseline & Integrated Master Schedule. CP 13/14 effort began in FY10. ***FY 2010 Accomplishments:*** See narrative above. ***FY 2011 Plans:*** See narrative above.	115.087 0	104.153 0	-
Title: CONTRACTOR - SUPPORTABILITY/LOGISTICS - CP13/14 ***Articles:***	22.945 0	21.060 0	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: Funding is provided for the following effort. ***FY 2010 Accomplishments:*** Defined, developed & integrated requirements for the CP 13/14 platforms and systems. Ensured Supportability architectures and requirements are implemented during design, development, fabrication and test of CP 13/14 and platforms/systems to achieve Transportability, Deployability and Operational Availability. Initiated CDR planning data products for CP 13/14 systems for supportability planning, PBL planning, IETM development, Level of Repair Analysis, Logistics Management Information (LMI) Logistics Demonstrations, UID Implementation, Core Logistics Analysis and Source of Repair Analysis and diagnostic models. Identified the logistics test requirements for the soldier or warfighter level health tests and the requirements for integration testing with multiple systems and platforms as well as the system of system level testing. Planned, prepared and completed CDR ILS assessments for CP 13/14 systems to ensure that requirements for RAM-T and supportability were met. Provided Logistics Demonstration Plan. ***FY 2011 Plans:*** Define, develop & integrate requirements for the CP 13/14 platforms and systems. Ensure Supportability architectures and requirements are implemented during design, development, fabrication and test of CP 13/14 platforms/systems to achieve Transportability, Deployability and Operational Availability. Plan for , review and provide SoS CDR and IQT data products for supportability planning, PBL planning, IETM development, Level of Repair Analysis, Logistics Management Information (LMI) Logistics Demonstrations, UID Implementation, Core Logistics Analysis and Source of Repair Analysis and diagnostic models. Identify the logistics test requirements for the soldier or warfighter level health tests, and the requirements for integration testing with multiple systems and platforms as well as the system of system level testing. Plan, prepare for and complete CDR and IQT ILS assessments to ensure that requirements for RAM-T and supportability are met. Provide Logistics Demonstration Plan.			
Title: CONTRACTOR SOS INTEGRATION - CP 13/14	42.120	37.219	-
Articles:	0	0	
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Managed the execution Integrated System Level Critical Design Reviews (CDRs for CPD objective Class I Unmanned Air Vehicles (UAV), Common Controller, CPD objective Small Unmanned Ground Vehicle (SUGV), ARV(L), Autonomous Navigation System (ANS), NIK and Network; and Build Readiness Checkpoint for CP 13/14 Battle Command. Hardware and software simulation to improve design and get soldier based assessments. Updated the Integrated Analysis Plan and execute assessments in the areas of KPP achievability, MANPRINT, Manpower Estimate, Human Systems Integration, Safety, Information Assurance and force effectiveness in support of the SoS CDR. Update Program National Environment Policy Act (NEPA) Assessment and complete			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
a Programmatic Environmental Safety Occupational Health (ESOH) Evaluation. Conducted requirements decomposition for CP 13/14 and develop ASPEC. ***FY 2011 Plans:*** Continue systems engineering architecture/decomposition of TRADOC's requirements currently being staffed at system level CDD and development of CP 13/14 Performance Specification: Manage the integration of the CPD objective Class I Unmanned Aerial Vehicles (UAV), Common Controller, CPD objective Small Unmanned Ground Vehicle (SUGV), ARV-A (L), Autonomous Navigation System (ANS) and the Network. Complete the SoS Critical Design Review 3QFY11 and demonstrate ability to meet the required capabilities. Substantiate, via Integrated Platform/Network Analysis and requirements traceability, achievement of the Key Performance Parameters. Complete Human Systems Integration assessments to ensure the Soldier can effectively operate the provided systems in a safe and effective manner.			
Title: CONTRACTOR TRAINING SPECS & PRODUCTS - CP 13/14 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Designed and developed initial increment of Embedded Training capability for CP 13/14. Updated the currently fielded TADSS to maintain concurrency with BCS and SOSCOE to facilitate training of the evaluation force in preparation for and during LUT. Completed the design of the CL1 training capability to enable live and virtual training, including interoperability with MILES. ***FY 2011 Plans:*** Complete the platform design of the ARV-A(L), SUGV, CCD, and NIK/Network training capability, to enable interoperability with Combat Training Center Instrumentation System (CTC-IS), Home Station Instrumented Training Systems (HITS), DRTS, Close Combat Tactical Trainer (CCTT), JLCCTC, Army Training Information Architecture _ Migrated (ATIA-M), and I-MILES. Initiate the development of Live, Virtual, and Constructive training capabilities for the CL1, ARV-A(L), SUGV, CCD, and NIK/Network. Update IMIs and Job Aides based on post-test system modifications to support training for FY11 test events. Update the currently fielded TADSS to maintain concurrency with BCS and SOSCOE to facilitate training of the IOT&E unit prior to test event.	23.497 0	25.856 0	-
Title: CONTRACTOR SOS TEST AND M&S - CP 13/14 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:***	26.913 0	36.938 0	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Initiated the development of the detailed test plan, test procedures, and test training plans for the Network Maturation Scalability Assessment (NMSA) laboratory and field phase to demonstrate scalability of CP13/14 SW and network. Developed and delivered Test Resource Requirements Document to the USG for NMSA. Initiated the development of the detailed test plan, test procedures, and test training plans for the Technical Test. ***FY 2011 Plans:*** Complete detailed planning of the qualification testing of the CP 13/14 platforms (improved CPD objective SUGV, CPD objective Class I UAV, ARV-A(L), Common Controller, UGS, Improved NIK with upgraded Battle Command Software). Complete detailed test planning for the CP 13/14 Technical Test Conduct Pre-Test Readiness Review for Technical Test Conduct Benchmarks and Checkouts for Network Maturation Scalability Assessment (NMSA) (Laboratory and Field phases). Continue development of Brigade Combat Team synthetic environment for use in NMSA and software integration. Execute field integration tests of the Common Controller for each platform type tied to the command post.			
Title: CONTRACTOR FEE - CP 13/14 ***Articles:*** ***Description:*** This includes both the Boeing incentive and fixed fee. Beginning in FY11 fee is included in each PE. The PE in FY11 and out only includes fee for Systems of Systems Engineering/PM activity. Fee is calculated only on new effort, not cost overruns. ***FY 2010 Accomplishments:*** See narrative above. ***FY 2011 Plans:*** See narrative above.	84.905 0	22.523 0	-
Title: TERMINATION COSTS ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Special Termination Costs for MGV, Class IV and MULE These costs are paid to the contractor and subcontractors as per FAR 31.205 for; Severance Pay, Reasonable costs continuing after termination, Settlement of expenses, and the costs to return field service personnel from remote or liaison sites. In addition to the FAR termination costs this element includes Disposition of Terminated Material to other Army agencies. These funds also	36.352 0	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
include all cost for packaging, transporting, and short and long term storage of selected materials IAW FAR 45/49. All Secure equipment was dispositioned IAW NSA requirements.			
Title: GOVERNMENT - SYSTEM ENGINEERING & PROGRAM MANAGEMENT - CP 13/14 AND BEYOND ***Articles:*** ***Description:*** SYS ENG: Participate and ensure the government and soldiers best interest/values are considered in the following: System of System (SoS) reviews, trade studies, architectural management, requirements decomposition, requirements flow down, development of specifications, interface definitions, configuration management oversight, specialty engineering, analysis and verification of integrated force effectiveness, Software, Risk, M&S, Simulation, Performance/Product/Producibility Assurance, Integration & Verification, Technology & Experimentation Management. FY10, FY11 & FY12 includes system engineering and analysis effort required to support CP 13/14 CDR and begin preparation for CP 15/16. This includes the following: Develop architecture for brigade level integrated materiel solution to user identified capability gaps. Decompose brigade level architectures into interface and performance requirements. Identify Integrated Materiel portfolio solution set for CP 13/14 and beyond. Configuration manage SoS baseline for CP13/14. Develop integration/interface standards for CP 13/14. Plan SoS Integration analysis, demonstrations and experiments. Develop SoS Capability Package integration standards and toolsets. Establish SoS level systems engineering products (architectures, interfaces, requirements) for specific functional Brigade level materiel solutions such as Integrated Base Defense, NetOPs and HW/SW integration. PROG MGT: Provide integrated program management (i.e. planning, directing, tools and controlling functions), for all development activities to include data and supplier management, program control, government training, procurement and contracts management, operations management for incremental BCTs. Provide Congressional Title 10 oversight, cost analysis and management, budget development, justification and tracking, Earned Value Management, IMS development and management, Capability Package Portfolio Integration management and operations mgt associated with contractor management. Also includes TRADOC support for requirement analysis, AoA support, and MS C and associated decision point reviews. ***FY 2010 Accomplishments:*** See narrative above. ***FY 2011 Plans:*** See narrative above.	68.187 0	87.012 0	-
Title: GOVERNMENT - SYSTEM TEST & EVALUATION (STE) AND M&S - CP 13/14 ***Articles:*** ***Description:*** Funding is provided for the following effort	20.238 0	47.148 0	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Initiated test planning for NIK, CPD objective Class I UAV, UGS and CPD objective SUGV testing at ATEC test centers. Verified and validated WNW waveform models that will be used to evaluate the CP 13/14 network performance at Brigade and higher level. Continued funding of modifications to M&S GFX software to accurately represent CP 13/14 systems, networks and Battle Command. Established Government capability to execute top-level M&S integration, execution and support to allow soldiers to exercise and evaluate CP 13/14 systems, networks and Battle Command software in an operationally relevant and realistic environment. ***FY 2011 Plans:*** Continue to fund and support NIK, CPD objective Class I UAV, UGS and CPD objective UGV testing at ATEC test centers. Provide SME support to the contractor and surge engineering support as required to support specific CP 13/14 test events. Provides range support and threat representation to support contractor Technical Test. Develop and modify modeling and simulation test tools to include Role Player Work Station, JDCARS (Joint Digital Collection, Analysis, and Review System), RICS2 (Remotely Reconfigurable Integrated Instrumentation Command and Control Simulator, Stimulator), TCRS (Test Conduct and Reporting System),TestTalk, and CTTK-DRA(C4ISR Test Toolkit _Data Reduction and Analysis) suite that will aid in integration and support of CP13/14 Technical Tests. Funds the operational and maintenance and hardware (HW) refresh costs of the Common Control Node at APG. Secures facilities planned for future CP13/14 testing at WSMR. Funds DREN connectivity to selected contractor sites. Enhancements of OneSAF to support: adaptation to incremental releases of Integrated Battle Command/Network software; updated representations of CP 13/14 equipment; and updated unit-level representations of CP 13/14 units. Funds overarching M&S integration activity within the Government, to include responsibility for integration of M&S GFX and VV&A in support of Army Brigade level integration exercise. Initiates in support of Army-led annual integration exercises transition of lifecycle responsibility and product management of the Communications Effect Server (CES) from the prime contractor to the Government, to support Army BCT Modernization network analysis, assessment and test. Continue platform simulation development supporting: BCS and Network Software integration and test; Brigade level integration and test; design and analysis trade studies; technology readiness demonstrations; laboratory and field test events; and soldier training.			
Title: BCT INTEGRATION EXERCISES (BCTIE) - CP 13/14 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Rapid System of Systems (SoS) Integration of current force and emerging systems to fill TRADOC-defined operational capability gaps. Demonstratee and assessed brigade level integrated materiel solution to accelerate Integrated Materiel portfolio solution set for CP 13/14 and beyond. Planned, integrated, demonstrated, assessed, and reported warfighting capabilities as performed by	8.000 0	9.000 0	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
soldiers. The following integration and test events occurred in FY10: The exercise successfully demonstrated an initial integrated (horizontal and vertical) BCT Network (dismount to BCT Commander) operating across a three communications layers (terrestrial, aerial and space) in complex terrain. BCTIE FY10 operated across the spectrum of operations starting with the most austere dismounted environment (Tier 1), thru the addition of vehicles (Tier 2: air and ground) and finally the buildup of a significant Forward Operating Base (FOB) infrastructure (Tier 3) building combat power as the BCT begins to conduct sustained and prolonged operations. A total of 8 separate network operational vignettes were run over a two week period. The exercise was conducted hand-in-hand with the Army's Operational Test Command (OTC) who conducted a Forward Operational Assessment (FOA). ***FY 2011 Plans:*** Rapid System of Systems (SoS) Integration of current force and emerging systems to fill TRADOC-defined operational capability gaps. Demonstrate and assess brigade level integrated materiel solution to accelerate Integrated Materiel portfolio solution set for CP 13/14 and beyond. Plan, integrate, demonstrate, assess, and report warfighting capabilities as performed by soldiers. The following integration and test events are planned for FY11: Refine robust digital connectivity down to the Soldier level, enhance horizontal and vertical communications (voice, data, imagery and video) throughout the BCT formation, improve integration of Soldier-Leaders (NETT Warrior/GSS) and the BCT sensor layer at Company/Platoon and below, enhance Company Command Posts with improved communications and strategic reach back (WIN-T Increment 2) and Mission Command applications, enhance a network aerial layer (surge and persistent) for communications and sensor extension, demonstrate maturity of advanced radios and waveforms to form the network and connect all the nodes and provide digital distribution of ISR information, real-time battle tracking, integration of Army attack aviation with ground forces, reach-back (WIN-T) into National Intelligence Database from the Company level, digital posting, distribution and archiving of combat reports and digital medical evacuation requests from soldier leader to higher headquarters. Support integration with Theater Provided Equipment (TPE) in tactical vehicles including force protection systems at the platform level.			
Title: GOVERNMENT OTHER - CP 13/14 ***Articles:*** ***Description:*** This includes support to both PM and non-PM government support offices that provide technical expertise (PEO C3T, TRADOC, UAMBL, ARL, FFID, etc). This also includes other technical support contracts like the Sandia Labs MITRE, Software Steering Committee from University South California and University of Maryland which also reviews software performance, logistics products, network requirements and capabilities. It includes all electronic hardware and software required for government personnel (computers, Blackberry, software, internet and ACE software agreements). CIO and Security management within the PM. ***FY 2010 Accomplishments:***	66.708 0	58.440 0	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
See narrative above. ***FY 2011 Plans:*** See narrative above.			
Title: BCT PLATFORM A-KIT DEVELOPMENT - CP 13/14 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Provided for the integration of BCT capabilities (ICS, GPCS, GMR) into various MRAP variants. Funded the start of development for the integration, material and labor to build the prototype A-Kits, and modify the MRAP variants (the configuration of which includes all Theater Packaged Equipment (TPE)) to accept the NIK. Development also includes all required training/logistics products needed to field and maintain these MRAPS. Funded the A-Kit contractor support to all required testing. ***FY 2011 Plans:*** Provides for the integration of BCT enhanced capabilities (ICS, GPCS, GMR) into the MRAP and HMMWV and other potential vehicle/variants. Funds the start of development for the integration kit, procurement of material and labor to build prototype A-Kits and modify any other platform required to accept the ICS and GPCS. Also includes development of any training materials as well as supportability and fielding plans. Funds the A-Kit contractor support to all required testing.	4.875 0	5.000 0	-
Title: GOVERNMENT GFX - CP 13/14 ***Articles:*** ***Description:*** Continue Technical Management Integration support throughout the development of the Training Common Components (TCC) efforts (OneSAF, OneTESS, Common Training Instrumentation Architecture and SE Core). SMEs develop strategies to transition TCCs into Warfighter Machine Interface (WMI) and Battle Command software, Deliver TCC CP 13/14, Phase 1 in Jul 10. Continue development of TCC Software Architecture and Software for CP 13/14, Phase II. Deliver CP 13/14, Phase II in 4QFY10. Fully integrate TCCs with Warfighter Machine Interfaces and applications running as a single SOSCOE application. Continue Live/Virtual/Constructive interoperability between Live and Constructive training capabilities (AAR, TM, EM, LTTES, DL) for an integrated WMI solution. Provide Government oversight of additional TCC construction and Live/Constructive Integration. ***FY 2010 Accomplishments:*** See narrative above. ***FY 2011 Plans:***	28.498 0	17.342 0	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
See narrative above.			
Title: BCT Technical Integration Support and Facility ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:*** Facilitate earlier soldier involvement in integrated network evaluations. Support field demonstrations; integration exercises; integrated test and evaluation events; and fielding of integrated BCT. Provide technical and troubleshooting support and interoperability confirmation/checkouts for modernized BCTs equipped with Program of Record (POR) systems and Theater Provided Equipment (TPE). Enable timely and responsive assessment, insertion, and refresh of operationally relevant integrated network capabilities into modernized BCT architecture. Inform requirements by demonstration of new systems and technologies capable of addressing operational deficiencies found within integrated BCT networks in Army and Joint, Inter-agency, and Multi-national (JIM). Support and enable on-site evaluation of technical and systems architectures developed for modernized and integrated Infantry, Stryker, and Heavy BCT tactical networks. Enable rapid demonstration, verification, analysis, test, and, if needed, fielding of hardware and software. Support Army and Joint interoperability assessments and certification efforts. Support local and distributed development, analysis, integration, verification, testing, and evaluation of network hardware and software technologies, components, subsystems, systems, and System of Systems/Family of Systems (SoS/FoS) concepts, technologies, systems, and SoS/FoS that enhance integrated network performance. Monitor the performance of integrated BCTs deployed in testing and operational environments; maintain ?lessons learned? database to influence development of near-term, relevant enhancements for operational forces and follow-on CPs.	-	-	30.000
Title: BCT Technical Integration Support and Facility (WSMR) ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:*** Purchase and integrate AETF Experimentation Equipment Sets which include Telecommunications, routers, network management software, COE software, Network Application and Services software, smart phones and PDAs, computers (Handheld and Mobile), Antennas, display screens, radios, vehicles and associated mounting hardware and cables.	-	-	40.000
Title: Goverment BCT Technical Integration Support and Facility (WSMR) ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:***	-	-	7.500

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Approximately 30 government personal to support BCT Integration and Experimentation management.			
Title: Government Management of BCT Network Integration, Modeling and Simulation, and Test and Evaluation ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:*** Approximately 40 government personnel for test planning, management, and execution staff. Approximately 30 government engineering and assessment personnel to complete analysis and assessment of all experiments and test to future improve BCT capability. Approximately 30 government personnel for AETF integration and coordination (PM) staff.	-	-	25.000
Title: BCT Network Integration, Modeling and Simulation, and Test and Evaluation ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:*** Finalize the preparation, planning and coordination of all experiments and test events with ATEC, OTC, FFID and PM. Conduct all experiments and tests to include procurement of range time and support. Develop all reports for test engineering support. Prepare and procure test infrastructure to support all experiments and tests. Procure test instrumentation and code or procure M&S models to support brigade testing and simulation. Contract for functional system representatives to assist in integration, troubleshooting and testing.	-	-	80.000
Title: SoS Engineering and Analysis - Government Management ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:*** Finalize the Arm's SoS engineering policies, guidelines and COEs for Brigade and Network Brigade CP/CS Integration. Complete and manage a SoS Engineering Baseline within an Integrated Data Environment to evaluate emerging capabilities. Finalize Brigade-level architectures to demonstrate required functionality between weapons/support systems within the BCT. Document the standards required to improve commonality of integration approaches (i.e. VICTORY). Document current ground/air/lethality/ C4ISR systems performance characteristics (i.e. SWaP-C) to aid and standardize development and integration approaches. Establish and standardize the M&S/Analysis tool kit required for evaluation and risk reduction of emerging capability needs (i.e. ONS/JUONS). Approximately 70 government personal to conduct this effort in support of ASA(ALT) decision process.	-	-	17.500
Title: SoS Engineering and Analysis - BCT Architecture Modeling & Network Analysis ***Description:*** Funding is provided for the following effort	-	-	15.000

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
FY 2012 Plans: Refine and finalize Network Analysis Tools. NAIL shall mature the Army's Brigade Combat Team (BCT) Network and beyond by performing network analysis, integration and experimentation, and assessing the end to end performance capability of the Network Five-Layer Architecture in specification and design, identify performance caps, emerging technical solutions, and complete the requirements in support of the Army Modernization Program Plan. Perform and deliver LVC E2E network performance analysis and assessment of Army Modernization Program various Network System of System; SoS designs and requirements in support of Army Modernization Network for CP13/14 and beyond integration, experimentation and analysis and development.			
Title: Integrated Base Defense ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:*** Complete the development of framework, to analyze threat and requirements, create standards and protocols, develop architecture and use cases, define performance parameters, create and support defined program. Approximately 20 government personnel to support.	-	-	5.000
Title: CP 13/14 and Beyond Mission Analysis ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:*** CP assessment and material identification, systems, engineering and integration, acquisition, testing & evaluation, training, logistics and fielding, and resource management. Develop and execute a working-level IMP/IMS that details the integration, testing, SoS & FoS test plans and fielding plans/schedules for capability packages with specific units that cycle through ARFORGEN. Lead the execution of the SoS-level, FoS-level trades and analyses to determine Future CP Materiel composition, resulting in a recommendation to ASA(ALT). Establish and maintain a federation of integration, test, and modeling and simulation facilities/capabilities to support Capability Package/Capability Set Management and Execution. Plan, Coordinate and Conduct future Brigade Combat Team Integration Exercises (BCTIE) beyond FY12. Apply the Integrated Network Test EXORD execution strategy to CPs 13-14 and beyond as appropriate. Ensure sufficient requirements are in place and that adequate resources are programmed to support delivery of capability. Conduct ?integration and feasibility? analysis to include cost, schedule, performance and integration risks. Determine the ?delta? between the required capabilities, architectures and the equipment on-hand. Conduct Integration Readiness Reviews at the BCT level to support system-level DAB, CSB and WSR execution. Develop brigade portfolios across all materiel domains. Develop and Execute an overarching System Integration Plan (SILS, SITs, NAIL, SoSIL, CCNs, CTSF, AETF, Use Case, Threads, etc). Recommend interface standards and policy to ASA(ALT)	-	-	10.000

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APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
SoS SE following holistic systems engineering analysis and determining integration costs across community. Recommend SoS developmental, verification and integration test standards and policy to ASA(ALT) and ATEC following coordination across PEOs and test and evaluation community and determining associated costs. Establish and Chair an Integration Configuration Control Board (ICCB) to ensure standards and policy are complied with, and enforce commonality of interfaces, capabilities, and standardization, wherever possible. Establish Collective Training Requirements for Brigade. Expected products/results from Integration include: Improved BCT performance through decreased SWaP-C and required network bandwidth of emerging capabilities, Standardized ?look and feel? to the Soldier across BCTs, Enhanced Situational Awareness at the Soldier level. Improved Soldier performance via a synchronized fielding/training execution. Approximately 40 government personal to support.			
Title: Common Operating Environment (COE) - Government Management ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:*** Serve as the lead software engineering agent for the Army COE. Establish and maintain a software support repository for configuration control and re-distribution of the Tactical COE and COE-based Applications. Establish a federation of software SILs across the AMC SW Support Centers to leverage the capabilities of all the centers in support of COE prototyping, assessment and deployment. Chair the design forum across the affected PEOs and Software Centers needed to establish the architectural design rules which enable proper convergence on a COE across the Army Enterprise. Evaluate existing software components from SOSCOE, JCR, JBC-P, BCS and other for use in a Tactical COE for all computing environments. Provide help desk and integration support to COE application developers across PEOs, reducing overall integration time and cost to implement. Conduct rapid prototyping and integration of capabilities across legacy and emerging systems to demonstrate military utility in the BCT Integration Events and other appropriate venues. Establish design leadership within the AMC Software Centers for the COE and Army Networking by shifting this work from the contractor base into the Army, organic staff and organizations. Define and govern COE standards and policies to ensure information sharing between tactical systems across the Army Network. Approximately 30 government personal	-	-	7.500
Title: Common Operating Environment - Software Code Development ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:*** Contracting for OEM support to develop a common operating environment for the Army. This includes procurement of software coding, integration and testing to ensure current Battle Command and vehicle software are compatible with the operating system.	-	-	15.000
Title: Common Operating Environment - Facilities & Infra-Structure	-	-	10.000

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: Funding is provided for the following effort ***FY 2012 Plans:*** Procure all software licenses required to support developing a common operating environment. Create a software repository for all Army operating software (such as, SOSCOE, JCR, Battle Command, FBCB2, etc). Establish DREN connection and network capability to FFID and APG to support integration and testing. Create infrastructure to manage and support common operating environment facility.			
Title: Common Operating Environment - FSR Integration Support ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:*** Contractor support to integrate network hardware and software into the common operating environment. This includes SIL support, government test support, and soldier user test support. This support includes both labor for white coats assisting with integration, contractor technical support for trouble shooting and any spare hardware updates or requirements to support the integration process.	-	-	10.000
Title: Brigade Set Fielding Planning and Coordination ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:*** Planning coordination, and execution of Brigade Set Fielding to include facilities, units, equipment, software, training, NET teams, NMIBs, spares, CLS. Approximately 30 government personnel.	-	-	7.500
Title: VICTORY Architecture and Standards ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:*** VICTORY = Vehicular Integration for C4ISR/EW Interoperability. Interoperable Open Systems Electronics Architecture that: increases available Platform Crew Space, increases Platform Capabilities, enables Mission Equipment Portability, reduces Platform Integration Costs, and reduces Platform Life Cycle Costs. Development of VICTORY Architecture and Integration of Victory into CP/CSs. Evaluate the Army vehicle inventory for VICTORY architecture compliance. Evaluate the Army C4ISR inventories for VICTORY compliance. Evaluate baseline SWAP-C of Army systems and potential gains from VICTORY implementation. Understand Army Vehicle and C4ISR Architectures and the Deltas from the VICTORY concept . Participate	-	-	5.000

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
in VICTORY Working Groups. Ensure VICTORY is included in all architectures and standards. Participate in VICTORY PDRs and CDRs. Develop VICTORY Architecture Demonstration/Prototype Using Future CP/CS Systems. Create a test plan to validate prototype performance with VICTORY implementation. Advocate for Requirements and Funding that supports VICTORY implementation in system upgrades and new procurements . Capture VICTORY key dates, implementation plans, etc in PEO I schedule. Approximately 20 government personal.			
Title: Government Staffing to Execute Termination Contract Negotiations ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:*** Approximately 35 government personnel to complete Contract Close-Out and Termination of Boeing and other SETA contracts.	-	-	8.872
Title: Contract Special Termination Costs ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:*** Special Termination Costs for Boeing and SETA contracts. These costs are paid to the contractor and subcontractors as per FAR 31.205 for; Severance Pay, Reasonable costs continuing after termination, Settlement of expenses, and the costs to return field service personnel from remote or liaison sites. In addition to the FAR termination costs this element includes Disposition of Terminated Material to other Army agencies. These funds also include all cost for packaging, transporting, and short and long term storage of selected materials IAW FAR 45/49. All Secure equipment was dispositioned IAW NSA requirements.	-	-	90.000
Accomplishments/Planned Programs Subtotals	847.011	568.711	383.872

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 0604646A: *Non Line of Sight - Launch System*	88.205	81.247								0.000	169.452
• 0604660A: *FCS MGV Manned Ground Vehicles & Common Grd Vehicle Components*	231.103									0.000	231.103
• 0604662A: *FCS Reconnaissance (UAV) Platforms*	92.444	50.304								0.000	142.748
	122.418	249.948	143.840		143.840		106.480	131.880	32.009	0.000	911.047

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 0604663A: *FCS Unmanned Ground Vehicles*											
• 0604664A: *FCS Unattended Ground Sensors*	39.664	7.515	0.499		0.499					0.000	47.678
• 0604665A: *FCS Sustainment & Training R&D*	685.524	610.389					251.761	254.232	181.558	0.000	2,187.185
• G86200: *WTCV FCS Spin Out Program*	210.909									0.000	210.909
• A00015: *ACFT BCT Unmanned Aerial Veh (UAVs) Incr 1*		44.206								0.000	44.206
• B00001: *OPA BCT Unattended Ground Sensor*		29.718								0.000	29.718
• B00002: *OPA BCT Network*		176.543								0.000	187.068
• B00003: *OPA BCT Network Incr 2*							229.528	187.955	179.653	0.000	768.167
• F00001: *OPA BCT Unmanned Ground Vehicle*		20.046	24.805		24.805					0.000	48.096
• F00002: *OPA BCT Unmanned Ground Vehicle Incr 2*			11.924		11.924		422.192	834.171	696.603	0.000	2,414.904
• G80001: *OPA BCT Training/ Logistics/Management*		61.581	149.308		149.308		49.792	28.259		0.000	435.142
• G00002: *OPA BCT Training/ Logistics/Management Incr 2*			57.103		57.103		441.250	347.466	273.354	0.000	1,308.265

D. Acquisition Strategy

A 23 June 2009 Acquisition Decision Memorandum (ADM) directed the cancellation of the FCS (BCT) acquisition program. It also instructed the Army to transition to an Army modernization plan consisting of a number of integrated acquisition programs. At that time, the SO E-IBCT was designated a pre-MDAP, with a Milestone C decision scheduled for the first quarter FY10. A follow-on ADM was issued 9 July 2009. In it, the Army was directed to continue efforts to improve the brigades beyond the Early Infantry Brigade Combat Team acquisition until a standalone program(s) is defined later in 2010. An Army BCT Modernization Defense Acquisition Board (DAB) was then held on October 16, 2009 to review the Army's plans for the post-Future Combat Systems efforts and confirm the Army brigade modernization acquisition plans were consistent with the Secretary of Defense's guidance. An ADM issued after this DAB stated: "The approach, for Increment 1 (Early-Infantry Brigade Combat Team (E-IBCT)) and the Ground Combat Vehicle (GCV) effort, is consistent with the Secretary's guidance and each is being positioned for more in-depth review and acquisition decisions later in 2009." The Increment 1 E-IBCT Milestone C took place 22 December 2009 and was approved in an ADM dated 24

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

December 2009. The Program Executive Office-Integration (PEO-I) has modified the existing contract to be compliant with the aforementioned ADMs. On 12-Jan 2011 a follow on DAB approved procurement of brigades 2 & 3. This budget justification reflects the latest OSD DAB for Increment 1 (E-IBCT) program and the follow-on IBCT modernization program as approved in RMD XXXX.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Termination	Various	The Boeing Company:Various	-	-		-		-		-	Continuing	Continuing	0.000
Contract Special Termination Costs	Various	The Boeing Company:Various	-	-		90.000		-		90.000	Continuing	Continuing	0.000
GOVERNMENT BCT TECHNICAL INTEGRATION SUPPORT AND FACILITY (WSMR)	Allot	VARIOUS:VARIOUS	-	-		7.500		-		7.500	Continuing	Continuing	0.000
GOVERNMENT MGT OF BCT NETWORK INTEGRATION, MODELING AND SIMULATION AND TEST AND EVALUATION	Allot	VARIOUS:VARIOUS	-	-		25.000		-		25.000	Continuing	Continuing	0.000
SOS ENGINEERING AND ANALYSIS - GOVERNMENT MANAGEMENT	Allot	VARIOUS:VARIOUS	-	-		17.500		-		17.500	Continuing	Continuing	0.000
INTEGRATED BASE DEFENSE	Allot	VARIOUS:VARIOUS	-	-		5.000		-		5.000	Continuing	Continuing	0.000
CP 13/14 AND BEYOND MISSION ANALYSIS	Allot	VARIOUS:VARIOUS	-	-		10.000		-		10.000	Continuing	Continuing	0.000
COMMON OPERATING ENVIRONMENT - GOVERNMENT MANAGEMENT	Allot	VARIOUS:VARIOUS	-	-		7.500		-		7.500	Continuing	Continuing	0.000
BRIGADE SET FIELDING PLANNING AND COORDINATION	Allot	VARIOUS:VARIOUS	-	-		7.500		-		7.500	Continuing	Continuing	0.000
VICTORY ARCHITECTURE AND STANDARDS	Allot	VARIOUS:VARIOUS	-	-		5.000		-		5.000	Continuing	Continuing	0.000
GOVERNMENT STAFFING TO EXECUTE TERMINATION CONTRACT NEGOTIATIONS	Allot	PEO I:WARREN, MI	-	-		8.872		-		8.872	Continuing	Continuing	0.000
		Subtotal	-	-		183.872		-		183.872			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor SEPM	Various	The Boeing Company:Various	-	104.248		-		-		-	Continuing	Continuing	0.000
Contractor System Requirements and Integration	Various	The Boeing Company:Various	-	37.219		-		-		-	Continuing	Continuing	0.000
Contractor Training Products	Various	The Boeing Company:Various	-	25.856		-		-		-	Continuing	Continuing	0.000
Contract Fee	Various	The Boeing Company:Various	-	22.646		-		-		-	Continuing	Continuing	0.000
Contractor Supportability/Log	Various	The Boeing Company:Various	-	22.192		-		-		-	Continuing	Continuing	0.000
BCT TECHNICAL INTEGRATION SUPPORT AND FACILITY (WSMR)	TBD	VARIOUS:Various	-	-		40.000		-		40.000	Continuing	Continuing	0.000
BCT TECHNICAL INTEGRATON SUPPORT AND FACILITY	TBD	VARIOUS:Various	-	-		30.000		-		30.000	Continuing	Continuing	0.000
SOS ENGINEERING AND ANALYSIS - BCT ARCHITECTURE MODELING AND NETWORK ANALYSIS	TBD	APG:Aberdeen, MD	-	-		15.000		-		15.000	Continuing	Continuing	0.000
COMMON OPERATING ENVIRONMENT - SOFTWARE CODE DEVELOPMENT	TBD	VARIOUS:VARIOUS	-	-		15.000		-		15.000	Continuing	Continuing	0.000
COMMON OPERATING ENVIRONMENT - FACILITIES AND INFRASTRUCTURE	TBD	VARIOUS:VARIOUS	-	-		10.000		-		10.000	Continuing	Continuing	0.000
COMMON OPERATING ENVIRONMENT - FSR INTEGRATION SUPPORT	TBD	VARIOUS:VARIOUS	-	-		10.000		-		10.000	Continuing	Continuing	0.000
		Subtotal	-	212.161		120.000		-		120.000			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government SEPM	Allot	PEO-I:Various	-	96.113		-		-		-	Continuing	Continuing	0.000
Government GFX	Allot	PEO-I:Various	-	17.342		-		-		-	Continuing	Continuing	0.000
Government A-Kit Development	Allot	PEO-I:Various	-	5.000		-		-		-	Continuing	Continuing	0.000
Government Other	Allot	PEO-I:Various	-	68.644		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	187.099		-		-		-			0.000

Remarks

FY12: All Platform specific Government Engineering and PM costs are included in the appropriate Platform Program Element.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor - SoS Test	Various	The Boeing Company:Various	-	36.938		-		-		-	Continuing	Continuing	0.000
Government STE and M&S	Allot	PEO-I:Various	-	123.513		-		-		-	Continuing	Continuing	0.000
BCT Integration Exercises	Allot	PEO-I:Various	-	9.000		-		-		-	Continuing	Continuing	0.000
BCT NETWORK INTEGRATION, MODELING AND SIMULATION AND TEST AND EVALUATION	TBD	VARIOUS:FT BLISS, TX	-	-		80.000		-		80.000	Continuing	Continuing	0.000
		Subtotal	-	169.451		80.000		-		80.000			0.000

Remarks

FY12: All Platform specific Test and Evaluation costs are included in the appropriate Platform Program Element.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	568.711		383.872		-		383.872			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	PROJECT FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	**PROJECT** FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

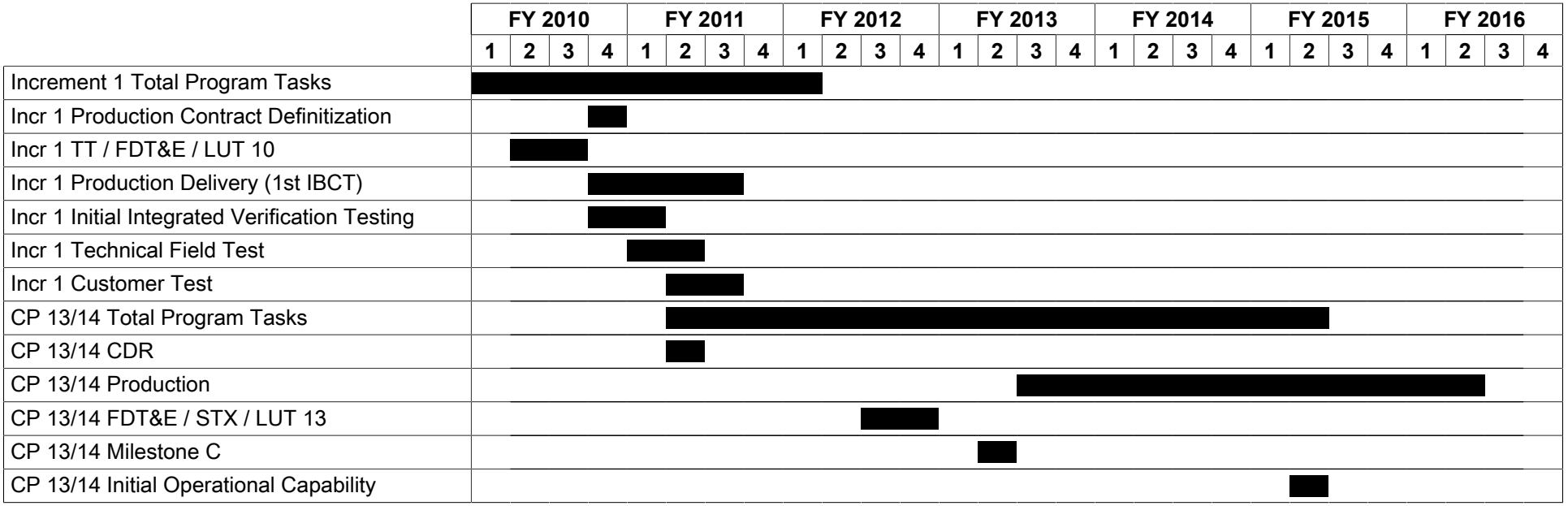

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604661A: *FCS Systems of Systems Engr & Program Mgmt*	**PROJECT** FC2: *BCT SYSTEM OF SYSTEMS ENGR & PROGRAM MGMT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Increment 1 Total Program Tasks	1	2010	1	2012
Incr 1 Production Contract Definitization	4	2010	4	2010
Incr 1 TT / FDT&E / LUT 10	2	2010	3	2010
Incr 1 Production Delivery (1st IBCT)	4	2010	3	2011
Incr 1 Initial Integrated Verification Testing	4	2010	1	2011
Incr 1 Technical Field Test	1	2011	2	2011
Incr 1 Customer Test	2	2011	3	2011
CP 13/14 Total Program Tasks	2	2011	2	2015
CP 13/14 CDR	2	2011	2	2011
CP 13/14 Production	3	2013	2	2016
CP 13/14 FDT&E / STX / LUT 13	3	2012	4	2012
CP 13/14 Milestone C	2	2013	2	2013
CP 13/14 Initial Operational Capability	2	2015	2	2015

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604662A: *FCS Reconnaissance (UAV) Platforms*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	92.444	50.304	-	-	-	-	-	-	-	0.000	142.748
FC3: *BCT RECONNAISSANCE (UAV) PLATFORMS*	92.444	50.304	-	-	-	-	-	-	-	0.000	142.748

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The Class IV Program was terminated in January 2010. The Class I Program will be terminated by April 2011 in accordance with the DAB review on 12 January 2011 and the impending ADM.

The XM 156 Class I system for System Development and Demonstration (SDD) provides the dismounted soldier Reconnaissance, Surveillance, and Target Acquisition (RSTA) and has the ability to hover and stare for military operations on rural and urban terrain. The Class I provides imagery data in order to recognize personnel and provide targeting information to the BCT Modernization network during day and night operations up to 1000 feet above ground level.

The Army has incorporated an expedited Class I into IBCT Increment 1 (IBCT INC 1) to provide additional Intelligence, Surveillance and Reconnaissance (ISR) capability to the soldier starting in 2011.

The Class I IBCT Increment 1 capability will consist of a 20 pound vehicle with a Commercial Off the Shelf (COTS) Electro Optical (EO) sensor and a COTS Infra-Red (IR) sensor and a gasoline-based propulsion system.
The Class I solution for the CP 13/14 capability will consist of a 41 pound vehicle featuring an Electro Optical Infra-Red Laser Designator Laser Range Finder (EO/IR/LD/LRF) sensor and a heavy fuel based propulsion system. To meet BCT INC 1 CPD objective requirements, the class I platform requires laser target designation capability which will be incorporated in CP 13/14. In order for the Class I to carry the laser designation and range finding capability, the airframe and propulsion system must be upgraded to accommodate the additional payload capability. The CP 13/14 air vehicle operates in complex urban and rural terrains with a vertical take-off and landing capability. The Class I system is carried in two custom Modular Lightweight Load-carrying Equipment (MOLLEs) and is air droppable with the soldier.

The XM157 Class IV UAV has a range and endurance appropriate for the brigade mission. The Class IV supports the Brigade Combat Team (BCT) Commander with communications relay, long endurance persistent stare, and wide area surveillance encompassing a 75km radius. Unique missions include Wide Band Communications Relay and minefield detection. Additionally, Class IV has the payloads to enhance the Reconnaissance, Surveillance, and Target Acquisition (RSTA) capability by cross-cueing multiple sensors. It operates at survivable altitudes from a standoff range conducted both day, night, and during adverse weather. Based on recent determination by the Army the Class IV program was terminated in January of 2010. Future incremental development will incorporate Class 4 type requirements to conduct both the RSTA and Communications relay mission.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604662A: *FCS Reconnaissance (UAV) Platforms*

The Government support costs includes funding for government personnel labor, travel, training, supplies, other support costs (support contractors, Automated Data Processing (ADP), communications, supplies, and equipment), and platform unique testing.

As result of the DAB on 12 January 2011, it is anticipated that a ADM will officially terminate the Class I program by April 2011 and all remaining FY11 funding will be required to fund special termination costs for Class I, Unmanned Aerial Vehicle.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	75.107	50.304	12.058	-	12.058
Current President's Budget	92.444	50.304	-	-	-
Total Adjustments	17.337	-	-12.058	-	-12.058
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	17.337	-	-	-	-
• Other Adjustments 2	-	-	-12.058	-	-12.058

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604662A: *FCS Reconnaissance (UAV) Platforms*	PROJECT FC3: *BCT RECONNAISSANCE (UAV) PLATFORMS*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
FC3: *BCT RECONNAISSANCE (UAV) PLATFORMS*	92.444	50.304	-	-	-	-	-	-	-	0.000	142.748
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Class IV Program was terminated in January 2010.

The XM 156 Class I system for System Development and Demonstration (SDD) provides the dismounted soldier Reconnaissance, Surveillance, and Target Acquisition (RSTA) and has the ability to hover and stare for military operations on rural and urban terrain. The Class I provides imagery data in order to recognize personnel and provide targeting information to the BCT Modernization network during day and night operations up to 1000 feet above ground level.

The Army has incorporated an expedited Class I into IBCT Increment 1 (IBCT INC 1) to provide additional Intelligence, Surveillance and Reconnaissance (ISR) capability to the soldier starting in 2011.

The Class I IBCT Increment 1 capability will consist of a 20 pound vehicle with a Commercial Off the Shelf (COTS) Electro Optical (EO) sensor and a COTS Infra-Red (IR) sensor and a gasoline-based propulsion system.

The Class I solution for the CP 13/14 capability will consist of a 41 pound vehicle featuring an Electro Optical Infra-Red Laser Designator Laser Range Finder (EO/IR/LD/LRF) sensor and a heavy fuel based propulsion system. To meet BCT INC 1 CPD objective requirements, the class I platform requires laser target designation capability which will be incorporated in CP 13/14. In order for the Class I to carry the laser designation and range finding capability, the airframe and propulsion system must be upgraded to accommodate the additional payload capability. The CP 13/14 air vehicle operates in complex urban and rural terrains with a vertical take-off and landing capability. The Class I system is carried in two custom Modular Lightweight Load-carrying Equipment (MOLLEs) and is air droppable with the soldier.

The XM157 Class IV UAV has a range and endurance appropriate for the brigade mission. The Class IV supports the Brigade Combat Team (BCT) Commander with communications relay, long endurance persistent stare, and wide area surveillance encompassing a 75km radius. Unique missions include Wide Band Communications Relay and minefield detection. Additionally, Class IV has the payloads to enhance the Reconnaissance, Surveillance, and Target Acquisition (RSTA) capability by cross-cueing multiple sensors. It operates at survivable altitudes from a standoff range conducted both day, night, and during adverse weather. Based on recent determination by the Army the Class IV program was terminated in January of 2010. Future incremental development will incorporate Class 4 type requirements to conduct both the RSTA and Communications relay mission.

The Government support costs includes funding for government personnel labor, travel, training, supplies, other support costs (support contractors, Automated Data Processing (ADP), communications, supplies, and equipment), and platform unique testing.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604662A: *FCS Reconnaissance (UAV) Platforms*	PROJECT FC3: *BCT RECONNAISSANCE (UAV) PLATFORMS*

As result of the DAB on 12 January 2011, it is anticipated that a ADM will officially terminate the Class I program by April 2011 and all remaining FY11 funding will be required to fund special termination costs for Class I, Unmanned Aerial Vehicle.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Contractor: UAV Class I - IBCT Increment 1	32.294	-	-
Articles:	0		
Description: Funding is provided for the following effort			
FY 2010 Accomplishments: Achieved a successful MS C decision for IBCT INC 1 in December 2009. Refurbished 11 existing prototypes required to support Limited User Testing (LUT) in FY10 And built 7 additional prototypes to support Integrated Qualification Testing (IQT). Conducted and supported Class I IQT in 3Q FY10 and supported SoS LUT in 4Q FY10.			
Title: Government PMO/BMO/CIO Increment 1	8.589	4.573	-
Articles:	0	0	
Description: Funding is provided for the following effort			
FY 2010 Accomplishments: Includes government personnel labor, travel, training, supplies, other support costs (support contractors, Automated Data Processing (ADP), communications, supplies, and equipment), and platform unique testing.			
FY 2011 Plans: Includes government personnel labor, travel, training, supplies, other support costs (support contractors, Automated Data Processing (ADP), communications, supplies, and equipment), and platform unique testing.			
Title: Contractor: UAV Class I - CP 13/14	22.679	25.710	-
Articles:	0	0	
Description: Funding is provided for the following effort			
FY 2010 Accomplishments: Conducted design and analysis to support Class I critical design review 4Q FY10. A total number of 500 drawings are estimated to be required for the Class I system, where 400 drawings are estimated to be released by Critical Design Review (CDR). Continue development and weight reduction efforts on the Heavy Fuel Engine and Airframe. Finalize Airworthiness Qualification Specifications. Start Integration of brass board prototype EO/IR/LD/LRF Sensor on the Air Vehicle.			
FY 2011 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604662A: *FCS Reconnaissance (UAV) Platforms*	PROJECT FC3: *BCT RECONNAISSANCE (UAV) PLATFORMS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue Class I to support software development for Optical Infra-Red Laser Designator Laser Range Finder (EO/IR/LD/LRF) sensor control and air vehicle flight controls. Integrate and assemble air frame and heavy fuel engine to support risk reduction testing of Engineering Development Assets (EDAs) in order to meet CPD requirements. Perform test-fix-test in the lab for EO/IR/ LD/LRF sensor control and air vehicle flight control software. Deliver 4 engines and airframes for EDAs, where the EDAs are to be used to conduct initial Class I risk reduction testing and early environmental risk reduction testing. Conduct and support early risk reduction flight testing and environmental testing. Provide engineering support for integration activities for air vehicle equipment for IQT. (FY 11 current funding requirement is $24,142 based upon approved 12 January 2011 OSD DAB and anticipated ADM terminating the UAV Class I in 2nd Quarter FY 11.)			
Title: UAV Class I - IBCT Special Termination Costs ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2011 Plans:*** Costs are paid to the contractor and subcontractors as per FAR 31.205 for; severance pay, reasonable costs continuing after termination, settlement of expenses, and the costs to return field service personnel from remote or liaison sites. (FY 11 current funding requirement is $26,162 based upon 12 January 2011 OSD DAB and anticipated ADM terminating the UAV Class I in 2nd Quarter FY 11.)	-	20.021 0	-
Title: Contractor: UAV Class IV - CP 13/14 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Continued to support design changes to remaining Class IV 94 drawings. Supported through 1Q FY10 Engineering activities to include NG SIL integration of the Integrated Computer System, JTRS radios, and BC 2F software. Northrop Grumman Corporation Phase II Integration activities (integrate avionics and electronics) began in FY10. Began planning efforts to support CP 13/14. Continued through 1Q FY10 hardware and software system integration, including completion of the BC2F software IV&V at the NG UMS System Integration Lab (SIL) for purposes of Airworthiness Certification. Based on the Army?s direction, Class IV activities were terminated in Jan 2010. This cost element included all un-cancelled commitments and the Army transferring existing assets to the Navy's Firescout program. Program terminated in January 2010.	11.827 0	-	-
Title: Contractor: UAV Class IV - IBCT Special Termination costs ***Articles:***	10.236 0	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604662A: *FCS Reconnaissance (UAV) Platforms*	PROJECT FC3: *BCT RECONNAISSANCE (UAV) PLATFORMS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Costs are paid to the contractor and subcontractors as per FAR 31.205 for severance pay, reasonable costs continuing after termination, settlement expenses, and return of field service representatives from remote or liaison sites.			
Title: Congressional Earmark	6.765	-	-
Articles:	0		
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Congressional Earmark was returned to the Army based on program termination.			
Title: Government GFX	0.054	-	-
Articles:	0		
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Conducted multiple-stage studies to reduce acoustic noise level for Class I in order to meet objective requirements.			
Accomplishments/Planned Programs Subtotals	92.444	50.304	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 0604646A: *Non Line of Sight - Launch System*	88.205	81.247								0.000	169.452
• 0604660A: *FCS Manned Grd Vehicles & Common Grd Vehicle Components*	231.103									0.000	231.103
• 0604661A: *FCS System of Systems Engr & Program Management*	847.011	568.711	383.872		383.872		518.188	648.502	352.069	0.000	3,808.398
• 0604663A: *FCS Unmanned Ground Vehicles*	122.418	249.948	143.840		143.840		106.480	131.880	32.009	0.000	911.047

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604662A: *FCS Reconnaissance (UAV) Platforms*	PROJECT FC3: *BCT RECONNAISSANCE (UAV) PLATFORMS*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 0604664A: *FCS Unattended Ground Sensors*	39.664		0.499		0.499					0.000	40.163
• 0604665A: *FCS Sustainment & Training R&D*	685.524	610.389					251.761	254.232	181.558	0.000	2,187.185
• WTCV G86200: *FCS Spin Out Program*	210.909									0.000	210.909
• ACFT A00015: *BCT Unmanned Aerial Veh (UAVs) Incr 1*		44.206								0.000	44.206
• OPA B00001: *BCT Unattended Ground Sensor*		29.718								0.000	29.718
• OPA B00002: *BCT Network*		176.543								0.000	187.068
• OPA B00003: *BCT Network CP 13/14*							229.528	187.955	179.653	0.000	768.167
• OPA F00001: *BCT Unmanned Ground Vehicle*		20.046	24.805		24.805					0.000	48.096
• OPA F00002: *BCT Unmanned Ground Vehicle Incr 2*			11.924		11.924		422.192	834.171	696.603	0.000	2,414.904
• OPA G80001: *BCT Training/ Logistics/Management*		61.581	149.308		149.308		49.792	28.259		0.000	435.142
• OPA G00002: *BCT Training/ Logistics/Management CP 13/14*			57.103		57.103		441.250	347.466	273.354	0.000	1,308.265

D. Acquisition Strategy

A 23 June 2009 Acquisition Decision Memorandum (ADM) directed the cancellation of the FCS (BCT) acquisition program. It also instructed the Army to transition to an Army modernization plan consisting of a number of integrated acquisition programs. At that time, the SO E-IBCT was designated a pre-MDAP, with a Milestone C decision scheduled for the first quarter FY10. A follow-on ADM was issued 9 July 2009. In it, the Army was directed to continue efforts to improve the brigades beyond the Early Infantry Brigade Combat Team acquisition until a standalone program(s) is defined later in 2010. An Army BCT Modernization Defense Acquisition Board (DAB) was then held on October 16, 2009 to review the Army's plans for the post-Future Combat Systems efforts and confirm the Army brigade modernization acquisition plans were consistent with the Secretary of Defense's guidance. An ADM issued after this DAB stated: "The approach, for Increment 1 (Early-Infantry Brigade Combat Team (E-IBCT)) and the Ground Combat Vehicle (GCV) effort, is consistent with the Secretary's guidance and each is being positioned for more in-depth review and acquisition decisions later in 2009." The Increment 1 E-IBCT Milestone C took place 22 December 2009 and was approved in an ADM dated 24 December 2009. The Program Executive Office-Integration (PEO-I) has modified the existing contract to be compliant with the aforementioned ADMs. On 12-Jan 2011

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604662A: *FCS Reconnaissance (UAV) Platforms*	PROJECT FC3: *BCT RECONNAISSANCE (UAV) PLATFORMS*

a follow on DAB approved procurement of brigades 2 & 3. This budget justification reflects the latest OSD DAB for Increment 1 (E-IBCT) program and the follow-on IBCT modernization program as approved in RMD XXX.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604662A: *FCS Reconnaissance (UAV) Platforms*	PROJECT FC3: *BCT RECONNAISSANCE (UAV) PLATFORMS*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Class IV Special Termination Costs	Various	The Boeing Company:TBD	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	-		-		-		-			0.000

Remarks

All Management Services costs for this project are included in 0604661 FC2 SoS Engineering and Program Management project.

1. Subcontractor: Northrup Grumman Unmanned Systems - San Diego, CA

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Class I Remark 4	Various	Boeing Co.:TBD	-	50.304		-		-		-	Continuing	Continuing	0.000
Class IV	Various	Boeing Co.:TBD	-	-		-		-		-	Continuing	Continuing	Continuing
MQ-8B FIRESCOUT	TBD	TBD:TBD	-	-		-		-		-	Continuing	Continuing	Continuing
Product Development - Digital Data Link Capability	Various	Aerovironment:TBD	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	50.304		-		-		-			

Remarks

Remark 1: Subcontractor: Honeywell International, Inc - Albuquerque, New Mexico
Remark 2: Subcontractor: Northrop Grumman Unmanned Systems - San Diego, CA
Remark 3: With cancellation of Class IV, the program cannot utilize the MQ-8B Firescout earmarked funding provided by Congress.
Remark 4: The FY10 funding does not include the $19.5M which was approved by congress in Reprogramming Action 10-11 PA

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR	TBD	TBD:TBD	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	-		-		-		-			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604662A: *FCS Reconnaissance (UAV) Platforms*	PROJECT FC3: *BCT RECONNAISSANCE (UAV) PLATFORMS*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	50.304		-		-		-			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604662A: *FCS Reconnaissance (UAV) Platforms*	**PROJECT** FC3: *BCT RECONNAISSANCE (UAV) PLATFORMS*

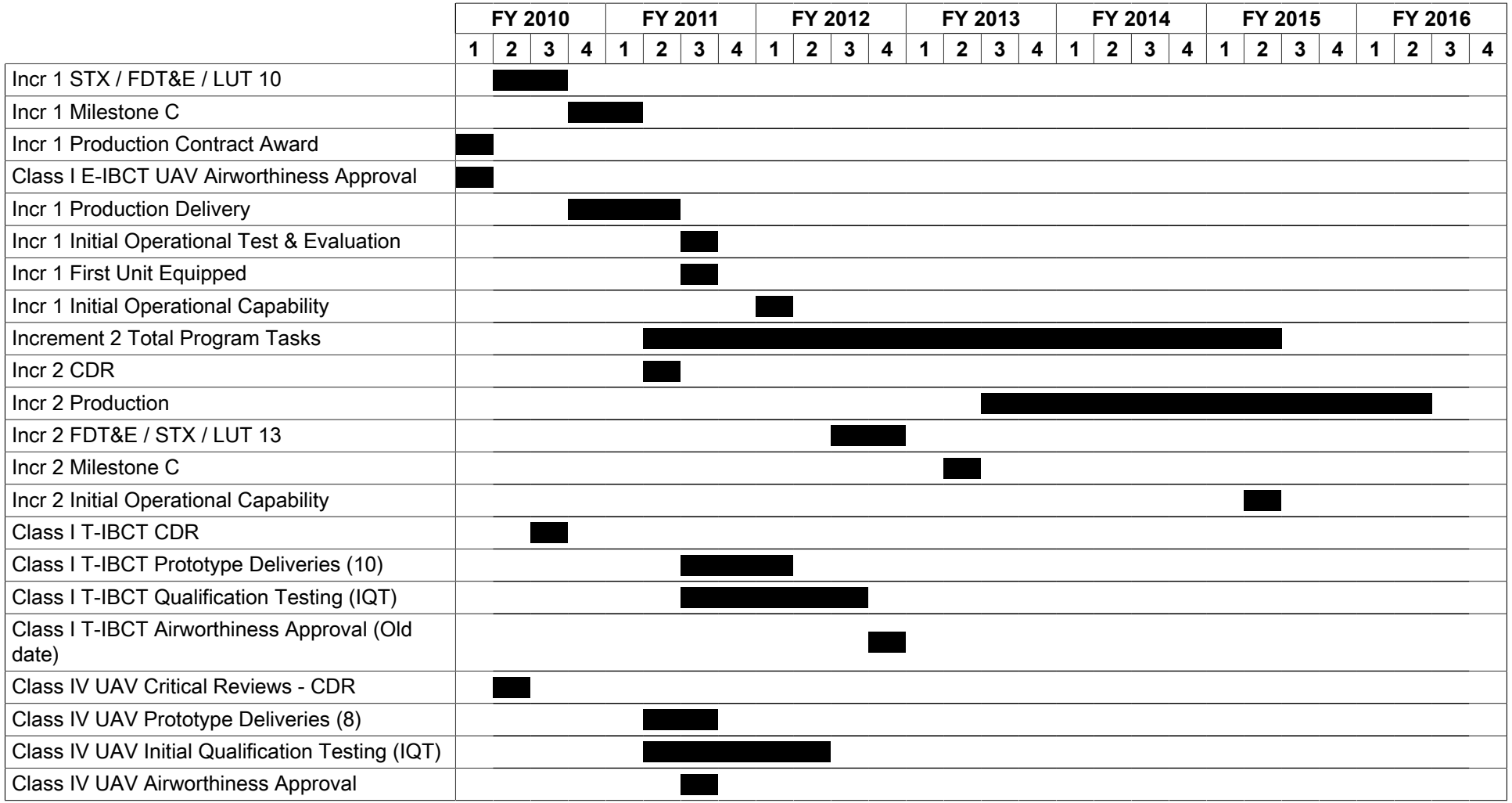

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604662A: *FCS Reconnaissance (UAV) Platforms*	**PROJECT** FC3: *BCT RECONNAISSANCE (UAV) PLATFORMS*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Incr 1 STX / FDT&E / LUT 10	2	2010	3	2010
Incr 1 Milestone C	4	2010	1	2011
Incr 1 Production Contract Award	1	2010	1	2010
Class I E-IBCT UAV Airworthiness Approval	1	2010	1	2010
Incr 1 Production Delivery	4	2010	2	2011
Incr 1 Initial Operational Test & Evaluation	3	2011	3	2011
Incr 1 First Unit Equipped	3	2011	3	2011
Incr 1 Initial Operational Capability	1	2012	1	2012
Increment 2 Total Program Tasks	2	2011	2	2015
Incr 2 CDR	2	2011	2	2011
Incr 2 Production	3	2013	2	2016
Incr 2 FDT&E / STX / LUT 13	3	2012	4	2012
Incr 2 Milestone C	2	2013	2	2013
Incr 2 Initial Operational Capability	2	2015	2	2015
Class I T-IBCT CDR	3	2010	3	2010
Class I T-IBCT Prototype Deliveries (10)	3	2011	1	2012
Class I T-IBCT Qualification Testing (IQT)	3	2011	3	2012
Class I T-IBCT Airworthiness Approval (Old date)	4	2012	4	2012
Class IV UAV Critical Reviews - CDR	2	2010	2	2010
Class IV UAV Prototype Deliveries (8)	2	2011	3	2011
Class IV UAV Initial Qualification Testing (IQT)	2	2011	2	2012
Class IV UAV Airworthiness Approval	3	2011	3	2011

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604663A: *FCS Unmanned Ground Vehicles*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	122.418	249.948	143.840	-	143.840	124.472	106.480	131.880	32.009	Continuing	Continuing
FC4: *BCT UNMANNED GROUND VEHICLES*	122.418	249.948	143.840	-	143.840	124.472	106.480	131.880	32.009	Continuing	Continuing

Note

Change Summary Explanation: Funding: FY12: UGV program was restructured for emerging Army requirements - MM UGV

A. Mission Description and Budget Item Justification

There are two programs covered by the Unmanned Ground Vehicle (UGV) Program Element: The Multi-Mission Unmanned Ground Vehicle (MM UGV) platforms (formerly the Multi-Function Utility/Logistics and Equipment Vehicle (MULE)), the Small Unmanned Ground Vehicle (SUGV) platform.

Small Unmanned Ground Vehicle (SUGV), designated as the XM-1216, is a lightweight (32 lbs), man-portable, DC powered UGV capable of conducting Military Operations in Urban Terrain (MOUT) to include tunnels, sewers, and caves. The SUGV provides an unmanned capability for those missions that are manpower intensive or high-risk such as Urban Intelligence, Surveillance, and Reconnaissance (ISR) missions in a MOUT environment, investigating Improvised Explosive Devices and Chemical/Toxic Materials reconnaissance missions without exposing soldiers directly to the hazard. The SUGV will be used to obtain information on situational awareness at the squad level.

SUGV IBCT Increment 1 (Bde 1-6): The IBCT INC 1 SUGV is based on the Capability Production Document (CPD) threshold requirements. The SUGV IBCT INC 1 features a lightweight highly mobile SUGV platform with improved and tested reliability and an integrated Commercial off the Shelf (COTS) sensor head and radio. In early FY10 the SUGV INC 1 platform underwent an Integrated Qualification Test (IQT) at Aberdeen Test Center (ATC) that provided the basis for many of the component reliability improvements that have been incorporated and validated in the FY11 IQT. Enhancements included improved seals on the drive motors, design changes to the drive motor themselves, EMI improvements to reduce the emissions and susceptibility of the SUGV platform and operator control unit enhancements. The Mean Time Between System Aborts (MTBSA) value improved from 9.7 hrs in FY09 to 178 hrs in FY10 Limited User Test (LUT). These enhancements were incorporated into the Bde 1 SUGV INC 1 units being delivered to Ft. Bliss, TX in FY11.

SUGV Planned Product Improvements: The SUGV configuration for FY13 procurement/FY14 fielding is based on the SUGV CPD objective requirements. It will weigh 32 pounds and is capable of carrying up to 4 lbs of payload weight. The SUGV will have the following capabilities: a hardened militarized Electro Optical/Infrared (EO/IR) sensor to meet stringent day & night detection of enemy personnel & systems, an NSA compliant radio, the capability to provide grid location of the enemy, a tether payload, a manipulator arm payload, Chemical, Radiological, Nuclear (CRN).

Multi-Mission Unmanned Ground Vehicle (MM UGV): The MM UGV program is an adaptation of new emerging requirements for a 3.5-ton UGV that will support dismounted and mounted operations. This program takes advantage of development already conducted for the previous Multi-Function Utility/Logistics and Equipment Vehicle (MULE), program that consisted of three major components: Common Mobility Platform (CMP), Autonomous Navigation System (ANS), and a Lethal Mission

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604663A: *FCS Unmanned Ground Vehicles*

Equipment Package (MEP). The MULE Program will transition to the MM UGV Program of Record and Acquisition Program Baseline upon MDA approval. In Nov 2010, the AAE & OSD OIPT directed the Army to continue current CMP & ANS design efforts under the current contract. After approval of the MM UGV CDD, a competitive contracting process, utilizing the TDP developed from the current effort, will be initiated for the follow-on MM UGV integrated platform development EMD Contract. The current MULE program meets the base platform mobility requirements and lethality requirements of the draft MM UGV CDD. The current draft CDD is being staffed, estimated approval is 4QFY11. The MM UGV will be CH-47 transportable and designed to maintain hard surface road-speeds of up to 65 KPH. The Counter-Improvised Explosive Device (C-IED) variant will provide the maneuver company with the capability to detect, mark, and report IEDs. This variant will deploy an array of sensors to enhance IED detection and a manipulator arm to probe suspected locations. The C-IED platform will mark and report the IED allowing follow-on units to bypass the IED. The Lethal variant includes two weapon systems: the M240 Machine Gun & two Javelin missiles and will employ a target acquisition package to include aided target recognition. This integrated package will support the dismounted infantry and mounted operations providing the capability to locate and destroy enemy platforms and positions.

Autonomous Navigation System (ANS): ANS, designated as XM-155, as a set of mission sensors and a computational package that will be integrated on the CMP to provide robotic semiautonomous capability. The ANS System will meet the requirements defined in the draft MM UGV CDD for mobility and safety of a UGV platform. The ANS primary system components are: Laser Radar (LADAR) Imaging Perception Module (LIPM), Imaging Perception Module (IPM), Millimeter Wave Radar (MMWR), Global Positioning System (GPS)/Inert

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	124.962	249.948	98.737	-	98.737
Current President's Budget	122.418	249.948	143.840	-	143.840
Total Adjustments	-2.544	-	45.103	-	45.103
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.544	-			
• Adjustments to Budget Years	-	-	45.103	-	45.103

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604663A: *FCS Unmanned Ground Vehicles*	PROJECT FC4: *BCT UNMANNED GROUND VEHICLES*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
FC4: *BCT UNMANNED GROUND VEHICLES*	122.418	249.948	143.840	-	143.840	124.472	106.480	131.880	32.009	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

There are two programs covered by the Unmanned Ground Vehicle (UGV) Program Element: The Multi-Mission Unmanned Ground Vehicle (MM UGV) platforms (formerly the Multi-Function Utility/Logistics and Equipment Vehicle (MULE)), the Small Unmanned Ground Vehicle (SUGV) platform.

Small Unmanned Ground Vehicle (SUGV), designated as the XM-1216, is a lightweight (32 lbs), man-portable, DC powered UGV capable of conducting Military Operations in Urban Terrain (MOUT) to include tunnels, sewers, and caves. The SUGV provides an unmanned capability for those missions that are manpower intensive or high-risk such as Urban Intelligence, Surveillance, and Reconnaissance (ISR) missions in a MOUT environment, investigating Improvised Explosive Devices and Chemical/Toxic Materials reconnaissance missions without exposing soldiers directly to the hazard. The SUGV will be used to obtain information on situational awareness at the squad level.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604663A: *FCS Unmanned Ground Vehicles*	PROJECT FC4: *BCT UNMANNED GROUND VEHICLES*

Contract. The current MULE program meets the base platform mobility requirements and lethality requirements of the draft MM UGV CDD. The current draft CDD is being staffed, estimated approval is 4QFY11. The MM UGV will be CH-47 transportable and designed to maintain hard surface road-speeds of up to 65 KPH. The Counter-Improvised Explosive Device (C-IED) variant will provide the maneuver company with the capability to detect, mark, and report IEDs. This variant will deploy an array of sensors to enhance IED detection and a manipulator arm to probe suspected locations. The C-IED platform will mark and report the IED allowing follow-on units to bypass the IED. The Lethal variant includes two weapon systems: the M240 Machine Gun & two Javelin missiles and will employ a target acquisition package to include aided target recognition. This integrated package will support the dismounted infantry and mounted operations providing the capability to locate and destroy enemy platforms and positions.

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The Government support costs includes funding for government personnel labor, travel, training, supplies, other support costs (support contractors, Automated Data Processing (ADP), communications, supplies, and equipment), and platform unique testing.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: SUGV FY10 IBCT Increment 1	18.440	-	-
Articles:	0		
Description: Funding is provided for the following effort			
FY 2010 Accomplishments: SUGV FY10 IBCT Increment 1 - Successfully completed MS C for the IBCT INC 1 December 2009. Refurbished, after completion of FY09 Limited User Test (LUT), the 15 Spinout Prototype units to support the FY10 LUT. Refurbishment included upgrades to software, replacement of components in response to design changes and test/checkout to ensure the units were functional. The 15 Spinout units were used to support soldier training, and platform integration in FY10. Characterization testing was conducted on Three (3) IBCT INC 1 units at Aberdeen Proving Ground during FY10. The program built six additional Increment 1 units to support LUT and Integrated Qualification Test (IQT) testing in FY10. IBCT INC 1 utilized Build 1 software and Ruggedized			

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APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604663A: *FCS Unmanned Ground Vehicles*	PROJECT FC4: *BCT UNMANNED GROUND VEHICLES*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Personal Data Assistants (PDAs); the SUGV controller provided images to an external port that were captured by the PDA and sent to the external network. SUGV units supported testing of alternative radio solutions in 2Q10.			
Title: SUGV Product Improvement	7.662	9.429	21.000
Articles:	0	0	
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Developed and matured SUGV Product Improvement design of tether spooler payload, manipulator arm, militarized head and integration with the Electric Optical/Infrared (EO/IR) sensor and Handheld Manpack and Small form fit (HMS) radio. Prepared for Critical Design Review 1Q11. ***FY 2011 Plans:*** Conduct SUGV Critical Design Review 1QFY11. Complete the engineering tasks and analysis from the SUGV CDR design review to enable the contractor to proceed to the build of the SUGV platforms for CP 13/14 IQT. Complete integration, build and checkout of the EO/IR sensor. Handheld Manpack & Small form fit (HMS) radio, and payloads. Begin assessment of an NSA approved radio, improved detection capability for the EO/IR sensor and integration of the SUGV with the Common Controller. Conduct an early assessment of the SUGV, HMS radio, SRW waveform and common Controller to support the development and build of SUGV prototypes for IQT/LUT in FY12. Continue work and development of payloads to support IQT: Tether, manipulator arm, CBRN, and Embedded training. Build six SUGVprototypes for delivery in FY12. ***FY 2012 Plans:*** Complete the build, integration and delivery of six prototypes and payloads in the September 2011-February 2012 timeframe. Complete government IQT testing in the March-August 2012 timeframe. TFT/FDTE/LUT will be conducted in the September-December 2012 timeframe leading up to a Milestone C in April 2013. This effort will integrate and test SUGV product improvements that utilize a point-to-point datalink, provide increased ISR capability with the integrated militarized EO-IR head, and also provide increased functionality in the form of a modular payload system that includes the fiber optic tether datalink capability, manipulator arm, CBRN, and ETESS.			
Title: SUGV Sensor Hardware	-	4.783	-
Articles:		0	
Description: Funding is provided for the following effort ***FY 2011 Plans:***			

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APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604663A: *FCS Unmanned Ground Vehicles*	PROJECT FC4: *BCT UNMANNED GROUND VEHICLES*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Build, integration and checkout of seven (7) C4 sensors packages to support SUGV Platform integration.			
Title: MM UGV (MULTI-MISSION UNMANNED GROUND VEHICLE) (FORMER ARV A(L))	57.882	65.294	46.000
Articles:	0	0	
Description: Funding is provided for the following effort			
FY 2010 Accomplishments: Completed subsystems Critical Design Review (CDRs) for PPS, ITMS, Suspension and Chassis. Continued work to complete vehicle final assembly design, top level drawings and any remaining detail part drawings. Completed Engineering and Manufacturing Readiness Level (EMRL) 2 assessments and updated Industrial Capabilities Assessment (ICA) to support CDR. Completed design of BAE Power and Propulsion System, and MillenWorks suspension. Began planning for software integration and testing of C4ISR, ANS and CC software with Hardware in the Loop (HWIL). Completed Phase 1 Software Build Definition Checkpoint 1Q10. Phase 1 software functionality included vehicle control functionality such as power up, states and modes, manual and tether vehicle control.			
FY 2011 Plans: Conduct Critical Design Review for the ARV-A(L). Begin Long Lead Procurement of prototype hardware and assembly of ARV-A(L) platforms Continue the engineering effort for design and integration of all sensors payloads, battle command software, network communications and Common Controller for ARV-A(L) to support design reviews. Verify interfaces and integration of all allocated subsystems to the ARV-A(L): JTRS Radio/Waveform, ICS, Turret, M240 ROK, and Javelin. Receive initial subsystem deliverables to complete integration of BAE Power and Propulsion System, Advanced Integrated Systems M240 Remote Operating Kit, ITMS and MillenWorks suspension that will facilitate Acceptance Test Plans and the testing of detail parts and Line Replaceable Units that enables subsystem qualification testing. Continue development of operational and simulation software including the Vehicle Control Services (VCS), Mobility Control Services (MCS) and Power & Propulsion Services (PPS). Begin Modeling and Simulation integration with the ICS and Battle Command software to prepare for efficient integration of hardware and software on the ARV-A(L) Conduct CP 13/14 Phase 1 and Phase 2 Software Architecture Design and Internal and External Interface Design. Conduct CP 13/14 Software Phase 2 Build planning and allocation to support the ARV-A(L) chassis and ARV-A(L) Mission Equipment Packages to demonstrate functionality of payloads: M240, Communications Systems, Battle Command, and Common Controller. Complete Phase 1 software coding and begin CP 13/14 Phase 1 software integration and testing. Develop Prototype Pilot line to include work instruction development, and acceptance test procedures.			
FY 2012 Plans: Conduct integration, assembly and checkout of two (2) CMP prototypes to mature and validate the CMP TDP. Procure the validated CMP TDP to support the MM UGV competitive solicitation. Finalize integrated platform Acceptance Test Plans (ATPs).			

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APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604663A: *FCS Unmanned Ground Vehicles*	PROJECT FC4: *BCT UNMANNED GROUND VEHICLES*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Conduct development testing of detail parts and Line Replaceable Units (LRUs). Complete subsystem qualification testing. Complete integration of all subsystems to include ANS and surrogate controller with Hardware in the Loop (HWIL). Complete development and FQT of Phase 1 operational software, including the Vehicle Control System (VCS), Mobility Control System (MCS) and Power & Propulsion System (PPS). Begin test fix test for all software problem reports and integration issues in support of the platform IQT scheduled for completion in FY13. Complete interface definition activities for Phase 2 software. Phase 2 Software functionality includes software for autonomous waypoint planning and tele-ops, utilization and sensor alignment; Weather Data; Situational Awareness; and Anti-Tamper. Continue software coding and integration of Phase 2 software.			
Title: MM UGV Sensors/Computers/Radios ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2011 Plans:*** Continue design/development efforts to support incorporation of 3rd Gen FLIR engine within MREO (light) sensor package. Conduct PRR for MREO ARV-A(L). Begin procurement of 8 MREOs or equivalent sensors (7 prototypes and 1 spare) for ARV-A(L).Continue the Acoustic Sensor design to support ARV-A(L) CDR milestones. Conduct PDR and CDR for ALAS. Continue development of Sensor Suite Control software code to support testing with the ARV-A(L) . ***FY 2012 Plans:*** Complete evaluation and analysis of both EO/IR and C-IED sensors to support competitive contract procurement for MM UGV.	- 0	70.857 0	5.000
Title: MULE-CM & MULE-T Special Termination Costs ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** These costs were paid to the contractor and subcontractors for MULE-CM and MULE-T terminations as per FAR 31.205 for; Severance Pay, Reasonable costs continuing after termination, Settlement of expenses, and the costs to return field service personnel from remote or liaison sites. ***FY 2011 Plans:*** Special termination costs include severance pays, settlement expenses, and return of field service representatives.	1.000 0	1.500 0	-
Title: ANS (AUTONOMOUS NAVIGATION SYSTEM) ***Articles:***	37.284 0	54.593 0	51.000

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604663A: *FCS Unmanned Ground Vehicles*	PROJECT FC4: *BCT UNMANNED GROUND VEHICLES*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Completed ANS CDR in March 2010. Completed final assembly and detail part drawing release and revision of the remaining 250 drawings. Completed Physical Configuration Audit (PCA) for all prototype hardware components. Finalized coordination of ICD efforts including Part II ICDs and complete review of 94 artifacts and 41 data items in preparation for closeout ANS CDR action items to obtain CDR closure. Began tooling design, fabrication and proofing. Planned for long lead-time procurement of hardware and began fabrication/assembly to support prototype builds for delivery to CMP. Implemented Manufacturing Plan for ANS Computer System (ACS), Imaging Perception Module (IPM), and Laser Radar (LADAR) Imaging Perception Module (LIPM) enclosures; internal cabling; and integration of long lead items. Conducted assembly, integration and developmental testing of detail parts. ANS Prototype environmental testing began 1Q10. Began contractor testing of prototype components. Initiated test planning and support for the IQT testing. Began development of Phase 1 software, followed by FQT of operational code scheduled for FY11. Conducted Phase 2 operational/simulation software architecture reviews in 1Q10. Performed Phase 2 Operational requirements analysis; conducted objectives and architecture reviews in 3Q and 4Q10, respectively; and began software construction in 4Q10. ***FY 2011 Plans:*** Support integration in accordance with ICDs and execution of ARV-A (L) program . Continue procurement and fabrication of prototype hardware to support delivery of prototype sets (IPMs, LIPMs, GPS/INS, and ACS) for integration and IQT. Assess performance and durability of prototype components during test evaluations in support of RAM-T development. Test and validate software performance at the system level. Support preparation for SoS testing (TFT, FDTE & LUT). Continue to provide closure of software problem reports (SPRs) and software-hardware integration with the ANS prototype (P1) and ARV-A (L) platform integration. Complete development of operational Phase 1 software followed by FQT. Continue ANS Phase 2 software construction, coding, test and integration to support CP 13/14 Phase 2. Complete Phase 2 LCA and build checkpoints. Deliver Engineering Phase 16 software. Finish CP 13/14Phase 1 Simulation software 1Q12. ***FY 2012 Plans:*** Complete development of Phase 2 Operational software 2Q12. Conduct Phase 2 Operational Test Readiness Review (TRR) 3Q12. Complete Phase 2 Simulation software build 4Q12. Conduct Phase 2 Operational software FQT 3Q12. Deliver prototypes to support CMP IQT and resolve Software Problem Reports uncovered during CMP integration and contractor testing. Complete prototype TDP release and perform prototype system acceptance testing and production pilot in FY12.			
Title: CONTRACTOR FEE	-	20.495	-
Articles:		0	

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APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604663A: *FCS Unmanned Ground Vehicles*	PROJECT FC4: *BCT UNMANNED GROUND VEHICLES*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: Funding is provided for the following effort ***FY 2011 Plans:*** Moved from System of Systems Engineering; consists of prime contractor fee for remaining work in FY11.			
Title: GOVERNMENT SYSTEMS ENGINEERING/PROGRAM MANAGEMENT ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** The Comms Latency Experiment successfully demonstrated the effects of various data link latencies on the ability to effectively drive by teleoperation a medium class UGV at speeds ranging up to 20 kph. ***FY 2012 Plans:*** Funding to support the Government program management staff for salaries, travel, computers/cell phones, supplies and building/ office space. The Government program management staff consists of 50 personnel: Business, Acquisition, Engineering, Logistics, Admin & IT support. The team manages three programs: Small Unmanned Ground Vehicle, Common Mobility Platform and Autonomous Navigation System. FY11 efforts will involve three major initiatives: completing TDP, developing competitive selection criteria for follow-on contract, developing milestone documentation and analysis to support creation of APB for the Multi-Mission Unmanned Ground Vehicle. The UGV team is heavily involved in other efforts such as the potential fielding of the SUGV to units moving to theater, transfer of ANS technology to Army ATO's, investigating alternatives sensors and communications suites to reduce platform cost and weight and managing testing at government facilities.	0.150 0	-	15.840
Title: GOVERNMENT TEST AND M&S ***Description:*** Funding is provided for the following effort. ***FY 2012 Plans:*** Developmental testing and Limited User Testing will be conducted for the product improved SUGV platform at Government test sites and facilities. Testing will verify that the product improved SUGV meets requirements for the HMS/SRW radio, Militarized EO/IR Head and mission payloads (tether and manipulator arm). The Common Mobility Platform and Autonomous Navigation System (ANS) prototypes will undergo developmental testing to verify the integrated performance of the two systems for unmanned operations at government test sites. Both SUGV and CMP/ANS will require detailed test plan development, test range	-	-	5.000

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
support to include platform and sensor instrumentation, on-site test engineering support for testing and engineer support for data collection and analysis.			
Title: IED COUNTERMEASURE DEV ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2011 Plans:*** Anticipate Army Guidance in 1QFY11 to proceed with the development of a Counter-IED platform. Complete preliminary and detail design of CIED Sub-components. Conduct Sub-system Prototype builds for integration with the CMP. Develop SW package to support performance and functionality of the platform.	- 	22.997 0	-
Accomplishments/Planned Programs Subtotals	122.418	249.948	143.840

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 0604646A: *Non Line of Sight - Launch System*	88.205	81.247								0.000	169.452
• 0604660A: *FCS MGV Manned Ground Vehicles and Common Ground Vehicle Components*	231.103									0.000	231.103
• 0604661A: *FCS System of Systems Engr & Program Management*	847.011	568.711	383.872		383.872		518.188	648.502	352.069	0.000	3,808.398
• 0604662A: *FCS Reconnaissance (UAV) Platforms*	92.444									0.000	92.444
• 0604664A: *FCS Unattended Ground Sensors*	39.664	7.515	0.499		0.499					0.000	47.678
• 0604665A: *FCS Sustainment & Training R&D*	685.524	610.389					251.761	254.232	181.558	0.000	2,187.185
• G86200: *WTCV FCS Spin Out Program*	210.909									0.000	210.909
		44.206								0.000	44.206

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604663A: *FCS Unmanned Ground Vehicles*	PROJECT FC4: *BCT UNMANNED GROUND VEHICLES*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• A00015: *ACFT BCT Unmanned Aerial Veh (UAVs) Incr 1*											
• B00001: *OPA BCT Unattended Ground Sensor*		29.718								0.000	29.718
• B00002: *OPA BCT Network*		176.543								0.000	187.068
• B00003: *OPA BCT Network Incr 2*							229.528	187.955	179.653	0.000	768.167
• F00001: *OPA BCT Unmanned Ground Vehicle*		20.046	24.805		24.805					0.000	48.096
• F00002: *OPA BCT Unmanned Ground Vehicle Incr 2*			11.924		11.924		422.192	834.171	696.603	0.000	2,414.904
• G80001: *OPA BCT Training/ Logistics/Management*		61.581	149.308		149.308		49.792	28.259		0.000	435.142
• G00002: *OPA BCT Training/ Logistics/Management Incr 2*			57.103		57.103		441.250	347.466	273.354	0.000	1,308.265

D. Acquisition Strategy

A 23 June 2009 Acquisition Decision Memorandum (ADM) directed the cancellation of the FCS (BCT) acquisition program. It also instructed the Army to transition to an Army modernization plan consisting of a number of integrated acquisition programs. At that time, the SO E-IBCT was designated a pre-MDAP, with a Milestone C decision scheduled for the first quarter FY 2010. A follow-on ADM was issued 9 July 2009. In it, the Army was directed to continue efforts to improve the brigades beyond the Early Infantry Brigade Combat Team acquisition until a standalone program(s) is defined later in 2010. An Army BCT Modernization Defense Acquisition Board (DAB) was then held on October 16, 2009 to review the Army's plans for the post-Future Combat Systems efforts and confirm the Army brigade modernization acquisition plans were consistent with the Secretary of Defense's guidance. An ADM issued after this DAB stated: "The approach, for Increment 1 (Early-Infantry Brigade Combat Team (E-IBCT)) and the Ground Combat Vehicle (GCV) effort, is consistent with the Secretary's guidance and each is being positioned for more in-depth review and acquisition decisions later in 2009." The Increment 1 E-IBCT Milestone C took place 22 December 2009 and was approved in an ADM dated 24 December 2009. The Program Executive Officer-Integration (PEO-I) has modified the existing contract to be compliant with the aforementioned ADMs. This budget justification reflects the Dec 2009 Milestone C approved Increment 1 (E-IBCT) program and the follow-on IBCT modernization program planned by the Army. On 12 Jan 2011 an E-IBCT DAB took place. The results of this DAB are not yet public, thus any programmatic/funding impacts are not currently reflected.

Also as a result of the 23 June 2009 ADM, the MM UGV (formerly MULE/ARV program) was established as a pre-MDAP. The MULE Program will transition to the MM UGV Program of Record and Acquisition Program Baseline upon MDA approval. In Nov 2010, the AAE & OSD OIPT directed the Army to continue current CMP & ANS design efforts under the current contract. After approval of the MM UGV CDD, a competitive contracting process, utilizing the TDP developed from the current effort, will be initiated for the follow-on MM UGV integrated platform development EMD Contract. The current MULE program meets the base platform mobility requirements and lethality requirements of the draft MM UGV CDD. The current draft CDD is being staffed, estimated approval is 4Q11.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604663A: *FCS Unmanned Ground Vehicles*	PROJECT FC4: *BCT UNMANNED GROUND VEHICLES*

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604663A: *FCS Unmanned Ground Vehicles*	PROJECT FC4: *BCT UNMANNED GROUND VEHICLES*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MULE-CM & MULE-T SPECIAL TERMINATION	Various	The Boeing Company:Various	-	1.500		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	1.500		-		-		-			0.000

Remarks

All Management Services costs for this project are included in 0604661 FC2 SoS Engineering and Program Management project.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Small Unmanned Ground Vehicle (SUGV)	Various	The Boeing Company:St Louis, MO	-	17.048		21.000		-		21.000	Continuing	Continuing	Continuing
Autonomous Navigation System - Software	Various	The Boeing Company:St. Louis, MO	-	70.900		51.000		-		51.000	Continuing	Continuing	Continuing
MM UGV, (former ARV-A (L))	Various	The Boeing Company:St. Louis, MO	-	160.500		51.000		-		51.000	Continuing	Continuing	Continuing
		Subtotal	-	248.448		123.000		-		123.000			

Remarks

Remark 1: Subcontractor: iRobot Corp. - Burlington, MA
Remark 2: Subcontractor: Lockheed Martin Missile and Fire Control - Grand Prairie, TX
Remark 3: Subcontractor: General Dynamics Robotic Systems - Westminister, MD

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GOVERNMENT SEPM	Various	PEO GCS:Warren, MI	-	-		15.840		-		15.840	Continuing	Continuing	Continuing
		Subtotal	-	-		15.840		-		15.840			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604663A: *FCS Unmanned Ground Vehicles*	PROJECT FC4: *BCT UNMANNED GROUND VEHICLES*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GOVERNMENT TEST & EVALUATION M&S	Various	PEO GCS:Warren, MI	-	-		5.000		-		5.000	Continuing	Continuing	0.000
		Subtotal	-	-		5.000		-		5.000			0.000

Remarks

All Test & Evaluation costs for this project are included in 0604661 FC2 SoS Engineering and Program Management project.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	249.948		143.840		-		143.840			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604663A: *FCS Unmanned Ground Vehicles*	**PROJECT** FC4: *BCT UNMANNED GROUND VEHICLES*

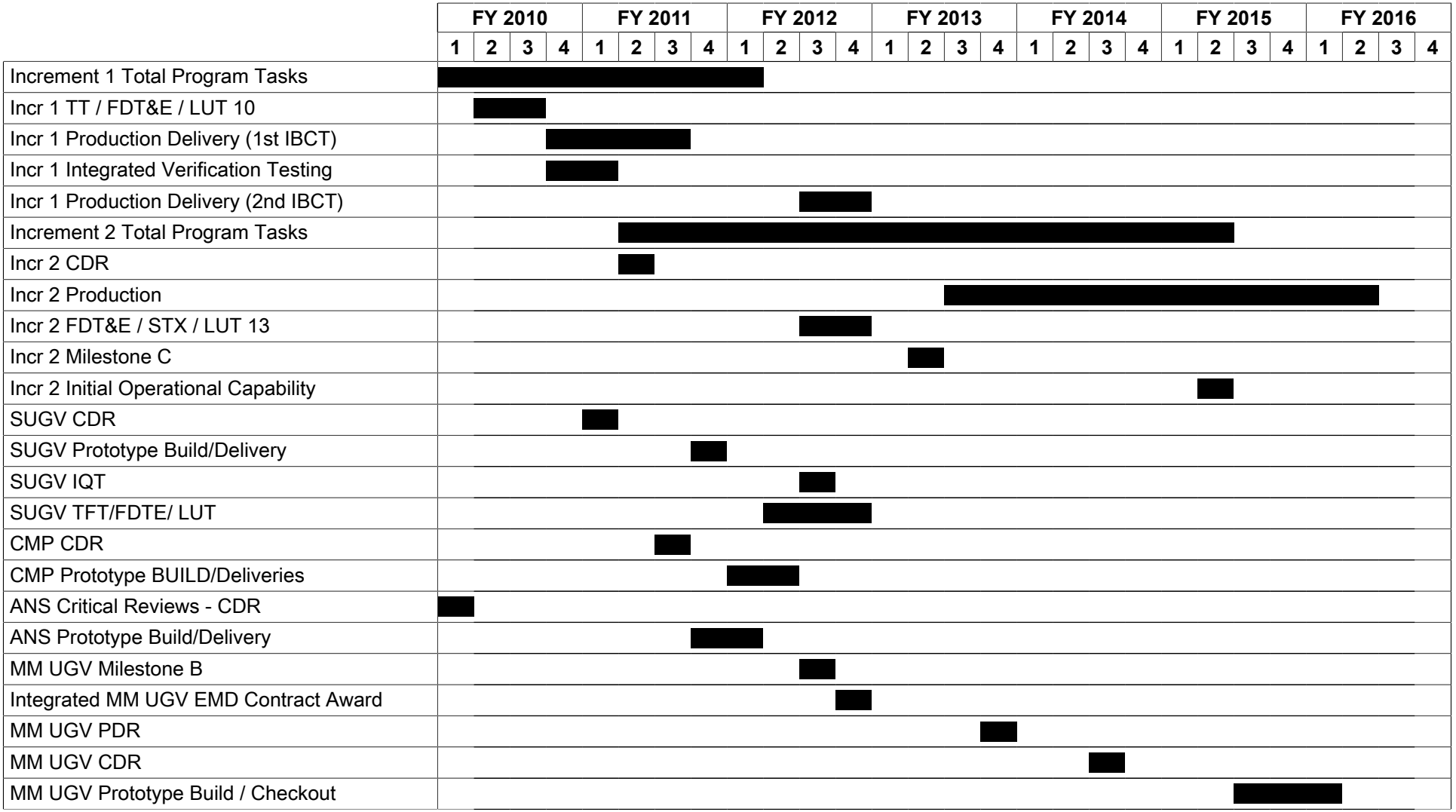

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604663A: *FCS Unmanned Ground Vehicles*	PROJECT FC4: *BCT UNMANNED GROUND VEHICLES*

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MM UGV Qual Test / TFT / FDTE / LUT																												

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604663A: *FCS Unmanned Ground Vehicles*	**PROJECT** FC4: *BCT UNMANNED GROUND VEHICLES*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Increment 1 Total Program Tasks	1	2010	1	2012
Incr 1 TT / FDT&E / LUT 10	2	2010	3	2010
Incr 1 Production Delivery (1st IBCT)	4	2010	3	2011
Incr 1 Integrated Verification Testing	4	2010	1	2011
Incr 1 Production Delivery (2nd IBCT)	3	2012	4	2012
Increment 2 Total Program Tasks	2	2011	2	2015
Incr 2 CDR	2	2011	2	2011
Incr 2 Production	3	2013	2	2016
Incr 2 FDT&E / STX / LUT 13	3	2012	4	2012
Incr 2 Milestone C	2	2013	2	2013
Incr 2 Initial Operational Capability	2	2015	2	2015
SUGV CDR	1	2011	1	2011
SUGV Prototype Build/Delivery	4	2011	4	2011
SUGV IQT	3	2012	3	2012
SUGV TFT/FDTE/ LUT	2	2012	4	2012
CMP CDR	3	2011	3	2011
CMP Prototype BUILD/Deliveries	1	2012	2	2012
ANS Critical Reviews - CDR	1	2010	1	2010
ANS Prototype Build/Delivery	4	2011	1	2012
MM UGV Milestone B	3	2012	3	2012
Integrated MM UGV EMD Contract Award	4	2012	4	2012
MM UGV PDR	4	2013	4	2013

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604663A: *FCS Unmanned Ground Vehicles*	PROJECT FC4: *BCT UNMANNED GROUND VEHICLES*

	Start		End	
Events	Quarter	Year	Quarter	Year
MM UGV CDR	3	2014	3	2014
MM UGV Prototype Build / Checkout	3	2015	1	2016
MM UGV Qual Test / TFT / FDTE / LUT	3	2015	3	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604664A: *FCS Unattended Ground Sensors*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	39.664	7.515	0.499	-	0.499	-	-	-	-	0.000	47.678
FC5: *BCT UNATTENDED GROUND SENSORS*	39.664	7.515	0.499	-	0.499	-	-	-	-	0.000	47.678

Note

FY12: Funds realigned to higher priority requirements.

A. Mission Description and Budget Item Justification

As result of Army Acquisition Decisions, this program has been terminated after procurement of the first brigade. Therefore the FY12 RDT&E request is no longer required. FY11 funds are required for work completed prior to termination in 2Q FY11 and for all special and other termination costs.

The Brigade Combat Team (BCT) Unattended Ground Sensors (UGS) program is divided into two major configurations of sensing systems: URBAN-UGS (U-UGS), also known as Urban Military Operations in Urban Terrain (MOUT) Advanced Sensor System (UMASS); and TACTICAL-UGS (T-UGS), which includes Intelligence, Surveillance and Reconnaissance (ISR)-UGS and Chemical, Biological, Radiological and Nuclear (CBRN)-UGS. U-UGS - Will provide a network-enabled reporting system for Situational Awareness (SA) and force protection in an urban setting, as well as residual protection for cleared areas of urban MOUT environments. The U-UGS system can support BCT operations by monitoring urban choke points such as rooms, halls, attics, basements, sewers, culverts, tunnels, caves, and alleyways. They can be hand-emplaced by Soldiers or robotic vehicles either inside or outside buildings and structures. When a platoon or squad clears a building, U-UGS are left behind to perform surveillance that would otherwise require dedicated soldiers.

The U-UGS system provides a self-organizing wireless network that consists of three configuration items; personnel detect sensors, imaging sensors, and gateways:

1. Personnel Detect Sensors provide dual mode, passive infrared and RF microwave motion sensing for "trip-wire"detection of intruders.
2. Imaging Sensors provide electro-optical visual imaging with a near-infrared illuminator for operation in full darkness.
3. Gateways organize and manage the sensor network, and communicate sensor data to BCT C2 Joint Tactical Radio System (JTRS) systems and to the local dismounts.

T-UGS - Tactical-UGS (T-UGS) includes Intelligence, Surveillance and Reconnaissance (ISR)-UGS and Chemical, Biological, Radiological and Nuclear (CBRN)-UGS. The UGS (T-UGS) are designed for remote tactical operations in open spaces, at road choke points, avenues of approach, etc, and are designed to be emplaced by hand or by remote deployment methods. T-UGS provides ISR and CBRN awareness to the BCT areas not covered by manned/unmanned ground/air vehicles. Packaging the common form factor enables simplified scalability and upgrade paths for future technology insertion, while the distributed sensing capability enhances mission flexibility and system versatility. The T-UGS system consists of five configuration items (nodes), each containing a unique set of sensing capabilities, and sharing a common hardware form factor.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604664A: *FCS Unattended Ground Sensors*

1. The T-UGS ISR sensor node provides for vehicle and personnel detection capabilities via seismic, acoustic and magnetic sensors. Seismic sensors are the primary means of personnel detection. The principal means of vehicle detection and tracking are the acoustic bearing sensors. The ISR-UGS will be modular and composed of tailorable sensor groups using multiple ground-sensing technologies. Multiple sensors support precision location and simultaneous tracking of multiple targets.
2. When confirmed as a valid target of interest, Electro Optical/Infrared (EO/IR) sensor nodes will autonomously capture multiple images of the target.
3. The CBRN node provides for chemical, biological, radiological, and nuclear sensing and reporting capabilities.

The final component is the Long-Haul gateway node that provides radio communications and integration into the BCT network. The longhaul gateway provides the interoperable link between all sensors (SUG-V, UAV CLS-I, U/T-UGS) and the Network Integration Kit (NIK). Without this critical link the network between systems and the user is nonexistent.

FY11 funding represented in this document does not reflect the restructure to the program as a result of the recently signed Acquisition Decision Memorandum

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	26.778	7.515	1.071	-	1.071
Current President's Budget	39.664	7.515	0.499	-	0.499
Total Adjustments	12.886	-	-0.572	-	-0.572
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	13.800	-			
• SBIR/STTR Transfer	-0.914	-			
• Adjustments to Budget Years	-	-	-0.572	-	-0.572

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604664A: *FCS Unattended Ground Sensors*	PROJECT FC5: *BCT UNATTENDED GROUND SENSORS*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
FC5: *BCT UNATTENDED GROUND SENSORS*	39.664	7.515	0.499	-	0.499	-	-	-	-	0.000	47.678
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

As result of Army Acquisition Decisions, this program has been terminated after procurement of the first brigade. Therefore the FY12 RDT&E request is no longer required. FY11 funds are required for work completed prior to termination in 2Q FY11 and for all special and other termination costs.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604664A: *FCS Unattended Ground Sensors*	PROJECT FC5: *BCT UNATTENDED GROUND SENSORS*

2. When confirmed as a valid target of interest, Electro Optical/Infrared (EO/IR) sensor nodes will autonomously capture multiple images of the target.
3. The CBRN node provides for chemical, biological, radiological, and nuclear sensing and reporting capabilities.

The final component is the Long-Haul gateway node that provides radio communications and integration into the BCT network. The longhaul gateway provides the interoperable link between all sensors (SUG-V, UAV CLS-I, U/T-UGS) and the Network Integration Kit (NIK). Without this critical link the network between systems and the user is nonexistent.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Contractor: T-UGS/U-UGS Increment 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Oversee delivery of 14 prototypes for Test and Analysis of New Form Factor UGS (to include radio, spike, acoustic sensor, etc.) and U-UGS gateway. Complete robust reliability post test events. Support RAM-T data generation for MS-C LRIP decision and support LUT-10 activities. Completed U-UGS Software Qualification Test in 3QFY10; U-UGS System Environmental Quality Test; U-UGS System Performance Quality Test; T-UGS Software Qualification Test in 3QFY10; T-UGS System Environmental Quality Test in 4QFY10; T-UGS Operations Qualification Tests and Reliability Tests. Delivered an additional 18 sets of UGS communication range extension prototypes to support LUT-10 efforts.	39.400 0	-	-
Title: Contractor: T-UGS/U-UGS Inc 1, CP 13/14 & Contractor Special Termination ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Begin planning efforts to support CP13/14. ***FY 2011 Plans:*** T-UGS/U-UGS Increment 2 FY11: Oversee delivery of improved prototype hardware to support Technical Field Tests, and further operational test. Complete engineering upgrade to HW and software configuration of the Range Extension Relay .Continued reliability growth; improved sensor/software modalities and deliver soldier carrying MOLLE packs.	0.264 0	7.515 0	-
Title: Government Integration Testing ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:***	-	-	0.499

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604664A: *FCS Unattended Ground Sensors*	PROJECT FC5: *BCT UNATTENDED GROUND SENSORS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Includes government support for upcoming integration testing.			
Accomplishments/Planned Programs Subtotals	39.664	7.515	0.499

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 0604646A: *Non-Line of Sight - Launch System*	88.205	81.247								0.000	169.452
• 0604660A: *FCS Manned Ground Vehicles & Commmon Grd Vehicle Components*	231.103									0.000	231.103
• 0604661A: *FCS System of Systems Eng & Program Management*	847.011	568.711	383.872		383.872		518.188	648.502	352.069	0.000	3,808.398
• 0604662A: *Reconnaissance (UAV) Platforms*	92.444	50.304								0.000	142.748
• 0604663A: *FCS Unmanned Ground Vehicles*	122.418	249.948	143.840		143.840		106.480	131.880	32.009	0.000	911.047
• 0604665A: *FCS Sustainment & Training R&D*	685.524	610.389					251.761	254.232	181.558	0.000	2,187.185
• WTCV G86200: *FCS Spin Out Program*	210.909									0.000	210.909
• ACFT A00015: *BCT Unmanned Aerial Veh (UAVs) Inc 1*		44.206								0.000	44.206
• OPA B00001: *BCT Unattended Ground Sensor*		29.718								0.000	29.718
• OPA B00002: *BCT Network*		176.543								0.000	187.068
• OPA B00003: *BCT Network Incr 2*							229.528	187.955	179.653	0.000	768.167
• OPA F00001: *BCT Unmanned Ground Vehicle*		20.046	24.805		24.805					0.000	48.096
• OPA F00002: *BCT Unmanned Ground Vehicle Incr 2*			11.924		11.924		422.192	834.171	696.603	0.000	2,414.904

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604664A: *FCS Unattended Ground Sensors*	PROJECT FC5: *BCT UNATTENDED GROUND SENSORS*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPA G80001: *BCT Training/ Logistics/Management*		61.581	149.308		149.308		49.792	28.259		0.000	435.142
• OPA G00002: *BCT Training/ Logistics/Managmeent Incr 2*			57.103		57.103		441.250	347.466	273.354	0.000	1,308.265

D. Acquisition Strategy

A 23 June 2009 Acquisition Decision Memorandum (ADM) directed the cancellation of the FCS (BCT) acquisition program. It also instructed the Army to transition to an Army modernization plan consisting of a number of integrated acquisition programs. At that time, the SO E-IBCT was designated a pre-MDAP, with a Milestone C decision scheduled for the first quarter FY10. A follow-on ADM was issued 9 July 2009. In it, the Army was directed to continue efforts to improve the brigades beyond the Early Infantry Brigade Combat Team acquisition until a standalone program(s) is defined later in 2010. An Army BCT Modernization Defense Acquisition Board (DAB) was then held on October 16, 2009 to review the Army's plans for the post-Future Combat Systems efforts and confirm the Army brigade modernization acquisition plans were consistent with the Secretary of Defense's guidance. An ADM issued after this DAB stated: "The approach, for Increment 1 (Early-Infantry Brigade Combat Team (E-IBCT)) and the Ground Combat Vehicle (GCV) effort, is consistent with the Secretary's guidance and each is being positioned for more in-depth review and acquisition decisions later in 2009." The Increment 1 E-IBCT Milestone C took place 22 December 2009 and was approved in an ADM dated 24 December 2009. The Program Executive Office-Integration (PEO-I) has modified the existing contract to be compliant with the aforementioned ADMs. On 12-Jan 2011 a follow on DAB approved procurement of brigades 2 & 3. This budget justification reflects the latest OSD DAB for Increment 1 (E-IBCT) program and the follow-on IBCT modernization program as approved in RMD XXXX.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604664A: *FCS Unattended Ground Sensors*	PROJECT FC5: *BCT UNATTENDED GROUND SENSORS*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government SEPM	Various	PM:Warren, MI	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	-		-		-		-			0.000

Remarks

1. Prior to FY10 all Management Services costs for this project are included in 0604661 FCS SoS Engineering and Program Management.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
T-UGS/U-UGS See Remark 2	Various	The Boeing Company:Various	-	-		-		-		-	Continuing	Continuing	0.000
T-UGS/U-UGS Inc 1, CP 13/14 & Contractor Special Termination	Various	The Boeing Company:Various	-	7.515		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	7.515		-		-		-			0.000

Remarks

1: Subcontractor: Textron Systems, Intelligent Battlefield System Division - Willington, MA

2. The FY10 funding does not include the $13.8M which was approved by congress in Reprogramming Action 10-11 PA.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR	Various	various:various	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	-		-		-		-			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604664A: *FCS Unattended Ground Sensors*	PROJECT FC5: *BCT UNATTENDED GROUND SENSORS*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government SEPM/Test/M&S	Various	PM/TARDEC:Warren, MI	-	-		0.499		-		0.499	Continuing	Continuing	0.000
		Subtotal	-	-		0.499		-		0.499			0.000

Remarks

Prior to FY12 all SOS Test and Evaluation costs for this project are included in 0604661 FCS SoS Engineering and Program Management project.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	7.515		0.499		-		0.499			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604664A: *FCS Unattended Ground Sensors*	PROJECT FC5: *BCT UNATTENDED GROUND SENSORS*

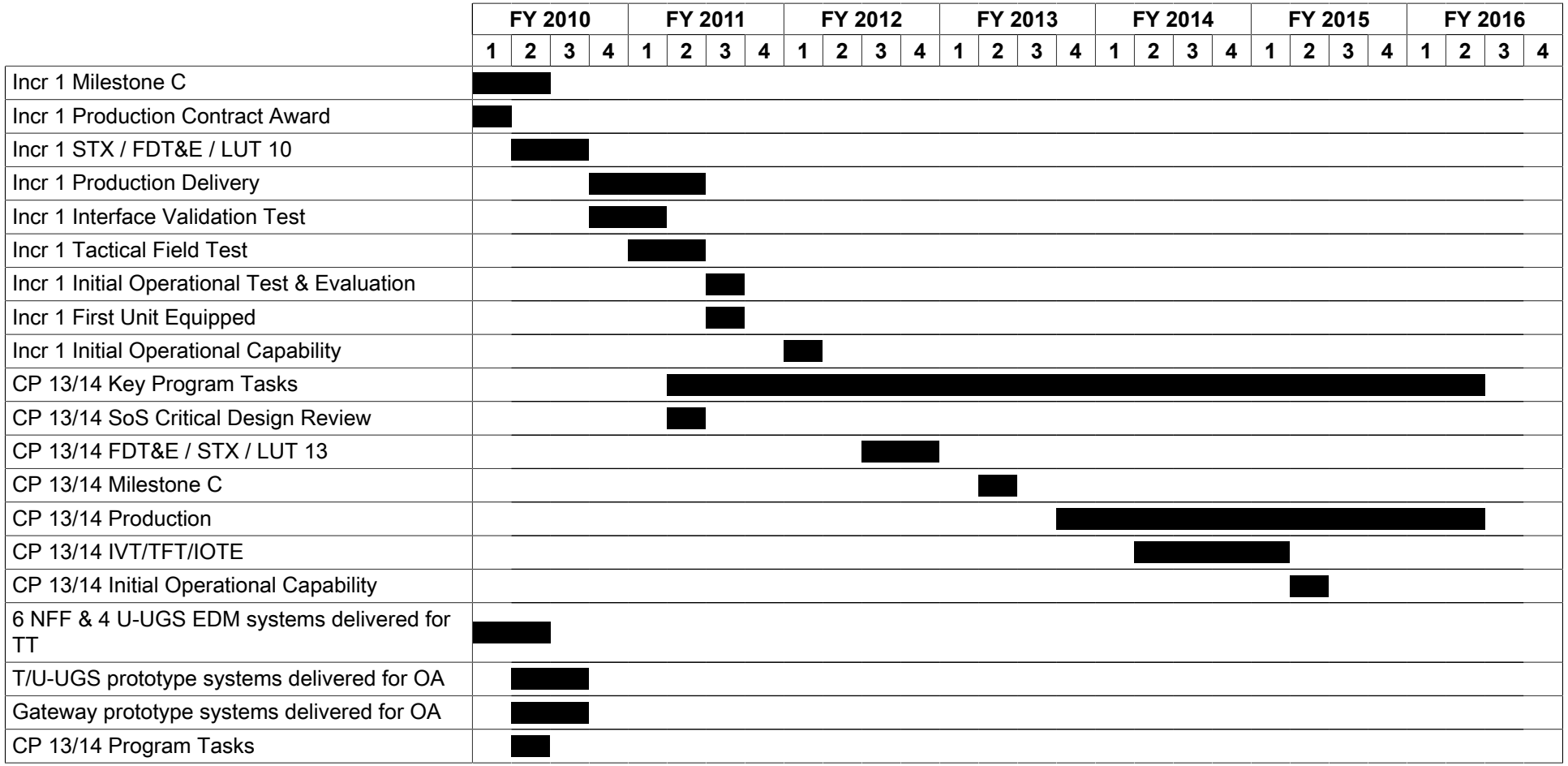

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604664A: *FCS Unattended Ground Sensors*	**PROJECT** FC5: *BCT UNATTENDED GROUND SENSORS*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Incr 1 Milestone C	1	2010	2	2010
Incr 1 Production Contract Award	1	2010	1	2010
Incr 1 STX / FDT&E / LUT 10	2	2010	3	2010
Incr 1 Production Delivery	4	2010	2	2011
Incr 1 Interface Validation Test	4	2010	1	2011
Incr 1 Tactical Field Test	1	2011	2	2011
Incr 1 Initial Operational Test & Evaluation	3	2011	3	2011
Incr 1 First Unit Equipped	3	2011	3	2011
Incr 1 Initial Operational Capability	1	2012	1	2012
CP 13/14 Key Program Tasks	2	2011	2	2016
CP 13/14 SoS Critical Design Review	2	2011	2	2011
CP 13/14 FDT&E / STX / LUT 13	3	2012	4	2012
CP 13/14 Milestone C	2	2013	2	2013
CP 13/14 Production	4	2013	2	2016
CP 13/14 IVT/TFT/IOTE	2	2014	1	2015
CP 13/14 Initial Operational Capability	2	2015	2	2015
6 NFF & 4 U-UGS EDM systems delivered for TT	1	2010	2	2010
T/U-UGS prototype systems delivered for OA	2	2010	3	2010
Gateway prototype systems delivered for OA	2	2010	3	2010
CP 13/14 Program Tasks	2	2010	2	2010

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	685.524	610.389	-	-	-	203.721	251.761	254.232	181.558	Continuing	Continuing
FC6: *BCT Network Hardware & Software*	685.524	610.389	-	-	-	203.721	251.761	254.232	181.558	Continuing	Continuing

Note

FY12: Program was restructured to meet emerging requirements and the funds were used for higher priority requirements.

A. Mission Description and Budget Item Justification

Provides the tools and capabilities necessary for a collection of systems composed of computers, sensors, & platforms linked together to achieve a single capability. This is accomplished through distributed functionality that consists of the following applications and interfaces: a distributed information management backbone, Communications; Intelligence, Surveillance & Reconnaissance; Command & Control(C2); & training & supportability.

The information management backbone necessary for the distributed network is composed of the Integrated Computer System (ICS) Operating System (OS) and hardware (HW) configurations; & the System of Systems Common Operating Environment (SOSCOE). The ICS consists of multiple computer processors, as well as network, graphics & memory cards, & is integrated with software (SW) functionality provided by a modified OS. The ICS hosts the Battle Command System (BCS) software applications. The applications communicate with the ICS via SOSCOE, which separates the SW applications from the ICS HW & Operating System (OS). This isolates changes in the ICS from impacting BCS software applications directly, reducing traditional, integration and maintenance & obsolescence costs. SOSCOE also provides services that allow BCS SW applications located on platforms or other exterior nodes to communicate with each other. The Cross Domain Solution (CDS) is an ICS/BCS HW-SW solution that allows hosting of classified and unclassified data/processing on a single ICS computer.

The Battle Command System (BCS) includes the following software applications: 1. Communication applications which provide the management of voice, data, and video communications between multiple, mobile system platforms. 2. Integration of air and ground sensor data (images, video) into the Common Operational Picture (COP) of the battlefield. 3. Command and Control SW provides the Warfighter the ability to plan how to best maneuver both manned and unmanned systems and their payloads, as well as autonomously/manually control those systems, during the military operation. Additionally, provide the Warfighter with an understanding of the battlefield based on situational awareness data, reporting from friendly units, and assessments of the proximity of enemy threats that is gathered into a COP tailored to the specific region that the unit is conducting combat operations in.
IBCT BCS software development is focused on resolving required improvements discovered during system integration and qualifying each of SW applications prior to fielding. BCS SW development for CP 13/14 is organized into two major SW builds, referred to as Phase 1 and Phase 2.
Common Network Hardware: Includes design, development and prototype procurement of common HW (sensors, computer and radios) required for implementation of the data network. The ICS HW is being commonly developed for each of the platforms with the necessary computing resources, Information Assurance HW, and Soldier workstation processing to support the capabilities required of the BCT. The ICS is being developed using commercial processing equipment but militarized to meet the Information Assurance requirements as well as meet the reliability needs for the harsh environments of a tactical mobile platform. This budget line includes the

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*

procurement of prototype radios and associated radios integration HW. For FY10 and prior the C4ISR systems include a set of advanced sensors that are integrated onto the ground and air vehicle platforms.

Contractor Network Integration: Inc 1 and CP 13/14, the collection of abovementioned BCS SW applications are each integrated together. Thereafter, HW-SW integration is conducted by integrating the BC SW with the ICS, radio & sensor payloads for each of the IBCT systems. The network hardware and software is integrated in both the lab & in the field to reduce downstream integration and schedule risk, & then formally qualified during a series of Network System Qualification Tests (NSQTs) that support the platform IQTs and LUT.

FY11 funding represented in this document does not reflect the restructure to the program as a result of the recently signed Acquisition Decision Memorandum

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	655.745	610.389	523.580	-	523.580
Current President's Budget	685.524	610.389	-	-	-
Total Adjustments	29.779	-	-523.580	-	-523.580
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	52.300	-			
• SBIR/STTR Transfer	-22.521	-			
• Adjustments to Budget Years	-	-	-523.580	-	-523.580

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
FC6: *BCT Network Hardware & Software*	685.524	610.389	-	-	-	203.721	251.761	254.232	181.558	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Provides the tools and capabilities necessary for a collection of systems composed of computers, sensors, & platforms linked together to achieve a single capability. This is accomplished through distributed functionality that consists of the following applications and interfaces: a distributed information management backbone, Communications; Intelligence, Surveillance & Reconnaissance; Command & Control(C2); & training & supportability.

The information management backbone necessary for the distributed network is composed of the Integrated Computer System (ICS) Operating System (OS) and hardware (HW) configurations; & the System of Systems Common Operating Environment (SOSCOE). The ICS consists of multiple computer processors, as well as network, graphics & memory cards, & is integrated with software (SW) functionality provided by a modified OS. The ICS hosts the Battle Command System (BCS) software applications. The applications communicate with the ICS via SOSCOE, which separates the SW applications from the ICS HW & Operating System (OS). This isolates changes in the ICS from impacting BCS software applications directly, reducing traditional, integration and maintenance & obsolescence costs. SOSCOE also provides services that allow BCS SW applications located on platforms or other exterior nodes to communicate with each other. The Cross Domain Solution (CDS) is an ICS/BCS HW-SW solution that allows hosting of classified and unclassified data/processing on a single ICS computer.

The Battle Command System (BCS) includes the following software applications: 1. Communication applications which provide the management of voice, data, and video communications between multiple, mobile system platforms. 2. Integration of air and ground sensor data (images, video) into the Common Operational Picture (COP) of the battlefield. 3. Command and Control SW provides the Warfighter the ability to plan how to best maneuver both manned and unmanned systems and their payloads, as well as autonomously/manually control those systems, during the military operation. Additionally, provide the Warfighter with an understanding of the battlefield based on situational awareness data, reporting from friendly units, and assessments of the proximity of enemy threats that is gathered into a COP tailored to the specific region that the unit is conducting combat operations in.
IBCT BCS software development is focused on resolving required improvements discovered during system integration and qualifying each of SW applications prior to fielding. BCS SW development for CP 13/14 is organized into two major SW builds, referred to as Phase 1 and Phase 2.
Common Network Hardware: Includes design, development and prototype procurement of common HW (sensors, computer and radios) required for implementation of the data network. The ICS HW is being commonly developed for each of the platforms with the necessary computing resources, Information Assurance HW, and Soldier workstation processing to support the capabilities required of the BCT. The ICS is being developed using commercial processing equipment but militarized to meet the Information Assurance requirements as well as meet the reliability needs for the harsh environments of a tactical mobile platform. This budget line includes the procurement of prototype radios and associated radios integration HW. For FY10 and prior the C4ISR systems include a set of advanced sensors that are integrated onto the ground and air vehicle platforms.
Contractor Network Integration: Inc 1 and CP 13/14, the collection of abovementioned BCS SW applications are each integrated together. Thereafter, HW-SW integration is conducted by integrating the BC SW with the ICS, radio & sensor payloads for each of the IBCT systems. The network hardware and software is

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

integrated in both the lab & in the field to reduce downstream integration and schedule risk, & then formally qualified during a series of Network System Qualification Tests (NSQTs) that support the platform IQTs and LUT.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Contractor SOSCOE Development IBCT Increment 1	12.000	-	-
Articles:	0		
Description: Funding is provided for the following effort. ***FY 2010 Accomplishments:*** Continued development of the SOSCOE through 2.7 to support IBCT LUT-10. This software provides updates to support the cross domain solution (CDS) to allow information to pass between classified and unclassified systems. Provided improved capability for system shutdown, restart and data sanitization. Continued the resolution of software integration issues to include Nett Warrior and Joint Tactical Radio System (JTRS) Handheld Manpack and Small form fit (HMS) and National Security Agency (NSA) certified Ground Mobile Radio (GMR) and associated waveforms. Provided resolution of over 500 software anomaly reports identified in LUT-09, FQT, and other integration and test events, which will reduce integration cost and improve system performance and reliability. FQT?ed and released SOSCOE Build 2.7 in 3Q FY10 to support LUT-10. Provided training and help desk support to Battle Command System (BCS) and platform application developers. Provided on-site integration support during software ?to-software integration. Purchased and maintained commercial off the shelf (COTS) License Agreements for all software supplied.			
Title: Contractor SOSCOE Development CP 13/14	51.069	66.466	-
Articles:	0	0	
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Continued development of SOSCOE Build 10 and provided incremental software drops to support early integration with Battle Command System (BCS) CP 13/14 Phase 1 software. The integration of these incremental software drops reduced technical risk, time and resources, prior to the final qualified release of SOSCOE Build 10.6 being available. SOSCOE Builds 10.2 through 10.6 include the following enhancements: updates to chat for supporting resource-constrained platforms; interoperability updates to support new FBCB2 JCR messages; shutdown, restart and data sanitization between different security classifications; database support for resource-constrained platforms; Information Assurance (IA) updates, to include certificate validation; and editing of role-based policies. ***FY 2011 Plans:*** FQT?ed and released SOSCOE Build 10.6 in 1Q FY11 for integration with Battle Command System (BCS) CP 13/14 Phase 1 software. Provide incremental software drops of SOSCOE to support integration with CP 13/14 Phase 2 Battle Command			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
System (BCS) CP 13/14 Phase 2 applications. Continue development and integration activities through Build 10.8 until contract termination prior to qualification of software. SOSCOE Build 10.7 through 108will include the following enhancements: 1) enhanced service discovery for the War fighter to access services offered by as many as 5000 BCT platforms on the battlefield, such as searching for available sensors to retrieve data from and connecting with unmanned platforms to control; 2) enhanced interoperability with AFATDS for coordinating fires support to engage enemy targets; the ability to tailor the size and tools provided by SOSCOE for resource-constrained platforms such as the Common Controller; 3) network Quality of Service (QoS) controls into SOSCOE for ensuring that more important information is given priority for being passed across the network; 4) dynamic (during the mission) platform reconfiguration for mission re-tasking and hardware failure recovery where the system is reconfigured to support a lesser mission capability; and 5) enhanced scalability of chat and whiteboard and directory data to ensure that Soldiers across the entire BCT can each collaborate with each other. (FY 11 current funding requirement is $38,550 based on RMD XXX and anticipated ADM terminating the Network activity in 2nd Quarter FY 11.)			
Title: Contractor Communication Systems Software IBCT Increment 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Based on software developed in FY09, integrated the Network Management System (NMS) with the Battle Command System (BCS) by resolving most Software Problem Reports (SPR's) and other integration issues prior to fielding. Supported integration of the NMS and Battle Command System (BCS) with SOSCOE and with platforms. This includes initial interface with the cross domain guard (CDG), PEO C3T systems (Secure Key Loader (SKL) and Automated Communications Electronic Software (ACES)) and Joint Tactical Radio System (JTRS) Network Management systems (Joint WNW Network Manager (JWNM). JWNM Excursion in October demonstrated managing the Ground Mobile Radio (GMR) in the field with combined NMS systems. FQT?ed the NMS software in 3Q FY10 to support IBCT Increment 1 LUT-10.	2.899 0	-	-
Title: Contractor Communication Systems Software CP 13/14 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Continued development of Network Management System (NMS) CP 13/14 Phase 1 software. NMS CP 13/14 Phase 1 capabilities provide network management of the communication elements (i.e. radios, routers, computers, firewalls, etc) for the new systems being added to the network. Additionally, began development of CP 13/14 Phase 2 software. NMS CP 13/14 Phase 2 capability includes: enhancements to Network Planning (i.e., how the network will be organized and configured for new missions, which	34.575 0	59.143 0	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
includes generating communications plans for the JTRS NMS; enhancements to core Network Management functionality, to include fault, configuration management, security, policy and platform network management; enhancements to the presentation of the network on the Warfighter Machine Interface (WMI) screen; and the ability for BDE/BN TOC communications personnel to update the JTRS Network Management System (NMS)-which generates the configurations (frequencies, keys, etc.) for each of the JTRS radios on the network-by transferring the communications plan via removable media (i.e., CD or thumb drive) to the JTRS NMS (unlike Increment 1 where the operators have to manually input/type the information in). ***FY 2011 Plans:*** Continue development of NMS CP 13/14 Phase 1 software. Complete development of Phase 1functionality, provide integration support to the Network System Integration and Test (NSIT) lab, and resolve Software Problem Reports (SPRs) until contract termination prior to qualification of software. Continue CP 13/14 Phase 2 software development and provide incremental releases of software capability to the NSIT to support integration with each of the Battle Command applications and communications elements (i.e., computers and radios) until contract termination. (FY 11 current funding requirement is $34,303 based on RMD XXX and anticipated ADM terminating the Network activity in 2nd Quarter FY 11.)			
Title: Contractor Battle Command Software - Systems Engineering / Program Management (SE/PM) IBCT Increment 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Provided technical oversight of the software development effort. Provided quality assurance, configuration management and purchased software development licenses. Conducted requirements verification and validation (V&V) of software. Provided data deliverables, participated in technical/management reviews and provided on-site participation as required. Includes subcontractor fee associated with Warfighter Machine Interface Services (WMIS), Situational Understanding (SU), and Battle Command & Mission Execution (BCME). Capabilities include: explicit handoff of Unattended Ground Sensors (UGS) control from one Network Integration Kit (NIK) to another; accelerated image transfer from the sensors to FBCB2; and allowing multiple images to be associated with the same enemy object tracked on the Common Operating Platform (COP) to improve situational awareness and survivability.	2.091 0	-	-
Title: Contractor Battle Command Software - Systems Engineering/Program Management (SE/PM) CP 13/14 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:***	24.939 0	34.946 0	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Battle Command Software - Systems Engineering/Program Management (SE/PM) FY10 CP 13/14: Provided technical oversight of the software development effort. Conducted requirements decomposition and architecture/design for Phase 1. Provided quality assurance, configuration management and purchased software development licenses. Conducted requirements verification and validation (V&V) of software delivered. Provided data deliverables, participated in technical/management reviews and provided on-site participation as required. Includes subcontractor fee associated with Warfighter Machine Interface Services (WMIS), Situational Understanding (SU), Battle Command & Mission Execution (BCME), and Planning and Preparation Services (PPS). ***FY 2011 Plans:*** Provide technical oversight of the software development effort. Conduct requirements decomposition and architecture/design. Provide quality assurance, configuration management and purchase software development licenses. Conduct requirements verification and validation (V&V) of software delivered. Provide data deliverables, participate in technical/management reviews and provide on-site participation as required. Includes subcontractor fee associated with Warfighter Machine Interface Services (WMIS), Situational Understanding (SU), Battle Command & Mission Execution (BCME), and Planning and Preparation Services (PPS). (FY 11 current funding requirement is $20,268 based on RMD XXX and anticipated ADM terminating the Network activity in 2nd Quarter FY 11.)			
Title: Contractor Battle Command Software - Warfighter Machine Interface Services (WMIS) Increment 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Corrected 75 Software Problem Reports (SPRs) discovered during Increment 1 IBCT LUT-09 and concurrent testing to improve reliability for the soldier to access and execute network capabilities through the WMIS display. Performed integration with the cross domain guard (CDG) for message passing between different security classifications. Provided integration support to the Network System Integration and Test (NSIT) lab. FQT?ed and released Increment 1 WMIS software in 3Q FY10 to support the Network Integration Kit (NIK) Network System Qualification Test (NSQT) prior to Increment 1 IBCT LUT-10. Additional Increment 1 capabilities include modifications to the layout of the WMIS screen based on user feedback from the field, increasing access and visibility; and auto-adjusting the WMIS window to occupy the entire FBCB2 screen which provides more information to the warfighter.	1.140 0	-	-
Title: Contractor Battle Command Software - Warfighter Machine Interface Services (WMIS) CP 13/14 ***Articles:*** ***Description:*** Funding is provided for the following effort	13.594 0	27.934 0	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Continued software development/coding of WMIS to support Battle Command System (BCS) CP 13/14 Phase 1 and provided releases to support early BCS system-level integration. Corrected 24 Software Problem Reports (SPRs). Integrated with SOSCOE Builds 10.2 through 10.5. Provided software-to-software integration support to the Network System Integration and Test (NSIT). WMIS CP 13/14 Phase 1 capability includes: enhanced user display, thereby providing ease of access and more information to the Warfighter. For example, this includes logon, startup, shutdown, and role management; enhancements to primitives (i.e., buttons, menus, windows, etc., on the Warrior Machine Interface (WMI) screen); enhancements to the presentation builder; and enhancements to support collaboration between soldiers on the network. ***FY 2011 Plans:*** Continue software development/coding of WMIS to support Battle Command System (BCS) CP 13/14 Phase 1. Complete developments for Phase 1 functionality, provide integration support to the Network System Integration and Test (NSIT), and resolve SPRs until contract termination prior to qualification of software. Began development of WMIS to support Battle Command System (BCS) CP 13/14 Phase 2. Continue until contract termination. Provide multiple software releases of incremental capability to support early Battle Command System (BCS) system-level integration. Provide integration support to the (NSIT) during software-to-software integration. WMIS CP 13/14 Phase 2 software functionality includes: improved layout of the screens and enhancements to the Presentation Services, which manage how the information is being presented to the Warfighter and allows the Warfighter to tailor their preferences of how the default interface is configured. (FY 11 current funding requirement is $16,202 based on RMD XXX and anticipated ADM terminating the Network activity in 2nd Quarter FY 11.)			
Title: Contractor Battle Command Software - Battle Command & Mission Execution (BCME) IBCT Increment 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Corrected 63 Software Problem Reports (SPRs) discovered during Increment 1 IBCT LUT-09 and concurrent testing. Performed integration with the cross domain guard (CDG) for message passing between different security classifications. Provided integration support to the Network System Integration and Test (NSIT) lab. FQT?ed and released Increment 1 BCME software in 3Q FY10 to support the Network Integration Kit (NIK) Network System Qualification Test (NSQT) prior to Increment 1 IBCT LUT-10. BCME Increment 1 capabilities include command and control of the UGS gateway and sensor nodes to improve the situational awareness of the soldier. BCME also provides the ability to receive and display (via the WMIS screen) alert notifications based on sensor hits and tampering of the device to reduce the need for the soldier to continuously monitor the UGS	3.970 0	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
field. BCME also provides the Current Force Platform Interface Manager (CFPIM) to interface with FBCB2 located on the NIK-equipped platform to allow the soldier to start-up, administer and control the system.			
Title: Contractor Battle Command Software - Battle Command & Mission Execution (BCME) CP 13/14	38.662	27.156	-
Articles:	0	0	
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Continued software development/coding of BCME to support Battle Command System (BCS) CP 13/14 Phase 1. Corrected 7 Software Problem Reports (SPRs). Provided integration releases to support early BCS system-level integration. Integrated with SOSCOE Builds 10.2 through 10.5. Provided integration support to the Network System Integration and Test (NSIT). BCME CP 13/14 Phase 1 includes: enhancements to alerts and notifications; task organization; basic airspace monitoring of blue forces traveling within the airspace corridor; sensor control; platform control; and fires and effects control through interoperability with Advanced Field Artillery Tactical Data System (AFATDS) via SOSCOE. ***FY 2011 Plans:*** Continue software development/coding of BCME to support Battle Command System (BCS) CP 13/14 Phase 1. Complete developments of Phase 1 functionality, provide integration support to the Network System Integration and Test (NSIT), and resolve SPRs until contract termination prior to qualification of software. Began development of BCME to support Battle Command System (BCS) CP 13/14 Phase 2. Provide multiple software releases of incremental capability to support early BCS system-level integration and provide integration support to the NSIT. Continue until contract termination. BCME CP 13/14 Phase 2 software includes enhancements to: alerts and notifications; task organization; sensor control; and fires and effects control for engagement of Line of Sight (LOS) targets, deconfliction of the ground-space for unmanned and manned vehicle conflicts, such as route planning and direct fires engagements to avoid fratricide and loss of platforms. (FY 11 current funding requirement is $15,751 based on RMD XXX and anticipated ADM terminating the Network activity in 2nd Quarter FY 11.)			
Title: Contractor Battle Command Software - Situational Understanding (SU) IBCT Increment 1	1.504	-	-
Articles:	0		
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Corrected 25 Software Problem Reports (SPRs) discovered during Increment 1 IBCT LUT-09 and concurrent testing. Performed integration with the cross domain guard (CDG) for message passing between different security classifications. Provided integration support to the Network System Integration and Test (NSIT) lab. FQT?ed and released Increment 1 SU software in 3Q			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
FY10 to support the Network Integration Kit (NIK) Network System Qualification Test (NSQT) prior to Increment 1 IBCT LUT-10. SU Increment 1 will retrieve Battle Space Objects from Level 1 Fusion and publish them to the Common Operational Picture (COP). Provides the capability to send BSO and imagery to FBCB2/JCR.			
Title: Contractor Battle Command Software - Situational Understanding (SU) CP 13/14	17.940	19.414	-
Articles:	0	0	
Description: Funding is provided for the following effort			
FY 2010 Accomplishments: Continued software development/coding of SU to support Battle Command System (BCS) CP 13/14 Phase 1. Integrated with SOSCOE Builds 10.2 through 10.5. Provided integration releases to support early BCS system-level integration. Provided integration support to the Network System Integration and Test (NSIT). Corrected 2 Software Problem Reports (SPRs) identified during software-to-software integration by the NSIT. Situational Understanding (SU) CP 13/14 Phase 1 includes: enhancements to object refinement and situation refinement, to include blue/red force aggregation into military units and identification of terrain obstacles; threat refinement, to include identification of platform-to-platform, indirect fires, and unit-to-unit threats; fusion process refinement, to include recommendations on how information is fused, sensor tasking recommendations based on sensor coverage gaps and Areas of Interest (AOI); and identification and classification of newly acquired platforms on the battlefield as either friendly, enemy, neutral or unknown.			
FY 2011 Plans: Continue software development/coding of SU to support Battle Command System (BCS) CP 13/14 Phase 1. Complete developments of Phase 1 functionality, provide software-to-software integration support to NSIT, and resolve SPRs until contract termination prior to qualification of software. Began development of SU to support Battle Command System (BCS) CP 13/14 Phase 2. Provide multiple software releases of incremental capability to support early BCS system-level integration. Provide integration support to the Network System Integration and Test (NSIT). Continue until contract termination. Phase 2 of SU will providing the following capability: removal of entities from the COP over time that no longer are relevant to the mission; incorporation of terrain data while combining sensor images and data into the COP for an improved awareness and understanding of the battlefield; interoperability updates to share situational awareness data with systems external to the IBCT; and receipt of weather data from BDE/Enterprise systems for displaying to the Warfighter and for planning future missions. (FY 11 current funding requirement is $11,260 based on RMD XXX and anticipated ADM terminating the Network activity in 2nd Quarter FY 11.)			
Title: Contractor Battle Command Software - Planning and Preparation Services (PPS) CP 13/14	8.677	8.561	-
Articles:	0	0	
Description: Funding is provided for the following effort			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Continued software development/coding of PPS to support Battle Command System (BCS) CP 13/14 Phase 1. Corrected 8 Software Problem Reports (SPRs). Provided integration releases to support early BCS system-level integration. Integrated with SOSCOE Builds 10.2 through 10.5. Provided integration support to the Network System Integration and Test (NSIT). PPS CP 13/14 Phase 1 includes development of the maneuver planner, ground space planner; and capability to analyze the terrain using map data to plan the route for an Unmanned Ground Vehicle (UGV). ***FY 2011 Plans:*** Continue software development/coding of PPS to support Battle Command System (BCS) CP 13/14 Phase 1. Complete developments for Phase 1 functionality, provide integration support to the Network System Integration and Test (NSIT), and resolve SPRs until contract termination prior to qualification of software. Began development of PPS to support Battle Command System (BCS) CP 13/14 Phase 2. Provide multiple software releases of incremental capability to support early BCS system-level integration. Provide integration support to the. Continue until contract termination. PPS CP 13/14 Phase 2 includes: ground-space planning, with the capability to combine planning information to provide the user with automated recommendations for ground route planning for the UGVs; sensor planning to assist the commander in placement of sensor assets on the battlefield; enhanced maneuver planning to assist the commander on how to maneuver platforms on the battlefield prior to executing a mission; and the terrain analyzer, to identify obstacles and hazards. (FY 11 current funding requirement is $4,966 based on RMD XXX and anticipated ADM terminating the Network activity in 2nd Quarter FY 11.)			
Title: Contractor Fusion Software IBCT Increment 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Continued resolution of Software Problem Reports (SPR's) identified during Increment 1 LUT-09 for Sensor Data Management (SDM) and Level 1 Fusion (L1F) software. Corrected 23 Software Problem Reports (SPRs) for L1F and 17 SPRs for SDM. FQT?ed and released SDM and L1F Increment 1 software to the Network System Integration and Test (NSIT) in 3Q FY10 for the Network Integration Kit (NIK) Network System Qualification Test (NSQT), proceeding IBCT LUT-10. L1F subsequently provided enhancements to algorithms for combining sensor data. These enhancements were tested and verified in a delta NSQT that took place in 1QFY11. Capabilities: SDM will capture sensor data and make it available via the network. L1F will aggregate sensor data into battle space objects to be presented via WMIS as part of the Common Operational Picture (COP).	1.426 0	-	-
Title: Contractor Fusion Software CP 13/14 ***Articles:***	17.006 0	12.510 0	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604665A: *FCS Sustainment & Training R&D*	**PROJECT** FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Continued software development/coding of Fusion software to support Battle Command System (BCS) CP 13/14 Phase 1. Integrated with SOSCOE Builds 10.1 through 10.5. Provided multiple releases of Sensor Data Management (SDM) and Level 1 Fusion (L1F) CP 13/14 Phase 1 software, to simplify integration, reduce schedule and technical risk, with the result of minimizing cost of integrating the Battle Command System (BCS). Corrected 3 Software Problem Reports (SPRs) for L1F and 8 SPRs for SDM. Provided integration support to the Network System Integration and Test (NSIT). SDM CP 13/14 Phase 1 capability includes interfacing with upgraded sensor payloads on the Class I and SUGV and new sensor payloads from ARV-A (L). SDM incorporates electro-optical infrared (EO/IR) sensor data from the SUGV so that the Warfighter can receive advanced knowledge of enemy locations and hazards from a safe distance in Urban environments. L1F CP 13/14 Phase 1 capability includes creation of the Distributed Fusion Manager (DFM), which will more efficiently fuse/combine/ consolidate sensor data and Battle Space Objects (BSO's), reducing network traffic by limiting information to those who require the information; and enhancements to the Blue Force Location Service (BFLS), which provides platform positions for nearby friendly platforms. ***FY 2011 Plans:*** Continue software development/coding of SDM and L1F to support Battle Command System (BCS) CP 13/14 Phase 1. Complete developments of Phase 1 functionality, provide integration support to NSIT, and resolve SPRs until contract termination prior to qualification of software. Began development of Sensor Data Management (SDM) and Level 1 Fusion (LIF) to support Battle Command System (BCS) CP 13/14 Phase 2. Provide multiple releases to simplify integration, reduce schedule and technical risk, with the result of minimizing cost of integrating the Battle Command System (BCS). Integrate with SOSCOE Builds 10.6 and 10.7. Provide integration support to the Network System Integration and Test (NSIT). Continue until contract termination. Planned SDM CP 13/14 Phase 2 capability includes updated interfaces with the Aided Target Recognition (AiTR) sensor; updated sensor suite control for the ARV-A(L); and interfacing with the current force system Distributed Common Ground System-Army (DCGS-A). SDM receives enemy location updates from Distributed Common Ground Station-Army (DCGS-A) and integrates it into the BCT-M database. Sharing of enemy locations with other systems increases the survivability and combat effectiveness of the BCT. Planned L1F CP 13/14 Phase 2 capability includes enhancements to the Blue Force Location Service (BFLS), fusion engines, and the Distributed Fusion Manager (DFM). The DFM will manage the transfer of Intel data to enable the User to receive relevant data faster. (FY 11 current funding requirement is $7,256 based on RMD XXX and anticipated ADM terminating the Network activity in 2nd Quarter FY 11.)			
Title: Contractor Embedded Training Software CP 13/14	15.940	14.455	-
Articles:	0	0	

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604665A: *FCS Sustainment & Training R&D*	**PROJECT** FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: A common set of training software/tools, referred to as Training Common Components (TCC), are being developed to support the following types of training for the IBCT: Computer Based Training (CBT), Live Training, Individual Operator Training (IOT), and Leader/Battle Staff (LBS). Computer Based Training (CBT) provides the Warfighter a basic understanding of how to interface with the WMI to complete a set of operation tasks (i.e., how to generate and disseminate a report, chat or whiteboard with other Warfighters, access current force systems for data, etc.) and maintain the IBCT systems. CBT can also be used by the Warfighter to access AKO to complete technical and annually required coursework. CBT will be available on workstations, NIK and CC. The IOT trains the operator on how to operate unmanned platforms, such as how to connect, manually drive, follow a user-defined route, and laze a target. IOT will be available on workstations and CC. Live training allows for IBCT systems (NIK, CC and Unmanned Platforms) to collectively participate in live training exercises while at the home station, local training area, or Combat Training Center (CTC). This includes the ability for IBCT systems, integrated with the TCCs and SOSCOE, to interface with Multiple Integrated Laser Engagement System (MILES), Combat Training Center - Instrumentation Systems (CTC-IS) and One Tactical Engagement Simulation system (OneTESS). The TCC's also provide the capability to log the training exercise and evaluate the performance of individuals and the unit. The Leader/Battle Staff (LBS) training capability (available on the CC) instructs commanders on how to tactically operate and employ (i.e., ***FY 2010 Accomplishments:*** Provided multiple releases of TCC's for CP 13/14 Phase 1 to simplify integration, reduce schedule and technical risk, with the result of minimizing cost of integrating the Battle Command System (BCS). Integrated with SOSCOE Builds 10.2 through 10.5. Capability includes Computer Based Training (CBT) for Soldiers; initial Leader Battle Staff (LBS) training; initial Individual Operator Training (IOT) for unmanned platforms; and interoperability of the Multiple Integrated Laser Engagement System (MILES) and training ranges to provide initial live training for the SUGV, UAV Class I, ARV-A(L) and CC IBCT systems; and Individual Operator Training (IOT) of unmanned platforms on the CC. ***FY 2011 Plans:*** Continue development of TCC's for CP 13/14 and initiate integration and test with the Battle Command System (BCS) until contract termination prior to qualification of software. The TCC's provide the tools for the following training capability: enhanced Computer Based Training (CBT), enhanced Leader Battle Staff (LBS) training for instructing commanders and staffs in warfighting Tactics, Techniques and Procedures (TTPs) that use the actual CP 13/14 Battle Command System (BCS) software applications and communications systems; providing Individual Operator Training (IOT) for instructing the operation of the CC for controlling the SUGV, and CL 1 UAV. Live training capability will also be enhanced for the IBCT platforms, to enable interoperability with Combat Training Center - Instrumentation Systems (CTC-IS), Home station Instrumentation Training System (HITS) and			

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APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Digital Range Training system (DRTS). (FY 11 current funding requirement is $8,384 based on RMD XXX and anticipated ADM terminating the Network activity in 2nd Quarter FY 11.)			
Title: Contractor Logistics Products Application Integration IBCT Increment 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Provided incremental releases of Logistics Decision Support System (LDSS) and Platform Soldier-Mission Readiness System (PS-MRS) Increment 1 software to the Network System Integration and Test (NSIT) lab in support of early integration of the Battle Command System (BCS) for IBCT LUT-10. Resolved Software Problem Reports (SPR's) discovered during IBCT LUT-09. FQT?ed and released LDSS and PS-MRS Increment 1 software to NSIT in support of Network System Qualification Test (NSQT), leading to the IBCT LUT-10. Key logistical capabilities provided during Increment 1 include: 1) Readiness Monitoring of the battery levels for the T-UGS and SUGV, an on/off status of the Integrated Computer System (ICS) and the BCS software applications running on the NIK; and the status of the UAS CL 1; 2) Report the status of the Increment 1 systems to FBCB2 for display on the Common Operating Picture (COP); and 3) Diagnostics of failed components for Increment 1 systems with a basic display of the IETMs for aiding the Operator during repair in the field.	8.000 0	-	-
Title: Contractor Logistics Products Application Integration CP 13/14 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Provided multiple software releases of incremental logistical capability which are integrated with SOSCOE Builds 10.2 through 10.5 to support early CP 13/14 Phase 1 Battle Command System integration. Provided integration support to the Network System Integration and Test. Logistics Decision Support System CP 13/14 Phase 1 includes: calculation of platform supply requirements via the supply planner, thereby decreasing the logistical footprint and increasing the OPTEMPO of the platforms; manually process requests for maintenance; determine platform consumable status; adherence to information assurance requirements; and integration with the Cross Domain Guard (CDG). The Logistics Data Management System (LDMS) CP 13/14 Phase 1 includes development of the Logical Data Manager to provide the following: manage the configuration of platforms; interface to access the Army Property Book Unit Supply Enhanced, Standard Army Retail Supply System, and Global Transportation Network enterprise-level logistics systems through the Logistics Information Warehouse; interface to commercial transportation systems; interface with systems for inventory and other asset visibility data; additional reporting for equipment availability analysis; reporting for Product Support Integrators; and inventory performance, transportation performance & asset visibility analysis	29.518 0	30.444 0	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
as part of the supply chain. Platform Soldier-Mission Readiness System (PS-MRS) CP 13/14 Phase 1 includes: diagnostics capabilities, to include fault detection/isolation & platform availability; scheduled maintenance and resupply; remote diagnostics on unmanned systems; interface with the CDG; and integration of Interactive Electronic Technical Manuals (IETM) capabilities, to include directed navigation and viewing through the WMI screen. The enhanced IETM capabilities decrease the time to repair by coordinating with PS-MRS diagnostics to identify the single-point-of-failure and provide specific automated task technical references to repair the identified component/unit. ***FY 2011 Plans:*** Continue software development of Logistics Products to support CP 13/14 Phase 1. Complete developments of Phase 1 functionality, provide integration support to NSIT, and resolve SPRs until contract termination prior to qualification of software. Began development of Logistics Products to support Battle Command System (BCS) CP 13/14 Phase 2. Continue until contract termination. Provide multiple software releases of incremental logistics capability to support early BCS system-level integration. Provide integration support to the Network System Integration and Test. Logistics Decision Support System (LDSS) CP 13/14 Phase 2 includes: distribute maintenance requests via the maintenance manager; disseminate platform readiness and aggregate platform readiness by platform type using current force systems; adherence to information assurance requirements; and integration of new messages with the Cross Domain Guard. Logistic Data Management System (LDMS) CP 13/14 Phase 2 capability [Logistics Data Manager (LDM) and Logistics Data Agent (LDA)] includes: collect maintenance, supply, heath and status data from the Platforms for analysis. Additional LDM capability includes: Sending Condition Based Maintenance Plus (CBM+) data to Global Combat Support System - Army (GCSS-Army). (FY 11 current funding requirement is $17,658 based on RMD XXX and anticipated ADM terminating the Network activity in 2nd Quarter FY 11.)			
Title: Contractor Range Extension Relay Increment 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Complete 18 engineering upgrade to HW and software configuration of the Range Extension Relay. Continued reliability growth; improved sensor/software modalities and deliver soldier carrying MOLLE packs.	2.360 0	-	-
Title: Contractor Ground Sensors Hardware CP 13/14 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:***	70.440 0	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Conduct Production Readiness Review (PRR) for SUGV (militarized head) in 3Q FY10. Complete delivery of 8 SUGV EO/IR/ LRF. Design/development efforts to support incorporation of 3rd Gen FLIR within MREO (light) sensor package. Conduct CDR for MREO ARV-A(L). Begin long-lead prototype procurement of 8 MREOs (7 prototypes and 1 spare) for ARV-A(L) with delivery in FY11. Continue the Acoustic Locating Array Sensor (ALAS) design and to support ARV-A(L) PDR milestones. Continue Sensor Suite Control software code and unit test.			
Title: Contractor Air Sensor Hardware CP 13/14 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Began ASTAMIDS initial flight tests in November 2009. Due to termination of Class IV Program, the remaining ASTAMIDS sensor and SAR/GMTI interfaces was also terminated in January 2010. Conduct CL I EOIR/LD/LRF sensor CDR, and continue development of sensor package through the Production Readiness Review (PRR). Begin long-lead procurement of 14 prototypes Electro Optical Infrared (EOIR/LD) Class 1 Sensors. The remaining effort for the Air Sensor Hardware for FY11 and beyond are included in PE 0604664 FC3.	13.300 0	-	-
Title: Contractor Communication Hardware (Air and Ground) IBCT Increment 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Delivered remainder of 19 System Development and Demonstration (SDD) Network Interface Kits (NIKs) for government field testing. Upgraded 19 NIKs with JTRS Ground Mobile Radio (GMR) Engineering Development Models (EDM) radios to support Increment 1 LUT-10 testing. Completed Engineering upgrade to hardware and software configuration of 16 Range Extension Relays currently used in Increment 1. Upgraded 23 JTRS GMRs with SRW 1.0c. Provided technical support for the 19 GMR set for testing at White Sands Missile Range/Ft. Bliss including software updates, OE updates, waveform updates, configuration file development, and onsite technical expertise. Procured 153 HMS radios, performed software updates on the radios, provided technical support for resolving discovered issues. Built and delivered 3 JTRS Network Management suite to support FY10 testing and validation of information exchange between the other CP equipment (ACES, SKL, etc) and the NMS Communications Systems Software. The JTRS Network Management suite consists of several laptops and ancillary equipment (cables, switches and One Way Guard) to support the JTRS WNW Network Manager (JWNM) (GMR and WNW) and SRW Network Manager (SRWNM) 1.0+ (HMS and GMR) for planning, configuring, and managing the radio/waveforms of the IBCT and the separate	38.039 0	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
security enclaves (Secret, TUI, Black). Conducted Technical Field Test, Force Development Test and Evaluation, and Limited User Test. Conducted NIK Increment 1 CDR. Conducted evaluations of alternative radio solutions for tele-operations.			
Title: Contractor Communication Hardware (Air and Ground) CP 13/14	5.780	20.840	-
Articles:	0	0	
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Initiated procurement of 251 rifleman radios for common controller. Delivered and integrated 3 JTRS Small Form Factor (SFF) based Communications/Navigation Units (CNU) for Small Unmanned Ground Vehicle (SUGV). Delivered 62 GMR EDM radios to integration labs for INC2 SDD efforts. Prepared and delivered Payload Training Support Packages. Updated Graphic Training Package for soldier training for test events. Completed System engineering of the network architecture and waveform load-set. Conducted communications systems and NIK PDRs. Conducted communications systems CDR. Completed System Engineering, and delivered Interface Control Documentation (ICDs), for communications and NIK systems to be integrated into ARV-A(L)s and Army wheeled ground vehicles (e.g. HMMWV and MRAP). ***FY 2011 Plans:*** Complete procurement of 251 rifleman radios for Common Controller. Procure and prepare test stations and conduct final integration and test acceptance of NIK payloads. The NIK consists of the GMR Radio, the Integrated Computer System, and the Ground Platform Communications System integrating elements, specifically, cables, antennas, and unique signal filters for the vehicle implementation Plan Conduct Critical Design Review (CDR) for Network Interface Kit (NIK). Complete NIK design, update ICDs and schematics. Procure and deliver 20 NIK payloads for integration into HMMWVs for CP 13/14 Limited User Test (LUT). Procure and integrate into Network System Integration and Test (NSIT) SIL. Sponsored the development of the teleops version of SRW (SRW 1.1) to support ARV(L) and SUGV platforms. (FY 11 current funding requirement is $12,088 based on RMD XXX and anticipated ADM terminating the Network activity in 2nd Quarter FY 11.)			
Title: Contractor Common Controller (CC), Hardware and Software CP 13/14	34.210	50.138	-
Articles:	0	0	
Description: The Common Controller (CC) represents the follow-on capability to each unmanned systems unique controller identified in the draft CDD by replacing the E-IBCT controllers of the Small Unmanned Vehicle (SUGV), the Urban Unattended Ground Sensor (U-UGS), Tactical Unattended Ground Sensors (T-UGS), the Class I Unmanned Aerial System (CLS I UAS), the Multi-Mission Unmanned Ground Vehicle (MM-UGV), and other Battalion and below unmanned systems IAW the draft CC CDD. CC capability provides the IBCT with Soldier-borne unmanned system control and networking capability for the dismounted Soldier. The CC exhibits robust mission planning features and a Warfighter Machine Interface (WMI) which provides			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
the Soldier with a common user control interface which reduces the cross-training burden previously associated with having multiple controllers. The CC will use the same battery as the Nett Warrior (formerly known as Ground Soldier System, GSS) thus reducing the logistics footprint. As a networking device, the CC will possess the capability to display and transmit time sensitive sensor data to leaders at different echelons within the BCT. The timely dissemination of sensor data will improve situational awareness and understanding throughout the BCT.In order to provide increased dismounted control capability, CC fielding has been accelerated into Brigade 4 of Increment 1 (FY13/14). The CC with additional BCS functionality and reduced size and weight will be fielded as a part of CP 13/14 (FY15/16). In order to provide greater capability to the Soldier sooner, the CC Spiral 2 & 3 leverages a hardware design that is approximately 80% common among CC spirals. The major difference between CC Spiral 2 and 3 is improved software and communication capability. ***FY 2010 Accomplishments:*** Common Controller (CC) program events included participation in the Brigade Combat Team Integration Exercise for Vice Chief of Staff of the Army in Q04FY10 and the Brigade Combat Team Modernization - Combined Interoperability and Network Experiment (CINE) in Q04FY10. These experimentation events demonstrated CC networking and unmanned systems control capabilities integrated into a brigade network architecture. Specifically, the CC was able to control a unmanned systems (SUGV) and transmit JVMF messages including PLI to a Land Warrior (Platoon leader) via the SRW Platoon network in intra-platoon communications. The CC Team also participated in the Soldier Radio Waveform - Evaluation Radio Alternative for SUGV (SRW ERAS) in Q03FY10 which evaluated teleops waveform capabilities in an operational environment. Other CC Team events included successfully Completion of Hot Vibration and Shock Tests for the CC Spiral 2 (S2). ***FY 2011 Plans:*** Conduct CC Critical Design Review by the end of 2 Qtr FY11. Begin procurement of 37 Spiral 2 and 49 Spiral 3 prototypes to be deliverd in FY11. (FY 11 current funding requirement is $29,080 based on RMD XXX and anticipated ADM terminating the Network activity in 2nd Quarter FY 11.)			
Title: Contractor ICS - Computer Processing, Hardware and Software IBCT Increment 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** ICS Hardware: Upgraded the ICS Type VI to avoid hazardous materials (HAZMAT) from the Gigabit Ethernet Switch Module (GESM). Additionally, worked toward obtaining NSA certification of Cross Domain Guard (CDG) processor board, operating system (RedHat 5.0) and software application as part of the ICS. The ICS was updated to host a certified Cross Domain Guard/	15.740 0	-	-

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APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Solution, replacing a surrogate that was used in FY09. Began planning for classified testing of the CDG for IOT&E FY11. ICS Software: For Increment 1, resolved 7 Software Problem Reports (SPR's), and provided integration support to the Network System Integration & Test (NSIT) lab prior to the Network System Qualification Test (NSQT) in 4Q FY10 and the delta NSQT in 1QFY11.			
Title: Contractor ICS - Computer Processing, Hardware and Software CP 13/14 ***Articles:***	69.240 0	99.958 0	-
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Continued ICS design effort and delivery of 6 ICS Type VII Emulators to support early integration, prior to the ARV-A (L) Integrated Qualification Test (IQT). Thereafter, delivered 3 ICS Type VII brassboards for integration with the ARV-A(L). Deliveries of these items were scheduled to be made to various Network SILs, platform developers, platform integrators, and test facilities. ICS Software: FQT?ed and Released ICS Build 3.0 Real Time Operating System (OS) and Linux Version 5 Operating System (OS) in 1Q FY10 to support the Network System Qualification Tests (NSQTs). ICS Build 3.0 included enhancements to Application Programmer Interface (API) Definition. Conducted ICS Build 3.5 objectives (LCO) and architecture (LCA) reviews in 3Q-4Q FY10. Conducted Preliminary and Critical design reviews (PDR (2QFY10), CDR (4QFY10) for Large Network Processor Version 2 (LNP V2) and Small Network Processor (SNP). ICS Build 3.5 includes enhancements to Volume Management State Management; Power Management; Platform Management and Linux OS Extensions. ***FY 2011 Plans:*** Continue ICS design effort and deliver 10 LNPV2 Brassboard prototypes, 2 LNPv2 emulators, 3 hybrid ICS and 3 SNP brassboard prototypes. Both the LNPv2 and SNP expect to leverage off of ICS LRU developments bringing high level routing, extended processing, memory, encrypted storage and VITA standard LRM's to the type VI chassis. The LNP V2 will be less expensive than the Type VI and will provide greater capability (including some hardware encryption and router/firewall capabilities). The SNP is the down sized version of the LNPv2 designed to bring the minimal network connectivity to BCT platforms like Trucks. Build, qualify test and deliver 26 Large Network Processor Version 2, 6 type VII BrassBoards, and 7 type VII Prototypes for the ARV-A(L). ICS Software: For CP 13/14, begin coding, unit test and integration of ICS Build 3.5 software, to include the Real-Time (RTOS) and L5OS (RedHat Enterprise Linux 5.4 derivative) operating systems (OS). Deliver 36 Man-packable Network Integration Kit (MNIK)s. The MNIK converts the messages between radio networks, and routes the message to recipients on the second radio system. This automated message handling creates an interoperable link between systems/subsystems. The MNIK provides range extension, data mediation, proxy, filtering and profile management to the dismounted soldier's unit. These functions enable the dismounted soldier's network to connect to a geographically remote mobile Command Post, a Commander's vehicle, a Tactical Operations Center and/or another MNIK System. The MNIK will consist of the following components as described in			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
the Buyer Specification., Computer Subsystem (CSS), Radio Subsystem (RSS), Wrist Control Unit (WCU), Power Subsystem (PSS),Interconnecting Cables, Load Bearing Equipment (LBE), and MNIK Software Subsystem (MSS). (FY 11 current funding requirement is $57,976 based on RMD XXX and anticipated ADM terminating the Network activity in 2nd Quarter FY 11.)			
Title: Contractor Network Integration (SW/SW and SW/HW) IBCT Increment 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Continued integration of Battle Command System (BCS) Increment 1 software deliveries (engineering drops and final build) prior to Increment 1LUT-10. Conducted Hardware/Software integration of the BCS with the Integrated Computer System (ICS) Type VI variant and the Ground Mobile Radio (GMR) as part of the Network Integration Kit (NIK), these activities included integration, test and verification activities to make sure successful integration is achieved. In addition to lab testing, conducted field testing for each BCS Engineering Release integrated with the NIK. Resolved any remaining NIK and BCS integration issues, including the verification of approximately 600 moderate-to-high-level software problem reports (SPR's), impacting software functionality and reliability, and completed a Network Systems Qualification Test (NSQT) on the NIK in 3Q FY10 to support Increment 1 LUT-10, with a delta NSQT taking place in 1QFY11 for enhancements to algorithms for combining sensor data, updates to the OS and resolutions of SPRs discovered during LUT 10 BCS Increment 1 included integration of SOSCOE Build 2.7 with the Integrated Computer System (ICS) Build 2.0 Operating System (OS), incorporating the Cross Domain Guard (CDG).	17.460 0	-	-
Title: Contractor Network Integration (SW/SW and SW/HW) CP 13/14 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Performed integration and test among each of the CP 13/14 Phase 1 software subsystems as part of Battle Command System (BCS) Integration/Test effort. This included checking out and integrating incremental deliveries of software capability that were delivered by each of the Battle Command application developers. This incremental approach identified gaps in interfaces between each of the software applications or defective functionality which are later addressed through the disposition, implementation and closure of Software Problem Reports (SPRs). Additionally, conducted hardware/software Integration. Integrated and performed lab testing of the CP 13/14 Phase 1 BCS with each of the computer and radio configurations for the NIK, ARV-A(L), UAS CL 1, SUGV and the Centralized Controller (CC) systems to ensure proper integration and functionality. The integration and qualification of the BCS is necessary for the functionality provided by individual software applications to be realized	35.799 0	54.074 0	-

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APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
as operational capability by the Warfighter. This approach also ensures that the BCS, computer hardware and radios perform reliably during platform system testing and thereby reduces integration-related cost and schedule risk. ***FY 2011 Plans:*** Continue integration of CP 13/14 BCS Phase 1 software capability provided by each of the Battle Command, Fusion, Logistical and Embedded Training application developers until contract termination prior to qualification of software. Provide Integration Releases (IRs) in 2QFY11 for early integration of the CC in conjunction with the unmanned systems and the NIK. BCS Phase 1 will include integration of SOSCOE Builds 10.1 through 10.6 with the latest versions of the ICS Operating Systems (OS). For CP 13/14 Phase 2 software development, integrate the new software capability provided by incremental deliveries from each of the Battle Command, Fusion, Logistical and Embedded Training application developers until contract termination. Provide early integration of a subset of capabilities planned for Phase 2 in 2QFY11. This will include integration of SOSCOE Builds 10.6 and 10.7 and the latest versions of the ICS OS. (FY 11 current funding requirement is $31,363 based on RMD XXX and anticipated ADM terminating the Network Software development activity in 2nd Quarter FY 11 and integration of Network components by the end of FY11.)			
Title: Government GFX IBCT Increment 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Network Analysis and Integration Laboratory (NAIL) is a government laboratory that performs inherent government end-to-end (E2E) network design, integration, and performance-risk reduction analysis in support of Brigade Combat Team Modernization (BCTM). NAIL performed an assessment of IBCT Increment 1 network performance capability and existing design performance gaps, and delivered multiple Increment 1 Network Design Solutions (Radio allocations, Network configuration, traffic routing, Voice, Scalability) that optimized the performance of the Warfighter?s network. 1) Simulated all aspects of the BCTN Network Architecture to include Increment 1 scenarios, radio waveforms, battle command applications traffic load on the network, etc. 2) Determined IBCT network connectivity requirements. 3) Developed / delivered Increment 1 Radio Waveform Allocations, defining the distribution/positioning of Army Waveforms on platforms including Subnet Plan and Frequency Channel Assignment, and developed Network Routing Architecture allowing warfighter and platform applications to be able to talk to each other. 4) Provided Common Controller (CC) Tele-Operations of Small Unmanned Ground Vehicle (SUGV) and Large Robotic Vehicle Tele-Operation Operational Effectiveness and determined radio performance requirements for Tele-Operations Warfighter Operation Effectiveness. 5) Designed, prototyped and delivered a Voice Architecture and Voice Signaling Design for BCTM to include design and integration of BCTM Voice Cross-banding System Software on Increment 1 Network Experiment resulting in the ability to for a warfighter to talk across a network with different radio waveforms and report critical Position Location Information (PLI),	13.131 0	-	-

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APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Situation awareness (SA), and imagery in real time during the mission. 6) Optimized Battle Command Applications network traffic through modeling and simulation analyzes, prediction, and regulating the behavior of data transmitted over that network. Delivered Traffic Engineering (TE) Design in support of Increment 1 Battle Command (BC), TE Requirements for SOSCOE, and Offered Load (OL) Database Development, defining the total Increment 1 traffic over the network. Mitigated and established network traffic requirements in support of FY10 Limited User Test (LUT). 7) Assessed performance of Warfighter Network transport middleware (SOSCOE) and mitigated the risk of miss-configuration for scalability by obtaining the optimal configuration. The NAIL deliverables mitigate network performance risk and enable the warfitghter with an optimized Network that integrates Battle Command applications, sensors, platforms and services allowing for timely dissemination of orders, Battlefield PLI and situation awareness. An Evaluation of Radio Alternatives for SUGV and Common Controller was completed. SRW demonstrated performance potential resulted in the joint decision by JPEO JTRS and PEO I to fund the improvement of the SRW waveform to add tele-operations capability.			
Title: Government GFX CP 13/14	32.774	31.746	-
Articles:	0	0	
Description: Funding is provided for the following effort			
FY 2010 Accomplishments: The NAIL performed CP13/14 Network design maturity assessment and delivered data products that optimized the network, mitigated technical risk, cost and schedule to the Prime Contractor and the Army in support of BCTM. Delivered data in support of BCTM Program Network Technical Interchange Meetings (TIMs), System/Subsystem Design Description (SSDD), Limited User Tests (LUTs), Initial Operational Test & Evaluation (IOTE), Network CDR (NCDR) and SoS CDR. 1) Determined CP 13/14 Network connectivity performance, capabilities requirements. 2) Provided technical guidance to Prime on evolution of CP 13/14 network design and performance requirements of Network A Specification and system integration of the WLS. 3) Performed Network Design Maturity Risk Assessment and Risk Mitigation for CP 13/14 and delivered to Prime and Army: Subnet Plan, Frequency Channel Assignment, Routing Architecture to include Multicast/Unicast for Brigade per Operational Mission Nets, Internet Protocol (IP) Address Book and Assignment Schema. 4) Produced Voice Dismount Software, and integrated Voice System Software with Ground Soldier System (GSS), Warfighter Information Network-Tactical (WIN-T), and Network Interface Kits (NIKs). 5) Developed/delivered TE Design for CP 13/14 BC, TE Requirements for CP 13/14 SOSCOE software builds, and OL Database Development and Specification of CP 13/14 Traffic on the Network (Enables the Warfighter with optimized and efficient Battle Command services across the network) 6) Delivered Software Load Allocation definition for all CP 13/14 BC Software on NIK Configurations and delivered Reliable Network Transport Design for NIK/ Force XXI Battle Command Brigade and Below (FBCB2) BC Environment, utilizing Ground Mobile Radio (GMR) and WIN-T for Communications Transport.			
FY 2011 Plans:			

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APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604665A: *FCS Sustainment & Training R&D*	**PROJECT** FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
NAIL shall expand the use of the state of the art high fidelity network transport models and Battle Command representations, update the M&S Baseline with Shared Code Models utilizing actual Wideband Network Waveform (WNW) and Soldier Radio Waveform (SRW) source code, enhance Waveform Virtualization (execution of waveform software in a simulation environment separate for the underlying hardware resource) capability and instrumentation. Parameterize tactical network stimulus capability utilizing the latest Operational OL representation of total traffic over the network to mitigate and optimize the performance of the network. The NAIL shall perform network maturity assessment, scalability and the end-to-end network performance of the CP 13/14 Network by performing large scale live, virtual and constructive experimentation activities. Shall result in the physical characteristics and performance properties of the network in support of risk mitigation for System of System (SoS) CDR, Initial Operational Test & Evaluation (IOTE), and Limited User Tests (LUT). 1) Enhance the design /development of Network Routing Architecture, Voice BCTM cross-banding architecture and WLS for BCTM CP13/14. Provides optimization of the network traffic engineering and network planning requirements and enables the Warfighter with an optimized scalable network capable of passing communications service across multiple radio waveform types. 2). Conduct thorough Network maturity assessment, based on PEO I testing and PM JTRS Waveform Testing. 3). Conduct data reduction and analysis, accessioning network and Battle Command (BC) applications scalability, reliability and robustness upon mobility. 4) Continually assess and update the performance and scalability of SOSCOE in tactical MANET environment. 5) Continue design and integration of the Army's low-cost dismount solution for robotics platform control, aerial surveillance and Command and Control (C2) / Situation Awareness / Voice integration. Mitigates network performance risk and enables the warfitghter with a optimized BCTM Network. To provide a tele-ops capable Type 2 certified radio/waveform for Multi Mission Unmanned Ground Vehicle, the jointly developed SRW 1.1 waveform will be ported to the GMR. (FY 11 current funding requirement is $48,910 based upon RMD XXX and PEO I's new mission of Network Integration)			
Title: Contractor Fee ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2011 Plans:*** Contractor prime fee is included in all prior accomplishment statements. (This accomplishment should be equal to $0).	-	52.604 0	-
Title: Termination Cost ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Special Termination Costs for MGV, Class IV and MULE Network Components	52.301 0	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604665A: *FCS Sustainment & Training R&D*	**PROJECT** FC6: *BCT Network Hardware & Software*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
These costs are paid to the contractor and subcontractors as per FAR 31.205 for; Severance Pay, Reasonable costs continuing after termination, Settlement of expenses, and the costs to return field service personnel from remote or liaison sites. In addition to the FAR termination costs this element includes Disposition of Terminated Material to other Army agencies. These funds also include all cost for packaging, transporting, and short and long term storage of selected materials IAW FAR 45/49. All Secure equipment was dispositioned IAW NSA requirements.			
Accomplishments/Planned Programs Subtotals	685.524	610.389	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 0604646A: *Non-Line of Sight - Launch System*	88.205	81.247								0.000	169.452
• 0604660A: *FCS Manned Ground Vehicles & Common Grd Vehicle Components*	231.103									0.000	231.103
• 0604661A: *FCS System of Systems Engr & Program Management*	847.011	568.711	383.872		383.872		518.188	648.502	352.069	0.000	3,808.398
• 0604662A: *FCS Reconnaissance (UAV) Platforms*	92.444	50.304								0.000	142.748
• 0604663A: *FCS Unmanned Ground Vehicles*	122.418	249.948	143.840		143.840		106.480	131.880	32.009	0.000	911.047
• 0604664A: *FCS Unattended Ground Sensors*	39.664	7.515	0.499		0.499					0.000	47.678
• WTCV G86200: *FCS Spin Out Program*	210.909									0.000	210.909
• ACFT A00015: *BCT Unmanned Aerial Veh (UAVs) Incr 1*		44.206								0.000	44.206
• OPA B00001: *BCT Unattended Ground Sensor*		29.718								0.000	29.718
• OPA B00002: *BCT Network*		176.543								0.000	187.068
• OPA B00003: *BCT Network Incr 2*							229.528	187.955	179.653	0.000	768.167

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPA F00001: *BCT Unmanned Ground Vehicle*		20.046	24.805		24.805					0.000	48.096
• OPA F00002: *BCT Unmanned Ground Vehicle Incr 2*			11.924		11.924		422.192	834.171	696.603	0.000	2,414.904
• OPA G80001: *BCT Training/ Logistics/Management*		61.581	149.308		149.308		49.792	28.259		0.000	435.142
• OPA G00002: *BCT Training/ Logistics/Management Incr 2*			57.103		57.103		441.250	347.466	273.354	0.000	1,308.265

D. Acquisition Strategy

A 23 June 2009 Acquisition Decision Memorandum (ADM) directed the cancellation of the FCS (BCT) acquisition program. It also instructed the Army to transition to an Army modernization plan consisting of a number of integrated acquisition programs. At that time, the SO E-IBCT was designated a pre-MDAP, with a Milestone C decision scheduled for the first quarter FY10. A follow-on ADM was issued 9 July 2009. In it, the Army was directed to continue efforts to improve the brigades beyond the Early Infantry Brigade Combat Team acquisition until a standalone program(s) is defined later in 2010. An Army BCT Modernization Defense Acquisition Board (DAB) was then held on October 16, 2009 to review the Army's plans for the post-Future Combat Systems efforts and confirm the Army brigade modernization acquisition plans were consistent with the Secretary of Defense's guidance. An ADM issued after this DAB stated: "The approach, for Increment 1 (Early-Infantry Brigade Combat Team (E-IBCT)) and the Ground Combat Vehicle (GCV) effort, is consistent with the Secretary's guidance and each is being positioned for more in-depth review and acquisition decisions later in 2009." The Increment 1 E-IBCT Milestone C took place 22 December 2009 and was approved in an ADM dated 24 December 2009. The Program Executive Office-Integration (PEO-I) has modified the existing contract to be compliant with the aforementioned ADMs. On 12-Jan 2011 a follow on DAB approved procurement of brigades 2 & 3. This budget justification reflects the latest OSD DAB for Increment 1 (E-IBCT) program and the follow-on IBCT modernization program as approved in RMD XXXX.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SoSCOE / INFO MGT SYSTEM SOFTWARE	Various	THE BOEING COMPANY:St. Louis, MO	-	66.466		-		-		-	Continuing	Continuing	Continuing
COMMUNICATIONS SYSTEMS SOFTWARE & NETWORK MGT SOFTWARE	Various	THE BOEING COMPANY,:St. Louis, MO	-	59.143		-		-		-	Continuing	Continuing	Continuing
BATTLE COMMAND SOFTWARE	Various	THE BOEING COMPANY,:ST LOUIS, MO	-	118.011		-		-		-	Continuing	Continuing	Continuing
FUSION SOFTWARE	Various	THE BOEING COMPANY,:ST LOUIS, MO	-	12.510		-		-		-	Continuing	Continuing	Continuing
EMBEDDED TRAINING SOFTWARE	Various	THE BOEING COMPANY,:ST LOUIS, MO	-	14.455		-		-		-	Continuing	Continuing	Continuing
RANGE EXTENSION RELAY	Various	THE BOEING COMPANY,:ST LOUIS, MO	-	-		-		-		-	Continuing	Continuing	Continuing
CONTRACTOR LOGISTICS PRODUCTS APPLICATION INTEGRATION	Various	THE BOEING COMPANY,:ST LOUIS, MO	-	30.444		-		-		-	Continuing	Continuing	Continuing
GROUND SENSOR INTEGRATOR HARDWARE	Various	THE BOEING COMPANY,:ST LOUIS, MO	-	-		-		-		-	Continuing	Continuing	Continuing
AIR SENSOR HARDWARE	Various	THE BOEING COMPANY,:ST LOUIS, MO	-	-		-		-		-	Continuing	Continuing	Continuing
COMMUNICATION HARDWARE - AIR & GROUND	Various	THE BOEING COMPANY,:ST LOUIS, MO	-	20.840		-		-		-	Continuing	Continuing	Continuing
COMMON CONTROLLER, HARDWARE AND SOFTWARE	Various	THE BOEING COMPANY:ST LOUIS, MO	-	50.138		-		-		-	Continuing	Continuing	Continuing
	Various		-	99.958		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ICS COMPUTER PROCESSING HARDWARE AND SOFTWARE		THE BOEING COMPANY,:ST LOUIS, MO											
CONTRACT NETWORK INTEGRATION (SW/SW) AND SW/HW)	Various	THE BOEING COMPANY:ST LOUIS, MO	-	54.074		-		-		-	Continuing	Continuing	Continuing
Government GFX	Various	PEO I:Warren, MI	-	31.746		-		-		-	Continuing	Continuing	Continuing
Contractor Fee	Various	BOEING:ST LOUIS, MO	-	52.604		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	610.389		-		-		-			

Remarks

1: Subcontractor: Lockheed Martin Integrated Systems and Solutions, San Diego, CA; (ISR Level 1 Fusion)
2: Subcontractor: Northrop Grumman Network Management Systems, Carson, CA; (Network Mgt Sys)
3: Subcontractor: Boeing Mesa, Mesa, AZ; (Warfighter Machine Interface)
4: Subcontractor: Northrop Grumman Mission Systems, Carson, CA; (Logistics Decision Support Software)
5: Subcontractor: Raytheon Network Centric, Fort Wayne, IN; (Battle Command & Mission Execution)
6: Subcontractor: Network Centric Systems/Austin Info Systems, Austin, TX; (Situational Understanding)
7: Subcontractor: General Dynamics C4 Systems, Scottsdale, AZ; (Sensor Data Mgt)(Planning & Preparation Services)
8. Subcontractor: Raytheon Network Centric Systems, Plano, TX; (Ground Sensor Integrator)
9. Subcontractor: Northrop Grumman Electronic Sys CMS, Belcamp, MD; (Air Sensor Integrator)
10. Subcontractor: BAE Systems, Wayne, NJ; (Air & Ground Communication Integration)
11. Subcontractor: General Dynamics Adv Info Sys, Bloomington, MN; (Integrated Computer Systems)
12. Subcontractor: Honeywell Defense & Electronics System, Albuquerque, NM; (Platform Soldier Mission Readiness System)
13. Subcontractor: IBM, Bethesda, MD; (Logistics Data Management Systems)
14. Subcontractor: Lockheed Martin Missiles and Fire Control, Dallas, TX
15. Subcontractor: Textron, Willington, MA

NOTE: The FY10 funding does not include the $52.3M which was approved by congress in Reprogramming Action 10-11 PA.

Contractor Sensor Development

FY10: All platform specific sensor development costs for the Unattended Ground Sensor (UGS), Unmanned Ground Vehicle (UGV), and Reconnaissance (UAV) Platform are also included in this Program Element.

FY11: All Platform specific sensor development costs are included in the appropriate Platform Program Element.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR	Various	Various:Various	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	-		-		-		-			

Remarks

Government SEPM

FY10/11: All platform specific Government Engineering and PM costs for this project are included in 0604661 FCS SoS Engineering and Program Management Program Element (FC2).

FY12: All platform specific Government Engineering and PM costs for this project are included in this Program Element.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GOVERNMENT TEST AND M&S	Various	PEO I:Warren, MI	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	-		-		-		-			

Remarks

FY10-FY12: All System of System Test and Evaluation costs for this project are included in 0604661 FCS SoS Engineering and Program Management Program Element.

FY10/ F11: All Platform specific Test and Evaluation costs for this project are included in 0604661 FCS Sos Engineering and Program Management Program Element.

FY12: All Platform specific Test and Evaluation costs for this project are included in this Program Element.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	610.389		-		-		-			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604665A: *FCS Sustainment & Training R&D*	PROJECT FC6: *BCT Network Hardware & Software*

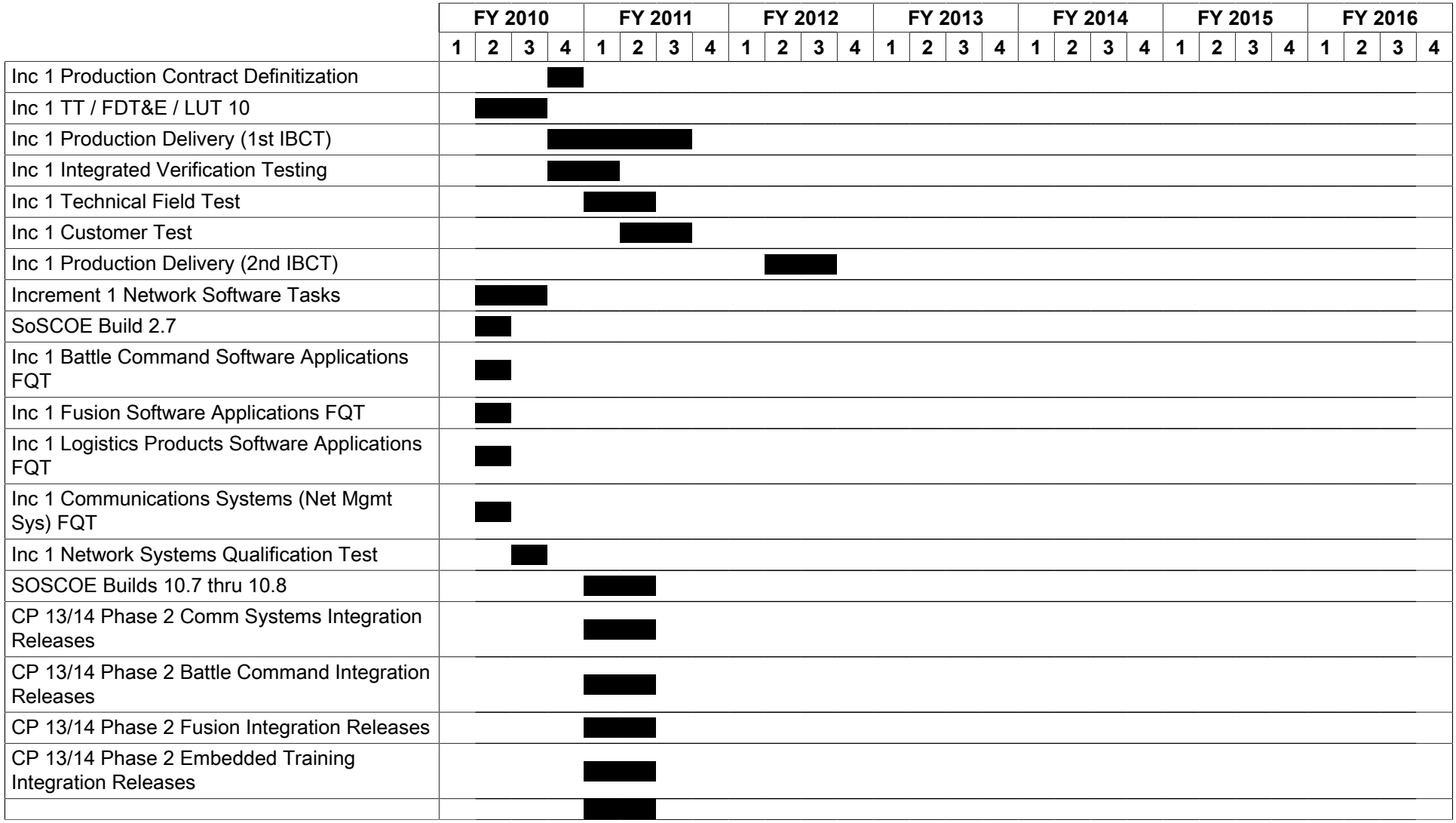

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604665A: *FCS Sustainment & Training R&D*	**PROJECT** FC6: *BCT Network Hardware & Software*

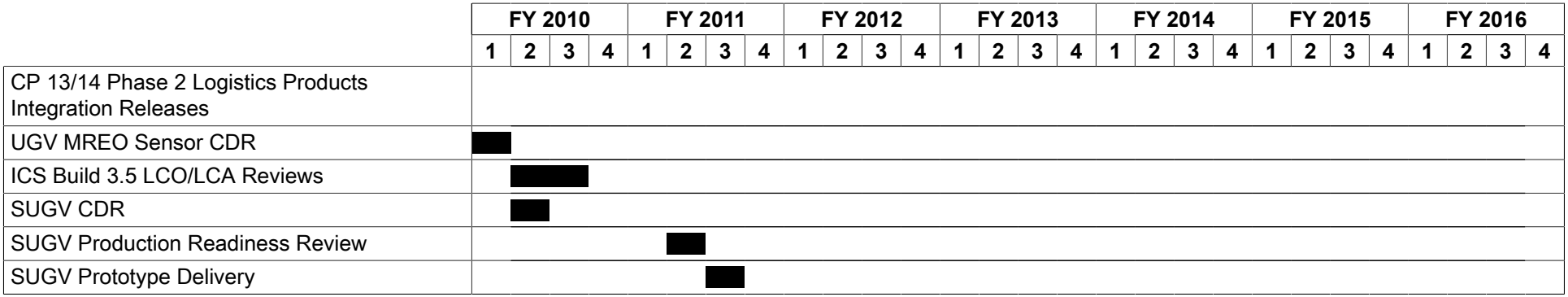

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604665A: *FCS Sustainment & Training R&D*	**PROJECT** FC6: *BCT Network Hardware & Software*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Inc 1 Production Contract Definitization	4	2010	4	2010
Inc 1 TT / FDT&E / LUT 10	2	2010	3	2010
Inc 1 Production Delivery (1st IBCT)	4	2010	3	2011
Inc 1 Integrated Verification Testing	4	2010	1	2011
Inc 1 Technical Field Test	1	2011	2	2011
Inc 1 Customer Test	2	2011	3	2011
Inc 1 Production Delivery (2nd IBCT)	2	2012	3	2012
Increment 1 Network Software Tasks	2	2010	3	2010
SoSCOE Build 2.7	2	2010	2	2010
Inc 1 Battle Command Software Applications FQT	2	2010	2	2010
Inc 1 Fusion Software Applications FQT	2	2010	2	2010
Inc 1 Logistics Products Software Applications FQT	2	2010	2	2010
Inc 1 Communications Systems (Net Mgmt Sys) FQT	2	2010	2	2010
Inc 1 Network Systems Qualification Test	3	2010	3	2010
SOSCOE Builds 10.7 thru 10.8	1	2011	2	2011
CP 13/14 Phase 2 Comm Systems Integration Releases	1	2011	2	2011
CP 13/14 Phase 2 Battle Command Integration Releases	1	2011	2	2011
CP 13/14 Phase 2 Fusion Integration Releases	1	2011	2	2011
CP 13/14 Phase 2 Embedded Training Integration Releases	1	2011	2	2011
CP 13/14 Phase 2 Logistics Products Integration Releases	1	2011	2	2011
UGV MREO Sensor CDR	1	2010	1	2010
ICS Build 3.5 LCO/LCA Reviews	2	2010	3	2010

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604665A: *FCS Sustainment & Training R&D*	**PROJECT** FC6: *BCT Network Hardware & Software*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
SUGV CDR	2	2010	2	2010
SUGV Production Readiness Review	2	2011	2	2011
SUGV Prototype Delivery	3	2011	3	2011

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	56.992	52.549	59.265	-	59.265	51.417	52.175	18.047	18.003	Continuing	Continuing
L67: *SOLDIER NIGHT VISION DEVICES*	21.637	23.891	23.984	-	23.984	18.979	18.470	18.047	18.003	Continuing	Continuing
L70: *NIGHT VISION DEV ED*	21.122	5.183	12.300	-	12.300	11.013	5.117	-	-	Continuing	Continuing
L75: *Profiler*	5.219	6.014	2.595	-	2.595	-	-	-	-	Continuing	Continuing
L76: *Dismounted Fire Support Laser Targeting Systems*	9.014	17.461	-	-	-	-	-	-	-	Continuing	Continuing
L79: *JOINT EFFECTS TARGETING SYSTEMS (JETS)*	-	-	20.386	-	20.386	21.425	28.588	-	-	Continuing	Continuing

Note

Program Change Summary Explanation:

Fiscal Year 2010: Program Decrease - $119 thousand realigned to higher priority requirements.

Fiscal Year 2012: Program Increase - $6.958 million for efforts associated with Thermal Imaging Engine development.
Program Increase - $2.929 million for development of the Joint Effects Targeting System (JETS)
Program Decrease - $91 thousand realigned to higher priority requirements.

A. Mission Description and Budget Item Justification

This program element provides night vision/reconnaissance, surveillance and target acquisition technologies required for U. S. defense forces to engage enemy forces twenty-four hours a day under conditions of degraded visibility due to darkness, adverse weather, battlefield obscurants, foliage and man-made structures. These developments and improvements to high performance night vision electro-optics, radar, laser, and thermal systems and integration of related multi-sensor suites will enable near to long range target acquisition, identification and engagement to include significant fratricide reduction, which will improve battlefield command and control in "around-the-clock" combat operations.

Project L67 focuses on night vision electro-optical, laser, and other target identification and location equipment for a variety of Future Combat System of Systems (FCS) Units of Action/Employment and Future Force soldiers. This project includes the enhanced night vision goggle, modular Horizontal Technology Insertion (HTI) multi-function laser activities, and thermal upgrades to include an uncooled medium thermal weapon sight.

Project L70 focuses on night vision, reconnaissance, surveillance and target acquisition (RSTA) sensor and suites of sensors to provide well-defined surveillance and targeting capabilities for a variety of Current, Modular, and Future Force platforms. This project includes: System Development and Demonstration of the Thermal

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*

Imaging Engine (transitioned from an Advanced Technology Objective); night vision sensor acquisition support of Unattended Ground Sensors and ASTAMIDS; development of a Standard Ground Station for Persistent Surveillance Sensors (RAID and PTDS) and improvements and enhancements to Persistent Surveillance System (PSS).

Project L75 focuses on development of Profiler Block enhanced capabilities for meteorological measurement sensors and data. Improvements have reduced the footprint (less soldiers/vehicles) and complexity of the system, improved performance (accuracy), improved survivability, connectivity, no balloon sensor, multiple initialization data, and terrain visualization. The improved MET message data will increase lethality by enabling artillery a greater probability of first round hit with indirect fire systems. Profiler Block III will provide a networked laptop configuration while further reducing the system's logistics footprint with the elimination of the High Mobility Multi-purpose Wheeled Vehicle (HMMWV) mounted shelter and trailer. The Block III configuration consist of one computer with a common operating system co-located within the Tactical Operation Center (TOC) with a direct interface to the TOC Local Area Network (LAN). The system will be able to provide Gridded MET along with autonomously generate MET messages upon request from AFATDS eliminating the need for a dedicated MET section crew. The Army will realize a significant cost avoidance with the improved configuration.

Project L76 focuses on the engineering development of technologies for insertion into Laser Target Locators and Laser Designators to improve overall performance of those systems and reduce weight. Technologies developed under this project will benefit the Lightweight Laser Designator Rangefinder (LLDR, AN/PED-1), various Laser Target Locators, and future precision targeting programs based on emerging Army requirements. In addition, this line will support improved accuracy (reduced target location error) in support of coordinate seeking weapons, such as Joint Direct Attack Munition (JDAM) and Excalibur.

Project L79 focuses on development of the Joint Effects Targeting System (JETS). The goal is to develop a lightweight set of mission equipment for the dismounted forward observers and controller (including Joint Tactical Air Controllers - JTAC) that will provide means to call for fire and control delivery of air, ground and naval surface fire support using precision/near-precision/non-precision munitions and effects (lethal and non-lethal). JETS consist of two subsystems, the Target Location Designation System (TLDS) and the Target Effects Coordination System (TECS).

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	57.111	52.549	49.469	-	49.469
Current President's Budget	56.992	52.549	59.265	-	59.265
Total Adjustments	-0.119	-	9.796	-	9.796
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	9.796	-	9.796
• Other Adjustments 2	-0.119	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L67: *SOLDIER NIGHT VISION DEVICES*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
L67: *SOLDIER NIGHT VISION DEVICES*	21.637	23.891	23.984	-	23.984	18.979	18.470	18.047	18.003	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project develops, improves and miniaturizes high performance night vision electro-optics, thermal and laser systems. It also provides for systems integration of related multi-sensor suites to enable near to long-range target acquisition and engagement as well as improved battlefield command and control in around-the-clock combat operations. It focuses on adapting demonstrated technologies that can bring improvements to the dismounted Soldiers' equipment. This project develops or enhances equipment that provides the individual Soldier's day/night situational awareness and individual targeting capability, sniper fire detection and location capability, and integrates improved target location and self-location capability to eliminate friendly fire incidents. The Enhanced Night Vision Goggle(ENVG)is a head/ helmet mounted night vision system for the individual Soldier. Other efforts include a Soldier-borne gunshot detection system to determine location of sniper gunfire, development of a Green Laser Interdiction System (GLIS) to deter potential combatants and the development of Sense Through The Wall (STTW) technology giving Soldiers the ability to detect threats through walls during Military Operations in Urban Terrain (MOUT). This project also develops a Family of Weapon Sights(FWS), with fused electro-optical performance, including focal plane and high resolution micro-display FWS enabling technologies increasing product resolution, range, and imaging performance.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Enhanced Night Vision Goggle (Optical) ***Articles:*** ***Description:*** The AN/PSQ-20 ENVG is a helmet-mounted passive device for the individual Soldier that fuses image intensification and long wave infrared imagery into a single, integrated image. ***FY 2010 Accomplishments:*** AN/PSQ-20 ENVG (O) Program Support ***FY 2011 Plans:*** Initiate Product Qualification Test (PQT) for multiple sources for the AN/PSQ-20 (Enhanced Night Vision Goggle Optical). ***FY 2012 Base Plans:*** Complete PQT for multiple sources of AN/PSQ-20 (Enhanced Night Vision Goggle Optical).	0.148 0	2.000 0	1.500	-	1.500
Title: Green Laser Interdiction System (GLIS)	0.478	3.423	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L67: *SOLDIER NIGHT VISION DEVICES*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Articles:	0	0			
Description: The Green Laser Interdiction System (GLIS) is a rifle-mounted laser that allows the Soldier to interdict hostile actions through non-lethal effects. ***FY 2010 Accomplishments:*** Initiate the development of lightweight multi-purpose lasers with a nonlethal method of warning a vehicle operator or gaining their attention beyond 75 meters and to identify whether friend or foe (IFF). ***FY 2011 Plans:*** Complete the development of lightweight multi-purpose lasers with a nonlethal method of warning a vehicle operator or gaining their attention beyond 75 meters and to identify whether friend or foe (IFF).					
Title: Enhanced Night Vision Goggle (Digital)	-	1.921	8.281	-	8.281
Articles:		0			
Description: The ENVG(D) is a helmet-mounted passive device for the individual Soldier that fuses image intensification and long wave infrared imagery into a single, integrated image with digital technology and interconnectivity. ***FY 2011 Plans:*** Continue the integration, testing and evaluation of demonstrated digital enhanced night vision technologies to support Engineering and Manufacturing Development (EMD). ***FY 2012 Base Plans:*** Initiate integrated system design for ENVG (D).					
Title: Sense Through The Wall (STTW)	19.744	1.222	-	-	-
Articles:	0	0			
Description: The STTW is a handheld sensor that provides dismounted Soldiers with the capability to detect and locate personnel targets through walls from a standoff distance. ***FY 2010 Accomplishments:*** Initiate developmental and operational test activities for STTW representative test articles. ***FY 2011 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L67: *SOLDIER NIGHT VISION DEVICES*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Complete developmental and operational test activities for STTW representative test articles.					
Title: Family of Weapons Sights (FWS) ***Articles:*** ***Description:*** FWS is a family of weapon sights that will utilize advances in thermal and image intensified technologies to produce an Individual, Crew-Served, and Sniper weapon sights operable in-line with a day optic and stand-alone mode. FWS will include fused multi-band imagery and rapid target acquisition with ballistic equations, providing the Soldier with improved capabilities during day and night operations. ***FY 2011 Plans:*** Initiate the development of the Family Weapon Sight (FWS) program. ***FY 2012 Base Plans:*** Continue the development of the Family of Weapon Sights (FWS) systems, which includes clip-on and fused weapon sights, rapid target acquisition capabulity, and ballistic equations.	-	4.282 0	9.219	-	9.219
Title: Focal Plane Arrays (FPA) ***Articles:*** ***Description:*** This program invests in the development of smaller pixel (12 micron) uncooled long-wave infrared focal plane arrays in multiple large format sizes. These arrays will improve sensitivity, clarity, and range, while simultaneously reducing the size, weight and power consumption of the weapon sights. ***FY 2010 Accomplishments:*** Initiate the development, testing and evaluation of improved Focal Plane Arrays (FPA), with larger array sizes, improved sensitivity, clarity and range. Also develop next generation FPA with smaller, 12 micron pitch. ***FY 2011 Plans:*** Initiate the development, testing and evaluation of improved Focal Plane Arrays (FPA), with smaller pixels (12 micron). Develop next generation 640x480 format FPA and ROIC. ***FY 2012 Base Plans:*** Continue the development, testing and evaluation of improved Focal Plane Arrays (FPA), with smaller pixels 912 microns) and larger format (1600x1200 and larger).	1.267 0	4.869 0	3.904	-	3.904
Title: Individual Gunshot Detector (IGD)	-	2.445	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604710A: *Night Vision Systems - Eng Dev*	**PROJECT** L67: *SOLDIER NIGHT VISION DEVICES*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Articles:		0			
Description: IGD is a self-contained passive acoustic system based on a small rugged light-weight low-power sensor/signal processing core that has the capability to detect and localize the source of small arms fire. ***FY 2011 Plans:*** Complete the development of sniper fire detection and location systems, using portable sensors on Soldiers to locate gunfire.					
Title: Optical Augmentation (OA) Sniper Detection	-	3.729	1.080	-	1.080
Articles:		0			
Description: This Sniper Detection System is designed to detect and locate optical scopes used by snipers or optronic sight systems on the battlefield or urban zone. ***FY 2011 Plans:*** Continue the development of laser defense capabilities for sniper detection/laser warning system man portable ***FY 2012 Base Plans:*** Continue the development of laser defense capabilities for sniper detection/laser warning system man portable					
Accomplishments/Planned Programs Subtotals	21.637	23.891	23.984	-	23.984

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• SSN 36400: *Helmet Mounted Enhanced Vision Devices (HMEVD)*	86.306	8.098	117.442		117.442		149.768	172.118	219.384	Continuing	Continuing
• SSN 22900: *Thermal Weapon Sight (TWS)*	306.044	248.899	186.859		186.859		78.481	94.415	139.004	Continuing	Continuing
• SSN 41500: *Sniper Night Sight (SNS)*	0.211	12.880	4.892		4.892				10.883	Continuing	Continuing
• SSN K35000: *Multi-Function Aiming Light (MFAL)*	0.546	21.434								0.000	21.980
		24.939	47.498	10.000	57.498		37.707			0.000	161.191

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L67: *SOLDIER NIGHT VISION DEVICES*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• SSN KA2300: *Sense Through The Wall (STTW)*											
• SSN K35110: *Small Tactical Optical Rifle Mounted (STORM)*	23.236	8.520	10.227		10.227		15.001	29.643	32.837	Continuing	Continuing
• SSN AD5311: *Green Laser Interdiction System (GLIS)*			25.356		25.356		3.251			0.000	35.709

D. Acquisition Strategy

The various developmental programs in this project will continue to exercise competitively awarded contracts using best value source selection procedures.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L67: *SOLDIER NIGHT VISION DEVICES*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Enhanced Night Vision Goggles (Optical) ENVG (O)	Various	TBD:TBD	-	1.421		8.281		-		8.281	Continuing	Continuing	Continuing
Multi-purpose Laser	Various	TBD:TBD	-	3.304		-		-		-	Continuing	Continuing	Continuing
Sense Through The Wall (STTW)	Various	TBD:TBD	-	1.222		-		-		-	Continuing	Continuing	Continuing
Laser Detection/Laser Warning Device	Various	Fibertek:HERNDON, VA	2.428	3.729		-		-		-	Continuing	Continuing	Continuing
Family of Weapon Sights (FWS)	Various	CECOM AQC CENTER:ALEXANDRIA, VA	-	4.401		5.671		-		5.671	Continuing	Continuing	Continuing
Focal Plane Arrays (FPA)	Various	DOI:FT HUACHUCA, AZ	17.543	4.869		-		-		-	Continuing	Continuing	Continuing
Focal Plane Arrays (FPA)	SS/CPFF	CERDEC:ABERDEEN, MD	-	-		4.648		-		4.648	Continuing	Continuing	Continuing
Sniper Fire Detection and Location Technology	Various	Fibertek:HERNDON, VA	1.790	2.445		-		-		-	Continuing	Continuing	Continuing
		Subtotal	21.761	21.391		18.600		-		18.600			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Small Business Innovative Research/ Small Business Technology Transfer Programs.	Various	TBD:TBD	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	-		-		-		-			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L67: *SOLDIER NIGHT VISION DEVICES*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test Support Activity	Various	Various Activities:Various	12.700	2.500		5.384		-		5.384	Continuing	Continuing	Continuing
		Subtotal	12.700	2.500		5.384		-		5.384			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	34.461	23.891		23.984		-		23.984			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
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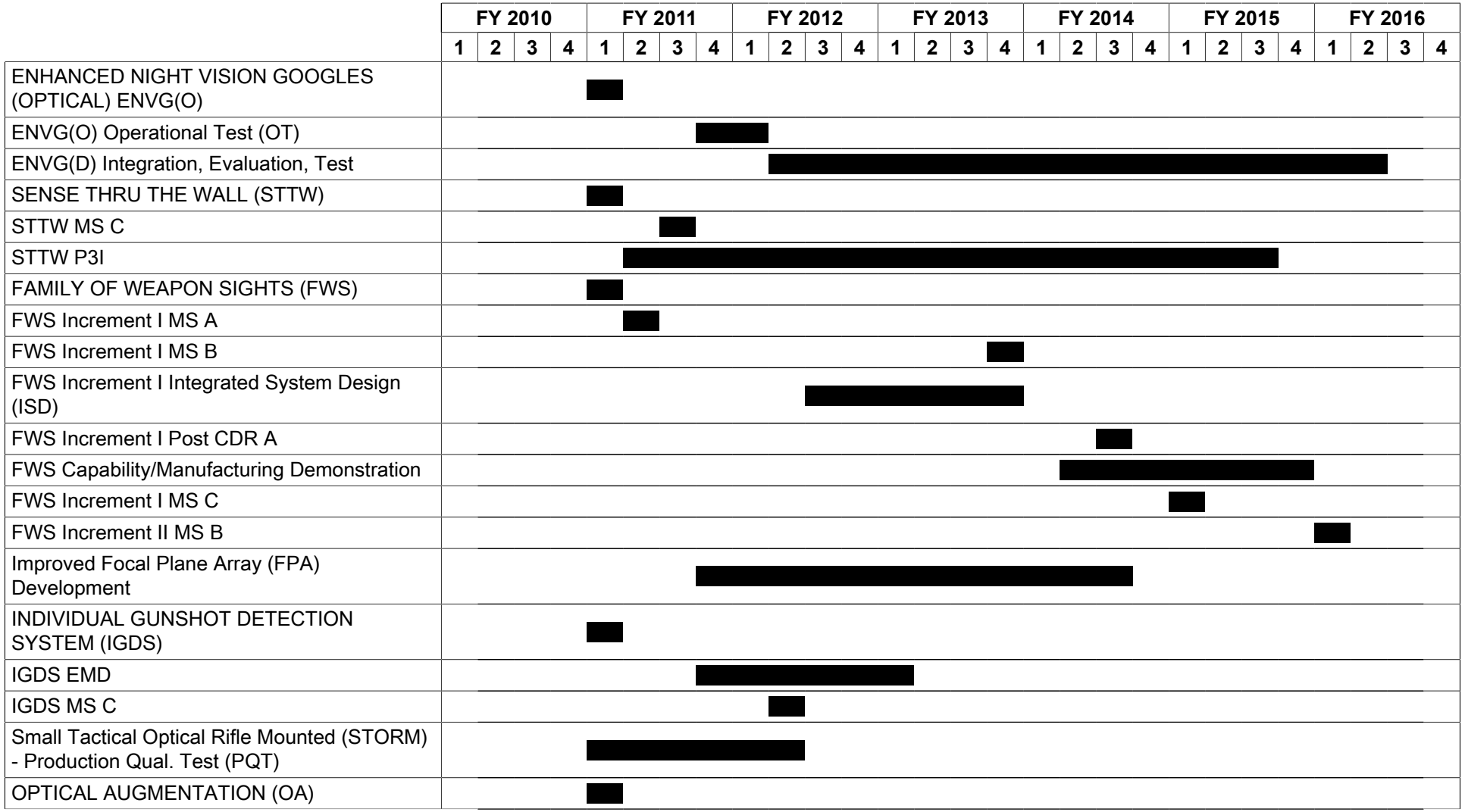

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L67: *SOLDIER NIGHT VISION DEVICES*

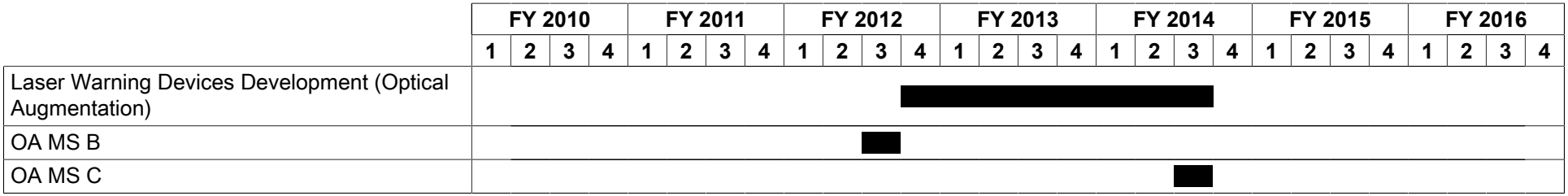

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604710A: *Night Vision Systems - Eng Dev*	**PROJECT** L67: *SOLDIER NIGHT VISION DEVICES*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ENHANCED NIGHT VISION GOOGLES (OPTICAL) ENVG(O)	1	2011	1	2011
ENVG(O) Operational Test (OT)	4	2011	1	2012
ENVG(D) Integration, Evaluation, Test	2	2012	2	2016
SENSE THRU THE WALL (STTW)	1	2011	1	2011
STTW MS C	3	2011	3	2011
STTW P3I	2	2011	3	2015
FAMILY OF WEAPON SIGHTS (FWS)	1	2011	1	2011
FWS Increment I MS A	2	2011	2	2011
FWS Increment I MS B	4	2013	4	2013
FWS Increment I Integrated System Design (ISD)	3	2012	4	2013
FWS Increment I Post CDR A	3	2014	3	2014
FWS Capability/Manufacturing Demonstration	2	2014	4	2015
FWS Increment I MS C	1	2015	1	2015
FWS Increment II MS B	1	2016	1	2016
Improved Focal Plane Array (FPA) Development	4	2011	3	2014
INDIVIDUAL GUNSHOT DETECTION SYSTEM (IGDS)	1	2011	1	2011
IGDS EMD	4	2011	1	2013
IGDS MS C	2	2012	2	2012
Small Tactical Optical Rifle Mounted (STORM) - Production Qual. Test (PQT)	1	2011	2	2012
OPTICAL AUGMENTATION (OA)	1	2011	1	2011
Laser Warning Devices Development (Optical Augmentation)	4	2012	3	2014
OA MS B	3	2012	3	2012

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L67: *SOLDIER NIGHT VISION DEVICES*

	Start		End	
Events	Quarter	Year	Quarter	Year
OA MS C	3	2014	3	2014

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L70: *NIGHT VISION DEV ED*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
L70: *NIGHT VISION DEV ED*	21.122	5.183	12.300	-	12.300	11.013	5.117	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project performs Engineering and Manufacturing Development (EMD) on high performance night vision, Reconnaissance, Surveillance, and Target Acquisition (RSTA) systems and other related systems that allow forces to locate and track enemy units in day, night, and all battlefield conditions, and through natural and man-made structures and obscurants. It also develops and integrates suites of these sensors to provide well-defined surveillance and targeting capabilities, as well as architectures for these sensors to communicate automatically. The focus is on meeting the requisite night vision and RSTA capabilities required for evolving Current Force, Modular Force, and Future Force systems.

The project transitions Advanced Thermal Imaging Technology from an Advanced Technology Objective to the development of a thermal engine intended to be common among all US Army FLIR sensor systems. This program will initiate and continue the development and qualification of the thermal Engine to meet requirements of Next Gen FLIR Army Combat and reconnaissance systems. The thermal imaging engine provides Mid Wave Infrared and Long Wave Infrared digital video. This technology enhances the war-fighters' survivability and lethality through increased identification range performance when integrated in current sensor packages, while enabling the detection of difficult or obscured targets and faster threat detection through automated processes. The thermal imaging engine can also be used to enhance mobility by maintaining current range performance in significantly smaller and lighter sensor packages.

This project provided Program Office technical support of the FCS Unattended Ground Sensors (UGS) hardware and software development, demonstration and test for a family of UGS systems for Intelligence, Surveillance and Reconnaissance (ISR). This provided FCS and the Army a networked Unattended Ground Sensor capability for ISR and physical security.

This project develops the Standard Ground Station (SGS) for PM NV/RSTA sensor systems. Leveraging the success in theater of the Persistent Surveillance and Dissemination System of Systems (PSDS2) Quick Response Capability (QRC), this effort takes the 3D visualization capability from PSDS2 and applies it to the Operator's station for RAID tower systems, aerostats and other RSTA Sensor systems. This effort was prioritized and performed on an accelerated schedule to support fielding in October 2008 as part of the RAID tower systems in response to the Base Expeditionary Target and Surveillance Systems - Combined (BETSS-C) JUONS. This SGS improves the effectiveness of RSTA systems by combining sensor videos, sensor cues and Battle Command information into a geo-registered 3D visualization of the terrain. FY 2010 Congressional add is for development of SGS enhancements.

FY 2012 funding supports the continuation of development efforts for the Advanced Thermal Imaging Engine. Specifically, FY 2012 funding will support development of the Ground Platform Thermal Imaging Engine leading to the fabrication of multiple prototypes with Block II EOCCM improvements incorporated, and support future second source development activities. The FY 2012 funding also supports the development of the Pre Planned Product Improvements (P3I), including meeting the Net Ready KPP and improving the Human Factors Engineering for the Persistent Surveillance System (PSS) Program of Record (POR).

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L70: *NIGHT VISION DEV ED*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Thermal Imaging Engine ***Articles:*** ***Description:*** Engineering and Manufacturing Development (EMD) of Thermal Imaging Engine. MS B approval in FY08 initiated EMD effort. EMD program develops the Thermal Imaging Engine for the Next Gen FLIR Army Combat and reconnaissance systems to include fabrication and qualification of 15 prototypes. ***FY 2010 Accomplishments:*** continued the development of the Thermal Imaging Engine for the Next Gen FLIR (AN/ZSQ-2/Q-3) aviation systems, Army Combat and Reconnaissance systems, and the fabrication of 15 prototypes. Contractor qualification testing, support for system integration activities, and competition stimulation efforts were also conducted with FY10 funding. ***FY 2011 Plans:*** Funding will support Qualification Testing, system-level test activities, completion of production preparation activities, and competition stimulation. ***FY 2012 Base Plans:*** Begin development of the Ground Platforms Thermal Imaging Engine leading to the fabrication of multiple prototypes that will incorporate Block II EOCCM improvements to realize a common protected FLIR. To promote competitive pricing and strengthen the industrial base, the ground platforms development effort will be competed; with award of up to two vendors.	7.432 0	5.183 0	6.976	-	6.976
Title: Standard Ground Station ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Standard Ground Station enhancement work (Congressional Adds) focuses on Sensor networking, interoperability, plug-and-play and other enhancements	4.190 0	-	-	-	-
Title: Pre Planned Product Improvements (P3I) for the Persistent Surveillance System (PSS) Program of Record (POR) ***Description:*** Funding is provided for the following effort	-	-	5.324	-	5.324

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L70: *NIGHT VISION DEV ED*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2012 Base Plans: Develop Pre Planned Product Improvements (P3I) for the Persistent Surveillance System (PSS) Program of Record (POR), to include meeting the Net Ready KPP and improving the Human Factors Engineering of the POR					
Title: Standoff Suicide Bomber Detection System (SSBDS). ***Articles:*** ***Description:*** Standoff Suicide Bomber Detection System (SSBDS) for an an enhanced standoff capability. ***FY 2010 Accomplishments:*** Standoff Suicide Bomber Detection System (SSBDS). Effort planned to build, test and prepare to deploy to theater an enhanced standoff capability to detect PBIEDs at Entry Control Points by employing: collaborating sensors, decision aide tools, singular display and interactive training.	2.000 0	-	-	-	-
Title: Remotely Operated HMDS (Husky Mounted Detection System) ***Articles:*** ***Description:*** Remotely Operated HMDS (Husky Mounted Detection System) for route clearance operations. ***FY 2010 Accomplishments:*** Effort to develop a remotely operated HMDS (Husky Mounted Detection System) for route clearance operations which allows for low-metallic IED detection from by an operator in a trailing RG-31 via ECM and GPR compatible link.	7.000 0	-	-	-	-
Title: FOB S2S (Forward Operating Base Sensor to Shooter) ***Articles:*** ***Description:*** FOB S2S (Forward Operating Base Sensor to Shooter) is an integration effort of fielded and emerging Sensor systems. ***FY 2010 Accomplishments:*** FOB S2S (Forward Operating Base Sensor to Shooter) is an integration effort of fielded and emerging Sensor systems that can quickly detect, assess and generate an accurate target locations and then transfer that location	0.500 0	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L70: *NIGHT VISION DEV ED*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
to a weapons systems such as Griffin, CROWS, Spider and Lethal Miniature Aerial Munition System (LMAMS). Effort includes System Integration and data link.					
Accomplishments/Planned Programs Subtotals	21.122	5.183	12.300	-	12.300

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• K38300: *Long Range Advanced Scout Surveillance System (LRAS3) OPA2*	133.413	255.641	102.509		102.509					0.000	511.633
• BZ6501: *Base Expeditionary Target and Surveillance System - Combines (BETSS-C)*	273.000									0.000	273.000

D. Acquisition Strategy

The development programs in this project are currently based on competitive awards and under cost reimbursement type contracts. The FY09 Congressional increase was a CRS3 sole source award. The FY12 funding continues the development, demonstration and source risk reduction efforts for thermal imaging engine and begins development of the P3I for the Persistent Surveillance System Program Of Record.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L70: *NIGHT VISION DEV ED*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management	C/FP	PM, NV/RSTA:Ft. Belvoir, VA & Ft. Monmouth, NJ	7.085	0.220		0.599		-		0.599	Continuing	Continuing	Continuing
SGS Support	C/FP	BAH:Various	0.498	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	7.583	0.220		0.599		-		0.599			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Historical Systems Development	C/FP	Various:Various	145.208	-		-		-		-	Continuing	Continuing	Continuing
SGS/RAID	C/CPIF	Sarnoff:Princeton, NJ	4.913	-		-		-		-	Continuing	Continuing	Continuing
FY09 - FY11: Thermal Imaging - Design and Demonstration	C/FP	Various:Various	9.698	2.769		-		-		-	Continuing	Continuing	Continuing
FY10-FY11:Thermal Imaging - Source Risk Reduction	C/CPAF	Various:Various	-	0.441		-		-		-	Continuing	Continuing	0.000
FY12-FY14: Develop, Fab, and Qual of a common Ground Platform Engine with Block II EOCCM	TBD	TBD:TBD	-	-		4.617		-		4.617	Continuing	Continuing	Continuing
FY 09 Base: CRS3	SS/FP	DRS:St. Louis, MO	2.800	-		-		-		-	Continuing	Continuing	Continuing
FY 09 OCO: Heterogeneous Airborne Reconnaissance Team (HART) system development	C/FFP	Northrop Grumman Systems Corp:El Segundo, CA	17.000	-		-		-		-	Continuing	Continuing	Continuing
FY 10 Base: Standard Ground Station Enhancement (Congressional Add)	C/FFP	Sarnoff:Princeton, NJ	-	-		-		-		-	Continuing	Continuing	Continuing
FY 09 OCO: Beyond Line of Sight Development and	SS/FFP	PM RUS:Fort Monmouth, NJ	3.324	-		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L70: *NIGHT VISION DEV ED*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Design of Seismic Expendable RDA UGS.													
FY 09 OCO: ISR Net Development	SS/FFP	Rockwell Collins:Cedar Rapids, IA	22.500	-		-		-		-	Continuing	Continuing	Continuing
FY 09 OCO: Development and Design Of PTDS Enhancements.	SS/FFP	Sarnoff:Princeton, NJ	0.700	-		-		-		-	Continuing	Continuing	Continuing
FY 09 OCO: Development and Design Of PTDS Enhancements.	SS/FFP	Raytheon:Falls Church, VA	1.500	-		-		-		-	Continuing	Continuing	Continuing
FY 09 OCO: Development and Design Of PTDS Enhancements.	SS/FFP	Lockheed Martin,:Akron, OH	2.200	-		-		-		-	Continuing	Continuing	Continuing
PSS P3I	C/FP	TBD:TBD	-	-		5.324		-		5.324	Continuing	Continuing	Continuing
Standoff Suicide Bomber Detection System (SSBDS)	TBD	TBD:TBD	-	-		-		-		-	Continuing	Continuing	Continuing
FOB S2S (Forward Operating Base Sensor to Shooter)	TBD	TBD:TBD	-	-		-		-		-	Continuing	Continuing	Continuing
Remotely Operated HMDS (Husky Mounted Detection System)	TBD	TBD:TBD	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	209.843	3.210		9.941		-		9.941			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Spt	Various	Various:Various	19.904	-		-		-		-	Continuing	Continuing	Continuing
Matrix Support	Various	Various:Various	0.720	-		-		-		-	Continuing	Continuing	Continuing
Matrix Support	Various	TRADOC:Ft. Monroe, VA	0.400	-		-		-		-	Continuing	Continuing	Continuing
Matrix Support 2	Various	Various:Various	0.231	-		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L70: *NIGHT VISION DEV ED*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support	Various	Various:Various	18.258	1.753		1.760		-		1.760	Continuing	Continuing	Continuing
EO/IR/LD(ASTAMIDS) Support	Various	Various:Various	0.347	-		-		-		-	Continuing	Continuing	Continuing
LRAS3 Netted Sensor Support	Various	Various:Various	0.500	-		-		-		-	Continuing	Continuing	Continuing
UGS Matrix	Various	Various:Various	0.893	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	41.253	1.753		1.760		-		1.760			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DT/IOT&E*	Various	ATEC:Various	8.769	-		-		-		-	Continuing	Continuing	Continuing
Other Test Support*	Various	Various:Various	6.351	-		-		-		-	Continuing	Continuing	Continuing
SGS/RAID C&L	Various	ATEC/DTC:Various	0.730	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	15.850	-		-		-		-			

Remarks

* Includes PSDS2, UGS, STTW, 3GF and other sensor test and evaluation activities.
Includes PSDS2 and FCS UGS test and evaluation.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	274.529	5.183		12.300		-		12.300			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L70: *NIGHT VISION DEV ED*

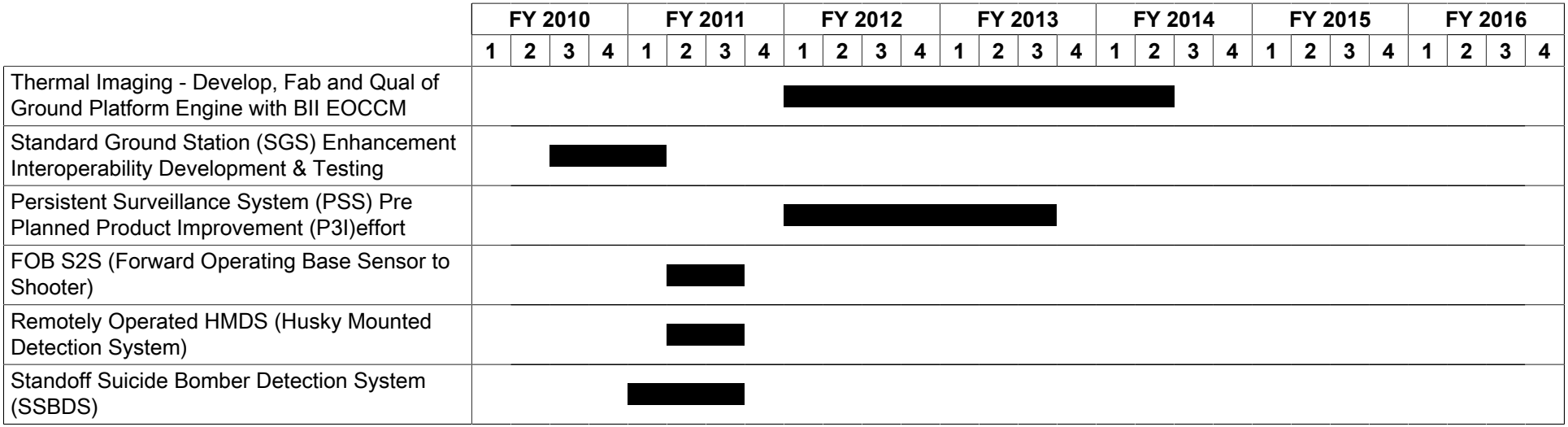

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604710A: *Night Vision Systems - Eng Dev*	**PROJECT** L70: *NIGHT VISION DEV ED*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Thermal Imaging - Develop, Fab and Qual of Ground Platform Engine with BII EOCCM	1	2012	2	2014
Standard Ground Station (SGS) Enhancement Interoperability Development & Testing	3	2010	1	2011
Persistent Surveillance System (PSS) Pre Planned Product Improvement (P3I)effort	1	2012	3	2013
FOB S2S (Forward Operating Base Sensor to Shooter)	2	2011	3	2011
Remotely Operated HMDS (Husky Mounted Detection System)	2	2011	3	2011
Standoff Suicide Bomber Detection System (SSBDS)	1	2011	3	2011

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L75: *Profiler*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
L75: *Profiler*	5.219	6.014	2.595	-	2.595	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The AN/TMQ-52 Meteorological Measuring Set-Profiler (MMS-P) uses a ground tactical meteorological (TACMET) sensor and Meteorological (MET) data from communication satellites along with an advanced weather model to provide highly accurate MET data covering an operational area of 500 kilometers with a tested range of 60 kilometers. Profiler provides MET information such as wind speed, wind direction, temperature, pressure, humidity, rate of precipitation, visibility, cloud height and cloud ceiling. All of these are required for precise targeting and terminal guidance. Profiler uses this information to build a four-dimensional MET model (height, width, depth and time) that includes terrain effects. By providing more accurate MET messages, Profiler will enable the artillery to have a greater probability of a first round hit with indirect fire systems. The new capabilities will increase the lethality of field artillery systems such as Multiple Launch Rocket Systems (MLRS), Paladin, and self-propelled or towed howitzers. When analysis determined that Block I Profiler already satisfied the requirements of Block II, the decision was made to proceed directly to Block III as the next evolution of the Profiler capability. Block III will provide a networked laptop configuration that will enhance system efficiencies while further reducing the system's operational and logistical footprint with the elimination of the High Mobility Multi-purpose Wheeled Vehicle (HMMWV) mounted shelter and trailer. The Block III configuration consists of one computer with a common operating system co-located within the Tactical Operation Center (TOC) with a direct interface to the TOC Local Area Network (LAN). The system will be able to autonomously generate MET messages upon request from Advanced Field Artillery Tactical Data Systems (AFATDS) eliminating the need for a dedicated MET section crew. The Army will realize a significant Operations and Support cost avoidance with the improved configuration.

FY12 supports operational and austere test requirements.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Block III backup sensor effort.	0.937	0.245	-	-	-
Articles:	0	0			
Description: Funding is provided for the following effort					
FY 2010 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L75: *Profiler*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Initiate Block III backup sensor effort. ***FY 2011 Plans:*** Continue Block III backup sensor effort					
Title: software porting to laptop. ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Award effort for software porting to laptop. ***FY 2011 Plans:*** Complete effort for software porting to laptop	2.424 0	5.201 0	-	-	-
Title: Production Representative Prototype Systems (PRPS). ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Reduction of physical configuration, build and test of eight Production Representative Prototype Systems (PRPS). ***FY 2011 Plans:*** Continue reduction of physical configuration, build and test eight Production Representative Prototype Systems (PRPS).	0.775 0	0.568 0	-	-	-
Title: SBIR/STTR ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** SBIR/STTR	0.151 0	-	-	-	-
Title: common operating system ***Articles:***	0.932 0	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L75: *Profiler*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Conduct migration effort to a common operating system hosted on one computer.					
Title: Block III Limited User Testing and Austere Testing. ***Description:*** Funding is provided for the following effort ***FY 2012 Base Plans:*** Conduct Block III Limited User Testing and Austere Testing.	-	-	2.595	-	2.595
Accomplishments/Planned Programs Subtotals	5.219	6.014	2.595	-	2.595

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• K27900: *Profiler*	4.751	4.408	3.312	2.000	5.312		7.277	4.137	4.963	0.000	43.159

D. Acquisition Strategy

The Profiler Block III acquisition strategy decision brief to the Milestone Decision Authority (MDA) was presented in January 2010. The Acquisition Decision Memorandum (ADM) authorizing initiation of Profiler Block III was signed by the MDA on 23 February 2010. A limited competitive Firm-Fixed Price (FFP)/Cost Plus Fixed Fee (CPFF) contract was awarded via the Strategic Services Sourcing (S3) contract to build, test and deliver eight (8) Profiler Block III Production Representative Prototype Systems (PRPS). The Block III program is expected to enter production beginning in FY13.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L75: *Profiler*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR	SS/FP	TBD:TBD	-	-		-		-		-	Continuing	Continuing	Continuing
Project Management	SS/FP	PM Nav Sys/JTCI-G:Various	1.425	0.477		0.473		-		0.473	Continuing	Continuing	Continuing
		Subtotal	1.425	0.477		0.473		-		0.473			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SDD Contract	C/FP	Smiths Detection:Edgewood, MD	14.999	-		-		-		-	Continuing	Continuing	Continuing
SDD T&M	C/FP	Smiths Detection:Edgewood, MD	0.103	-		-		-		-	Continuing	Continuing	Continuing
Studies and Simulations	SS/FP	Army Research Lab:WSMR, NM	0.429	-		-		-		-	Continuing	Continuing	Continuing
Government Furnished Equipment	Various	HQCPSQ/ZJ:CECOM	0.120	-		-		-		-	Continuing	Continuing	Continuing
Award efforts for s/w porting to laptop	C/FP	Mantech:Red Bank, NJ	-	3.806		-		-		-	Continuing	Continuing	Continuing
Initiate backup sensor effort	Various	Army Research Lab:various	-	0.245		-		-		-	Continuing	Continuing	Continuing
Reduction of Physical Configuration	Various	TBD:TBD	-	-		-		-		-	Continuing	Continuing	Continuing
Migration to common operating system	Various	TBD:TBD	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	15.651	4.051		-		-		-			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L75: *Profiler*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	CECOM:Aberdeen, MD	2.063	0.381		0.501		-		0.501	Continuing	Continuing	Continuing
Sys Engr/Technical Assistance	SS/FP	Various:Various	0.378	0.490		0.752		-		0.752	Continuing	Continuing	Continuing
OGA	MIPR	ARL, Various:WSMR, NM	1.089	-		0.178		-		0.178	Continuing	Continuing	Continuing
		Subtotal	3.530	0.871		1.431		-		1.431			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Planning and Preparation	Various	ATEC, Various, CECOM, PRD Dir,:Ft. Monmouth, NJ	0.942	0.615		-		-		-	Continuing	Continuing	Continuing
Developmental Testing	Various	ATEC,:Various	1.049	-		-		-		-	Continuing	Continuing	Continuing
Limited User Test	MIPR	ATEC,:Various	1.200	-		0.352		-		0.352	Continuing	Continuing	Continuing
Conduct Block III Austere Testing	MIPR	ARL, ATEC,:Aberdeen Proving Ground, MD	-	-		0.339		-		0.339	Continuing	Continuing	Continuing
		Subtotal	3.191	0.615		0.691		-		0.691			

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	23.797	6.014		2.595		-		2.595			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604710A: *Night Vision Systems - Eng Dev*	**PROJECT** L75: *Profiler*

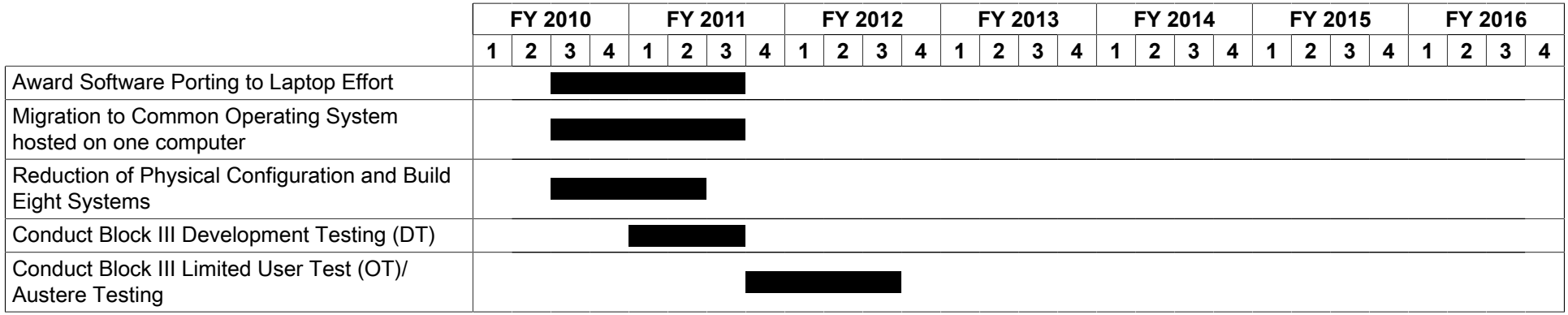

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604710A: *Night Vision Systems - Eng Dev*	**PROJECT** L75: *Profiler*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Award Software Porting to Laptop Effort	3	2010	3	2011
Migration to Common Operating System hosted on one computer	3	2010	3	2011
Reduction of Physical Configuration and Build Eight Systems	3	2010	2	2011
Conduct Block III Development Testing (DT)	1	2011	3	2011
Conduct Block III Limited User Test (OT)/Austere Testing	4	2011	3	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L76: *Dismounted Fire Support Laser Targeting Systems*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
L76: *Dismounted Fire Support Laser Targeting Systems*	9.014	17.461	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project will adapt demonstrated technologies for insertion into Laser Target Locators (LTL) and Laser Designators to improve overall performance of those systems and reduce weight. Technologies selected under this project will benefit the Lightweight Laser Designator Rangefinder (LLDR, AN/PED-1), the Laser Target Locator Systems, and the Joint Effects Targeting System (JETS). This project will integrate the next generation uncooled Forward Looking Infrared (FLIRs) into the Laser Target Locator Module (LTLM), improving its imaging performance with no impact on its weight. This project will initiate interface design for a reduced weight common laser designator to the next generation LTL which will form a bridge to the JETS. In addition, this line will support improved targeting accuracy in support of coordinate seeking weapons, such as Joint Direct Attack Munition (JDAM), Small Diameter Bomb, and Excalibur. Development will primarily focus on affordable, non-magnetic, high accuracy, azimuth and vertical angle measurement (AVAM) devices with reduced size, weight and power characteristics.

JETS is an Army program with joint interest (Air Force and Marine). The goal is to develop a lightweight mission equipment set for the dismounted forward observers and controllers (including Joint Tactical Air Controllers - JTAC). The JETS will provide observers and controllers the means to call for fire and control delivery of air, ground and naval surface fire support, using precision, near-precision, and non-precision munitions and effects (both lethal and non-lethal). The JETS will consist of two subsystems: the Target Location Designation System (TLDS) and the Target Effects Coordination Capability (TECC). The TLDS will provide the observers and controllers the ability to conduct surveillance; acquire and accurately locate targets; designate targets for attack by laser seeking munitions; mark targets for aviation and ground based targeting systems; and transmit targeting data to existing forward entry devices. The TECC will leverage existing forward entry devices to provide access to current and future joint targeting networks, formats, and generate digital calls for fire and Close Air Support (CAS) requests to all joint fires platforms; will display information to the observers and controllers to enable effective target engagement and integration of fires with Joint maneuver forces; and will support fire support planning functions.

Efforts previously planned under this line to support JETS are to be performed under Program Element 0604710A project L79 beginning in FY12.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Azimuth and Verticale Angle Measurement (AVAM)	3.600	4.808	-	-	-
Articles:	0	0			
Description: AVAM (Azimuth Vertical Angle Module) is a non-magnetic based inertial navigation materiel solution for targeting devices. The AVAM effort will improve azimuth accuracy leading to reduced collateral damage and improved engagement efficiency.					
FY 2010 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L76: *Dismounted Fire Support Laser Targeting Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue the development of Azimuth and Vertical Angle Measurement (AVAM) devices. ***FY 2011 Plans:*** Complete the development of Azimuth and Vertical Angle Measurement (AVAM) devices.					
Title: Joint Effects Targeting System (JETS)	5.414	12.653	-	-	-
Articles:	0	0			
Description: JETS TLDS is a lightweight mission equipment set for the dismounted forward observers and controllers (including Joint Tactical Air Controllers - JTAC). JETS will provide observers and controllers the means to call for fire and control delivery of air, ground and naval surface fire support, using precision, near-precision, and non-precision munitions and effects (both lethal and non-lethal). ***FY 2010 Accomplishments:*** Continue Target Locator improvements within LTLM to support use of Precision Guided Weapons by dismounted Soldiers and reduce soldier load. LTLM improvements will also support a goal of transitioning LTLS improved technical elements to support future Army JETS system design requirements. ***FY 2011 Plans:*** Continue Target Locator improvements within LTLM to support use of Precision Guided Weapons by dismounted Soldiers and reduce soldier load. LTLM improvements will also support a goal of transitioning LTLS improved technical elements to support future Army JETS system design requirements. Develop and build Technology Development (TD)prototypes to support JETS TLDS Milestone B decision.					
Accomplishments/Planned Programs Subtotals	9.014	17.461	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• K31100: *Lightweight Laser Designator Rangefinder (LLDR)*	155.918	88.341	58.042		58.042		1.552	37.407	37.591	Continuing	Continuing
• B53800: *Laser Target Locating System (LTLS)*	4.873	31.444	33.820		33.820		30.466	11.762	11.820	Continuing	Continuing
			19.191		19.191		28.588			0.000	69.204

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L76: *Dismounted Fire Support Laser Targeting Systems*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• L79: *Joint Effects Targeting System (JETS)*											

D. Acquisition Strategy

The various development programs in this project will continue to exercise competitively awarded contracts using the best value source selection procedures.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L76: *Dismounted Fire Support Laser Targeting Systems*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JETS TLDS Technology Development prototype	Various	Northrop-Gruman Laser Systems:FL	-	12.653		-		-		-	Continuing	Continuing	0.000
Azimuth and Vertical Angle Measurement (AVAM)	MIPR	Johns Hopkins Applied Physics Lab:Laurel MD	-	3.808		-		-		-	Continuing	Continuing	0.000
JETS TLDS Technology Development prototypes	Various	BAE Systems:NH	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	16.461		-		-		-			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TLDS Support	MIPR	NVESD:Ft. Belvoir, VA	-	-		-		-		-	Continuing	Continuing	0.000
Azimuth and Vertical Angle Measurement (AVAM)	MIPR	NVESD:Ft. Belvoir, VA	-	1.000		-		-		-	Continuing	Continuing	0.000
TLDS Support for Contractor 1	TBD	CECOM SEC:Ft. Belvoir	-	-		-		-		-	Continuing	Continuing	0.000
TLDS Support for Contractor 2	TBD	CECOM SEC:Ft. Belvoir	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	1.000		-		-		-			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Marker/Designator Low energy testing	MIPR	Various:Various	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	-		-		-		-			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L76: *Dismounted Fire Support Laser Targeting Systems*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	17.461		-		-		-			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L76: *Dismounted Fire Support Laser Targeting Systems*

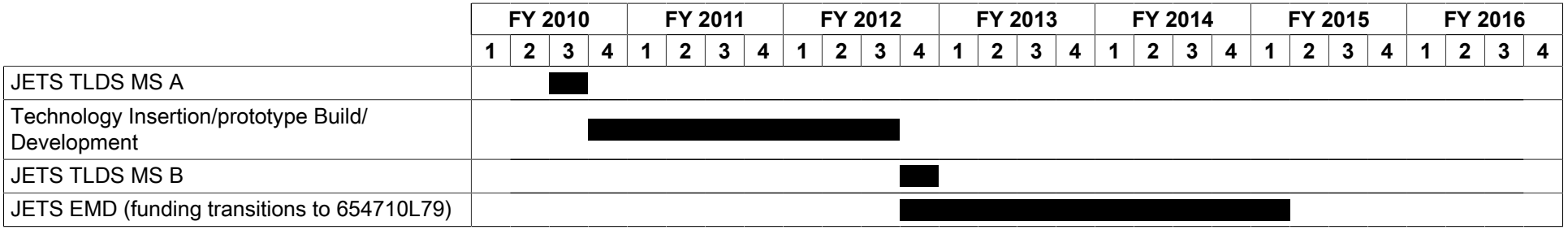

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604710A: *Night Vision Systems - Eng Dev*	**PROJECT** L76: *Dismounted Fire Support Laser Targeting Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JETS TLDS MS A	3	2010	3	2010
Technology Insertion/prototype Build/Development	4	2010	3	2012
JETS TLDS MS B	4	2012	4	2012
JETS EMD (funding transitions to 654710L79)	4	2012	1	2015

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L79: *JOINT EFFECTS TARGETING SYSTEMS (JETS)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
L79: *JOINT EFFECTS TARGETING SYSTEMS (JETS)*	-	-	20.386	-	20.386	21.425	28.588	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Joint Effects Targeting System (JETS) is an Army program with joint interest (Air Force and Marine). The goal is to develop a lightweight mission equipment set for the dismounted forward observers and controllers (including Joint Tactical Air Controllers - JTAC). The JETS will provide observers and controllers the means to call for fire and control delivery of air, ground and naval surface fire support, using precision, near-precision, and non-precision munitions and effects (both lethal and non-lethal). The JETS will consist of two subsystems: the Target Location Designation System (TLDS) and the Target Effects Coordination Capability (TECC). The TLDS will provide the observers and controllers the ability to conduct surveillance; acquire and accurately locate targets; designate targets for attack by laser seeking munitions; mark targets for aviation and ground based targeting systems; and transmit targeting data to existing forward entry devices. The TECC will leverage existing forward entry devices to provide access to current and future joint targeting networks, formats, and generate digital calls for fire and Close Air Support (CAS) requests to all joint fires platforms; will display information to the observers and controllers to enable effective target engagement and integration of fires with Joint maneuver forces; and will support fire support planning functions.

JETS TLDS recently achieved MS-A (4Q FY10). As part of the MS A, an Army Cost Position (ACP) was developed. Starting in FY12, the ACP aligns JETS TLDS funding under this project in lieu of 0604710A L76 (Dismounted Fire Support Targeting System). A 6.4 RDTE line (Soldier Precision Targeting Devices - Advanced Development 6.4, PE: 603774A Project: VT8) will also be associated with this effort in the future.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Joint Effects Targeting System (JETS) TLDS	-	-	20.386	-	20.386
Description: JETS TLDS is a lightweight mission equipment set for the dismounted forward observers and controllers (including Joint Tactical Air Controllers - JTAC). It will provide observers and controllers the means to call for fire and control delivery of air, ground and naval surface fire support, using precision, near-precision, and non-precision munitions and effects (both lethal and non-lethal). ***FY 2012 Base Plans:*** Develop two prototype Target Location Designator Systems (TLDS) to support Technical Development Phase and Engineering Management Development Phase (EMD).					
Accomplishments/Planned Programs Subtotals	-	-	20.386	-	20.386

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L79: *JOINT EFFECTS TARGETING SYSTEMS (JETS)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• L76: *Dismounted Fire Support Laser Targeting Systems*	9.014	17.461								0.000	26.475
• K32101: *Joint Effects Targeting System*								60.500	76.125	0.000	136.625

D. Acquisition Strategy

This project will continue to exercise competitively awarded contracts using best value source selection procedures.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L79: *JOINT EFFECTS TARGETING SYSTEMS (JETS)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JETS TLDS Year 2 Contractor 1 prototype development, integration, and test.	TBD	NGLS:Apopka, FL	-	-		2.796		-		2.796	Continuing	Continuing	0.000
JETS TLDS Year 2 Contractor 2 prototype development, integration, and test	TBD	BAE Systems:Nashua, NH	-	-		2.796		-		2.796	Continuing	Continuing	0.000
		Subtotal	-	-		5.592		-		5.592			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JETS TLDS prototype technical maturation	TBD	TBD:TBD	-	-		2.476		-		2.476	Continuing	Continuing	0.000
Functional Support Cost	TBD	Night Vision Electronics Sensors Directorate:Ft. Belvoir	-	-		1.920		-		1.920	Continuing	Continuing	0.000
Science and Engineering Support	TBD	Johns Hopkins Applied Physics Lab:Laurel, MD	-	-		3.573		-		3.573	Continuing	Continuing	0.000
Program Management Support	TBD	TBD:TBD	-	-		1.925		-		1.925	Continuing	Continuing	0.000
		Subtotal	-	-		9.894		-		9.894			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
All RDTE Testing and Support	TBD	TBD:TBD	-	-		4.900		-		4.900	Continuing	Continuing	0.000
		Subtotal	-	-		4.900		-		4.900			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L79: *JOINT EFFECTS TARGETING SYSTEMS (JETS)*

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		20.386		-		20.386			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604710A: *Night Vision Systems - Eng Dev*	PROJECT L79: *JOINT EFFECTS TARGETING SYSTEMS (JETS)*

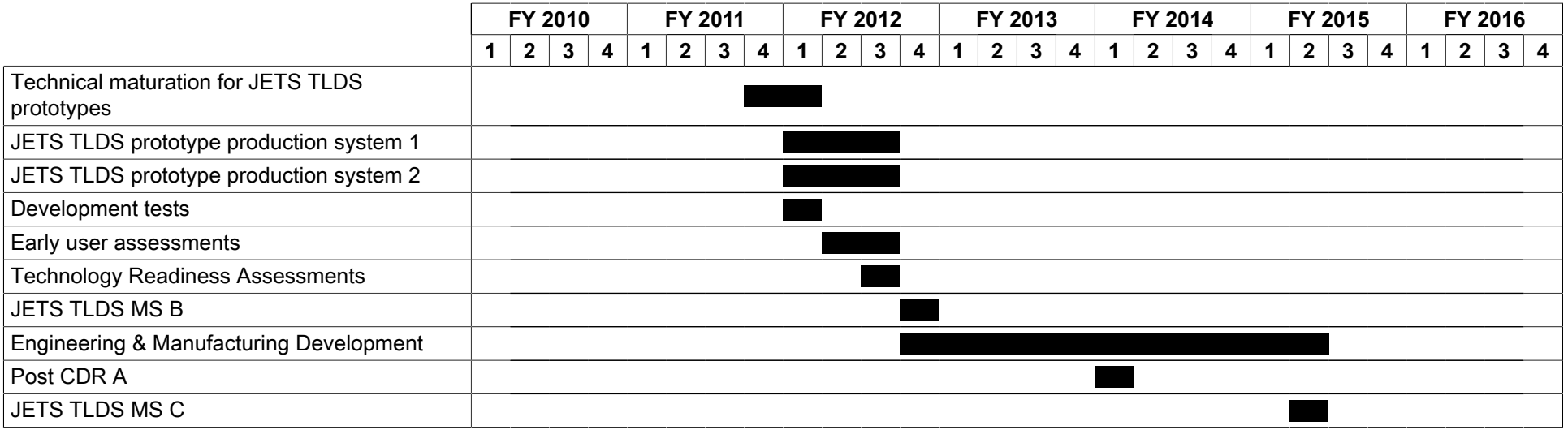

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604710A: *Night Vision Systems - Eng Dev*	**PROJECT** L79: *JOINT EFFECTS TARGETING SYSTEMS (JETS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Technical maturation for JETS TLDS prototypes	4	2011	1	2012
JETS TLDS prototype production system 1	1	2012	3	2012
JETS TLDS prototype production system 2	1	2012	3	2012
Development tests	1	2012	1	2012
Early user assessments	2	2012	3	2012
Technology Readiness Assessments	3	2012	3	2012
JETS TLDS MS B	4	2012	4	2012
Engineering & Manufacturing Development	4	2012	2	2015
Post CDR A	1	2014	1	2014
JETS TLDS MS C	2	2015	2	2015

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604713A: *Combat Feeding, Clothing, and Equipment*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	2.010	2.118	2.075	-	2.075	2.109	2.136	2.149	2.176	Continuing	Continuing
548: *MIL SUBSISTENCE SYS*	2.010	2.118	2.075	-	2.075	2.109	2.136	2.149	2.176	Continuing	Continuing

Note

FY12: Funds realigned to higher priority Army Programs.

A. Mission Description and Budget Item Justification

This project supports the development and demonstration and Non-Developmental Item (NDI) Commercial Off The Shelf (COTS) evaluation of combat feeding equipment to enhance soldier efficiency and survivability, and to reduce food service logistics requirements for all four services. The project supports multi-fuel, rapidly deployable field food service equipment initiatives and engineering and manufacturing development to improve equipment, enhance safety in food service, and decrease fuel and water requirements. This project develops critical enablers that support the Joint Future Capabilities and Joint Expeditionary mindset, by maintaining readiness through fielding and integrating new equipment; by enhancing the field soldier's well-being; and providing soldier usable equipment. They also reduce sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands on lift, the combat zone footprint, and costs for logistical support.

This PE/Project supports Field Feeding programs for all the services.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	2.081	2.118	2.082	-	2.082
Current President's Budget	2.010	2.118	2.075	-	2.075
Total Adjustments	-0.071	-	-0.007	-	-0.007
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-0.071	-	-0.007	-	-0.007

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604713A: *Combat Feeding, Clothing, and Equipment*	PROJECT 548: *MIL SUBSISTENCE SYS*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
548: *MIL SUBSISTENCE SYS*	2.010	2.118	2.075	-	2.075	2.109	2.136	2.149	2.176	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project supports the development and demonstration and Non-Developmental Item (NDI) Commercial Off The Shelf (COTS) evaluation of combat feeding equipment to enhance soldier efficiency and survivability, and to reduce food service logistics requirements for all four services. The project supports multi-fuel, rapidly deployable field food service equipment initiatives and engineering and manufacturing development to improve equipment, enhance safety in food service, and decrease fuel and water requirements. This project develops critical enablers that support the Joint Future Capabilities and Joint Expeditionary mindset, by maintaining readiness through fielding and integrating new equipment; by enhancing the field soldier's well-being; and providing soldier usable equipment. They also reduce sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands on lift, the combat zone footprint, and costs for logistical support.

This PE/Project supports Field Feeding programs for all the services.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Containerized Kitchen Improvements (CK RESET)	0.307	0.050	0.250
Articles:	0	0	
Description: New Containerized Kitchen layout with modular, closed combustion, thermostatically controlled appliances that reduce heat stress inside the kitchen			
FY 2010 Accomplishments: Completed design for incorporation of modular appliances.			
FY 2011 Plans: Transition final CK RESET configuration to production and to the Integrated Logistics Supply Center (ILSC) for RESET.			
FY 2012 Plans: Test and evaluate in accordance to TEMP. Prepare and approve ECP and transition to RESET program			
Title: Mobile Kitchen Trailer (MKT) RESET Kit	0.280	-	-
Articles:	0		
Description: Optimize appliance suite within the kitchen to effectively prepare and serve the current spectrum of operational rations.			
FY 2010 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604713A: *Combat Feeding, Clothing, and Equipment*	PROJECT 548: *MIL SUBSISTENCE SYS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Complete developmental and operational test and evaluation of the MKT Reset Kit prototype.			
Title: Containerized Ice Making System (CIMS) ***Articles:*** ***Description:*** Provides a containerized ice making system to support base camps ***FY 2011 Plans:*** Award contract for the design and fabrication of the prototype BISS. Complete fabrication and conduct test and evaluation of the BISS prototype. ***FY 2012 Plans:*** Conduct Operational test (OT) and prepare to transition to production.	- 	0.452 0	0.300
Title: Solar Power Refrigeration ***Articles:*** ***Description:*** Provides a mechanical sub cooler that will increase the operational temperature limit, reduce fuel consumption and decrease electrical draw. The reduction in electrical draw makes it a better candidate for alternative energy source like Solar ***FY 2011 Plans:*** Complete fabrication and conduct test and evaluation of the Solar Power Refrigeration prototype. ***FY 2012 Plans:*** Modify Solar Power Refrigeration prototype and conduct additional technical testing. Prepare engineering change and transition package.	- 	0.380 0	0.148
Title: Food Sanitation Center (FSC). ***Articles:*** ***Description:*** Develop a trailer version for the ground based Food Sanitation Center ***FY 2011 Plans:*** Review and validate the requirements of the preplanned product improvements in the requirements document for the FSC. Establish design and evaluation criteria to meet refrigeration requirement for trailer mounted FSC capability. Prepare solicitation for prototype.	- 	0.159 0	-
Title: Fielded Individual Ration Improvement Project (FIRIP) ***Articles:***	0.190 0	0.121 0	0.157

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604713A: *Combat Feeding, Clothing, and Equipment*	PROJECT 548: *MIL SUBSISTENCE SYS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: Continuous product improvement project for the Meal Ready to Eat (MRE) ***FY 2010 Accomplishments:*** Based on field test results, present recommendations to Joint Service Operation Ration Forum (JSORF) (2Q10/2Q11) for continued product improvement of ration components/packaging/ technologies for MRE (2012/2013 Date Of Procurement (DOP)). Finalize MRE procurement documents and initiate transition to Defense Supply Center Philadelphia (DSCP). Obtain Operations Technical Support Group (OTSG) approval. Perform cuttings for industry/Other Government Agency (OGA) to ensure consistent ration quality, understand Program Change Request (PCR) requirements, and resolve vendor/supplier issues. Identify new components based on user feedback, focus groups, emerging products and technologies, and known user requirements. Obtain and assemble selected new items for test. Conduct field testing/field evaluation of new ration components for MRE (2013/2014 DOP) to improve quality, acceptability, nutrition, and expand variety. ***FY 2011 Plans:*** Based on field test results, present recommendations to JSORF (2Q10/2Q11) for continued product improvement of ration components/packaging/ technologies for MRE (2012/2013 DOP). Finalize MRE procurement documents and initiate transition to DSCP. Obtain OTSG approval. Perform cuttings for industry/OGA to ensure consistent ration quality, understand PCR requirements, and resolve vendor/supplier issues. Identify new components based on user feedback, focus groups, emerging products and technologies, and known user requirements. Obtain and assemble selected new items for test. Conduct field testing/field evaluation of new ration components for MRE (2013/2014 DOP) to improve quality, acceptability, nutrition, and expand variety. ***FY 2012 Plans:*** Based on field test results, present recommendations to JSORF (2Q10/2Q11) for continued product improvement of ration components/packaging/ technologies for MRE (2013/2014 DOP). Finalize MRE procurement documents and initiate transition to DSCP. Obtain OTSG approval. Perform cuttings for industry/OGA to ensure consistent ration quality, understand PCR requirements, and resolve vendor/supplier issues. Identify new components based on user feedback, focus groups, emerging products and technologies, and known user requirements. Obtain and assemble selected new items for test. Conduct field testing/field evaluation of new ration components for MRE (2013/2014 DOP) to improve quality, acceptability, nutrition, and expand variety.			
Title: Assault/Special Purpose Ration Improvement Project (ASPIP) ***Articles:*** ***Description:*** Continuous product improvement of special purpose rations by the insertion of new technologies in nutrition, processing and packaging.	0.190 0	0.126 0	0.125

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604713A: *Combat Feeding, Clothing, and Equipment*	PROJECT 548: *MIL SUBSISTENCE SYS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Post field test results, present recommendations to JSORF (2Q10/2Q11) for continued product improvement of ration components/packaging/ technologies for Meal Cold Weather (MCW)/Long Ration Patrol (LRP) and, Survival Rations and FSR (3/4). Finalize procurement documents and initiate transition to DSCP. Obtain OTSG approval for menus. Perform cuttings for industry/OGA to ensure consistent ration quality, understand PCR requirements, and resolve vendor/supplier issues. Identify new components based on user feedback, focus groups, emerging products and technologies, and known user requirements. Obtain and assemble selected new items for test. Conduct field testing/field evaluation of new ration components for MCW/LRP, Survival Rations, and FSR (4/5). ***FY 2011 Plans:*** Post field test results, present recommendations to JSORF (2Q10/2Q11) for continued product improvement of ration components/packaging/ technologies for MCW/LRP and, Survival Rations and FSR (3/4). Finalize procurement documents and initiate transition to DSCP. Obtain OTSG approval for menus. Perform cuttings for industry/OGA to ensure consistent ration quality, understand PCR requirements, and resolve vendor/supplier issues. Identify new components based on user feedback, focus groups, emerging products and technologies, and known user requirements. Obtain and assemble selected new items for test. Conduct field testing/field evaluation of new ration components for MCW/LRP, Survival Rations, and FSR (4/5). ***FY 2012 Plans:*** Post field test results, present recommendations to JSORF (2Q12) for continued product improvement of ration components/ packaging/ technologies for MCW/LRP and, Survival Rations and FSR (3/4). Finalize procurement documents and initiate transition to DSCP. Obtain OTSG approval for menus. Perform cuttings for industry/OGA to ensure consistent ration quality, understand PCR requirements, and resolve vendor/supplier issues. Identify new components based on user feedback, focus groups, emerging products and technologies, and known user requirements. Obtain and assemble selected new items for test. Conduct field testing/field evaluation of new ration components for MCW/LRP, Survival Rations, and FSR (4/5).			
Title: Fielded Group Ration Improvement Project (FGRIP)	0.225	0.126	0.195
Articles:	0	0	
Description: Continuous product improvement project to continuously update/improve group ration components, menus, and packaging by integrating state-of-the-art military/commercial packaging and technology base transitions. ***FY 2010 Accomplishments:*** Present recommendations to JSORF for United Group Ration (UGR)-Heat and Serve (H&S) (2012-2013 DOP), UGR-A (2011-2012 DOP) and UGR-Express (E) (2012-2013 DOP) for continued product improvement. Obtain OTSG approval. Perform cuttings/production tests with industry/OGA to ensure consistent ration quality and producibility. Complete field testing of new			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604713A: *Combat Feeding, Clothing, and Equipment*	PROJECT 548: *MIL SUBSISTENCE SYS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
ration components for UGR-H&S (2013-2014 DOP), UGR-A (2012-2013 DOP) and UGR-E (2013-2014 DOP) to improve quality and expand variety. Finalize UGR procurement documents and initiate transition to DSCP. ***FY 2011 Plans:*** Present recommendations to JSORF for UGR-H&S (2012-2013 DOP), UGR-A (2011-2012 DOP) and UGR-E (2012-2013 DOP) for continued product improvement. Obtain OTSG approval. Perform cuttings/production tests with industry/OGA to ensure consistent ration quality and producibility. Complete field testing of new ration components for UGR-H&S (2013-2014 DOP), UGR-A (2012-2013 DOP) and UGR-E (2013-2014 DOP) to improve quality and expand variety. Finalize UGR procurement documents and initiate transition to DSCP. ***FY 2012 Plans:*** Present recommendations to JSORF for UGR-H&S (2013-2014 DOP), UGR-A (2012-2013 DOP) and UGR-E (2013-2014 DOP) for continued product improvement. Obtain OTSG approval. Perform cuttings/production tests with industry/OGA to ensure consistent ration quality and producibility. Complete field testing of new ration components for UGR-H&S (2014-2015 DOP), UGR-A (2013-2014 DOP) and UGR-E (2014-2015 DOP) to improve quality and expand variety. Finalize UGR procurement documents and initiate transition to DSCP.			
Title: Future Navy Galleys / Hatchable Submarine Galley ***Articles:*** ***Description:*** Provide consolidated galley design and advanced technologies that support the Navy optimized crewing plan for both surface ships and submarines. ***FY 2010 Accomplishments:*** Coordinate with the Navy to determine future manning and feeding requirements; identify, research, and down select automation technologies; evaluate/test food service equipment; and integrate food service equipment into complete galleys that will support optimized crewing encompassing a total systems design and approach. ***FY 2011 Plans:*** Complete all required Technical Data Package (TDP) documents and specification requirements to transition galley food service systems to the Navy for procurement and fielding.	0.398 0	0.233 0	-
Title: Naval Refrigeration Project ***Articles:*** ***Description:*** Develop Naval Refrigeration to provide adequate and conveniently accessible chill/freeze storage space aboard ship.	-	0.109 0	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604713A: *Combat Feeding, Clothing, and Equipment*	PROJECT 548: *MIL SUBSISTENCE SYS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
FY 2011 Plans: Use information from Navy shipboard refrigeration / ice consumption Front Analysis Report (FY09) to conduct a Continues Produce Improvement (CPI) project for Navy shipboard refrigeration and ice making capabilities			
Title: Future Navy Galley / Hatchable Submarine Galley ***Articles:*** ***Description:*** Provide consolidated galley design and advanced technologies that support the Navy optimized crewing plan for both surface ships and submarines. ***FY 2011 Plans:*** Complete all evaluations on submarine based equipment and make recommendations to Naval Sea Systems Command (NAVSEA) for use in the Naval Shipboard Catalog. After approval from NAVSEA, Commercial Item Description (CID)s will be developed for the equipment and then transitioned to Submarine Force Atlantic for procurement and support of required ship change documentation.	-	0.210 0	-
Title: Electric Single Pallet Expeditionary Kitchen (ESPEK) ***Articles:*** ***Description:*** Develop a compact, self contained, all electric, expeditionary kitchen to prepare and serve 550 UGR-H&S ***FY 2010 Accomplishments:*** Upgrade prototypes based on testing results. Transition soft shelter and hard shelter Electronic Single Pallet Expeditionary Kitchen (ESPEK) prototypes to Air Force Services. Develop Technical Data Package to support future Air Force procurement.	0.176 0	-	-
Title: Modernization and Implementation of the Air Force Basic Expeditionary Airfield Resources (BEAR) ***Articles:*** ***Description:*** Provide Air Force new electric food service equipment; and implementation plan to support the initial (i) / follow-on (f) systems to support AF BEAR field feeding. ***FY 2010 Accomplishments:*** Provide complete BEAR-550 prototype field kitchen system to a Combat Training Sites to support Services Training efforts. Transition Technical Data Package (TDP) that includes design, layout, and recommended equipment items to Air Force Services Command and the BEAR Program Management Office (PMO) to procure complete kitchen systems.	0.244 0	-	-
Title: Modular Appliances for Field Feeding (MAFF)	-	-	0.300

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604713A: *Combat Feeding, Clothing, and Equipment*	PROJECT 548: *MIL SUBSISTENCE SYS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: Provide a suite of common, man portable, high efficient, close combustion, thermostatically controlled appliances for use accross the spectrum of field feeding and base camp operations. ***FY 2012 Plans:*** Transition MAFF from 6.4 funding and conduct Developmental Test (DT) and Operational Test (OT) on modular appliances.			
Title: Thermostatic Control for Modern Burner Unit (MBU) ***Articles:*** ***Description:*** Imbed a thermostatic control within the MBU to allow the kitchen appliance temperature to be regulated at a set temperature by cycling the MBU on and off automatically ***FY 2011 Plans:*** Integrate thermostatic control into the MBU control panel, simplify electronic operation and control analogs, increase means between failure time for Modern Burner Unit ***FY 2012 Plans:*** Complete testing and evaluation of integrated thermal control and transition to procurement.	-	0.094 0	0.175
Title: Product Improvements for Fielded Food Service Equipment and System, all services. ***Articles:*** ***Description:*** Improvements to secondary food service equipment items based on issues reported from the joint services. ***FY 2011 Plans:*** Product Improvements for Fielded Food Service Equipment and System, all services.	-	0.058 0	-
Title: Automated Shipboard Dishwashing System ***Description:*** Provides an automated dishwashing system that alleviates the manual labor involved in dishwashing and reduces manning requirements for future Navy platforms. ***FY 2012 Plans:*** Integrate & evaluate Phase III SBIR production model onboard an Aircraft Carrier and transition final system to PEO Carriers for procurement.	-	-	0.275
Title: Ration Airdrop Survivability	-	-	0.150

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604713A: *Combat Feeding, Clothing, and Equipment*	PROJECT 548: *MIL SUBSISTENCE SYS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: Provides updated high velocity airdrop performance characteristics for current ration configurations/designs, identifies ration survival rates for defined operational conditions critical to mission planning and effectiveness, and offers insight into capability gaps that might warrant revision to use protocol or appropriate product redesign and reengineering. ***FY 2012 Plans:*** Redesign components/ menus for retest, reassessment and recommendations for transition of improved, more survivable (via airdrop) rations.			
Accomplishments/Planned Programs Subtotals	2.010	2.118	2.075

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 603747: *Food Adv Dev*	4.045	4.234	3.843		3.843		4.131	4.343	4.292	Continuing	Continuing
• M65803: *Kitchen, Containerized, Field*	23.561									0.000	23.561
• M65802: *Sanitation Center, Field Feeding*	3.507									0.000	3.507

D. Acquisition Strategy

Complete System Development and Demonstration of food items and equipment for transition into competitive procurement contract. Complete advanced research efforts to support Engineer Change Proposals for previously developed equipment.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604713A: *Combat Feeding, Clothing, and Equipment*	PROJECT 548: *MIL SUBSISTENCE SYS*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CFP Management	C/FP	RDECOM:Natick, MA	1.404	0.223		0.219		-		0.219	Continuing	Continuing	Continuing
		Subtotal	1.404	0.223		0.219		-		0.219			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various combat feeding equipment, multi fuel and water equipment	C/FP	RDECOM:Natick, MA	1.404	1.055		1.031		-		1.031	Continuing	Continuing	Continuing
DOD Field Feeding Equipment	C/FP	Various:Various	2.291	0.280		0.275		-		0.275	Continuing	Continuing	Continuing
Army Field Feeding Equipment Development	C/FP	PM Force Sustainment Systems (FSS):Natick, MA	1.483	0.215		0.211		-		0.211	Continuing	Continuing	Continuing
		Subtotal	5.178	1.550		1.517		-		1.517			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	Various	TECOM/OEC/ ATC:Warren, MI	2.341	0.345		0.339		-		0.339	Continuing	Continuing	Continuing
		Subtotal	2.341	0.345		0.339		-		0.339			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.923	2.118		2.075		-		2.075			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604713A: *Combat Feeding, Clothing, and Equipment*	**PROJECT** 548: *MIL SUBSISTENCE SYS*

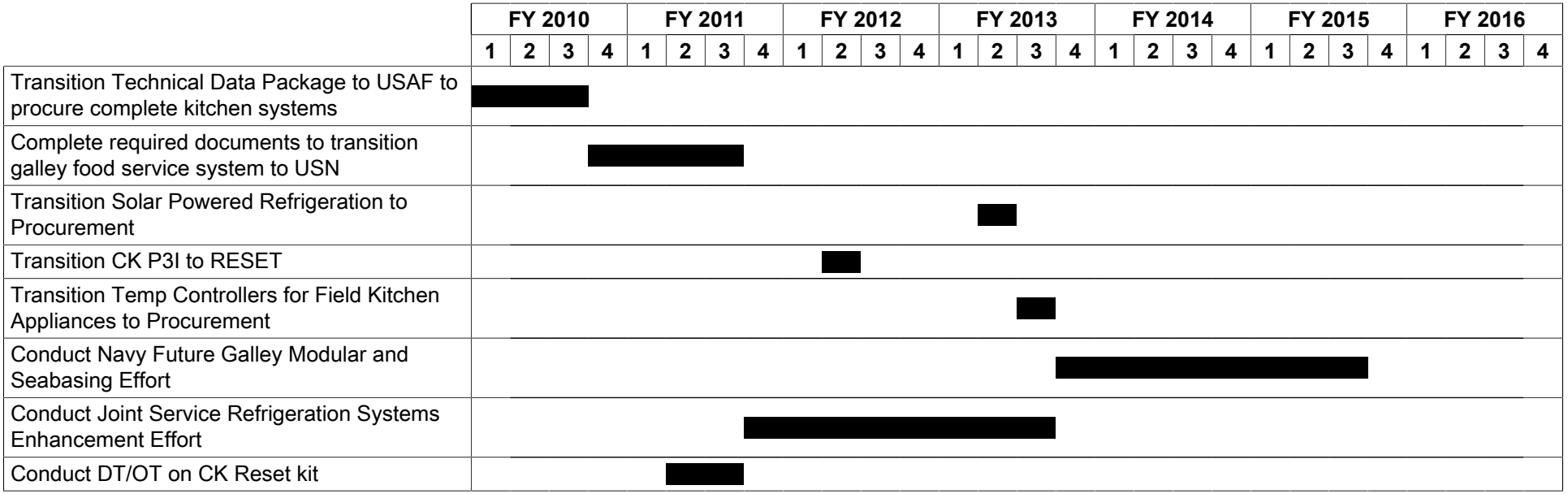

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604713A: *Combat Feeding, Clothing, and Equipment*	**PROJECT** 548: *MIL SUBSISTENCE SYS*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Transition Technical Data Package to USAF to procure complete kitchen systems	1	2010	3	2010
Complete required documents to transition galley food service system to USN	4	2010	3	2011
Transition Solar Powered Refrigeration to Procurement	2	2013	2	2013
Transition CK P3I to RESET	2	2012	2	2012
Transition Temp Controllers for Field Kitchen Appliances to Procurement	3	2013	3	2013
Conduct Navy Future Galley Modular and Seabasing Effort	4	2013	3	2015
Conduct Joint Service Refrigeration Systems Enhancement Effort	4	2011	3	2013
Conduct DT/OT on CK Reset kit	2	2011	3	2011

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	29.187	27.756	30.021	-	30.021	44.483	33.909	38.513	35.746	Continuing	Continuing
241: *NSTD COMBINED ARMS*	27.151	25.063	24.869	-	24.869	39.231	28.346	32.534	29.002	Continuing	Continuing
573: *Program Executive Office Simulation, Training SPT*	2.036	2.693	5.152	-	5.152	5.252	5.563	5.979	6.744	Continuing	Continuing

Note

None required.

A. Mission Description and Budget Item Justification

Program Element funds development of Non-System Training Devices to support force-on-force training at the Combat Training Centers (CTC), general military training, and training on more than one item/system, as compared with system devices which are developed in support of a specific item/weapon system. Training devices and training simulations contribute to the modernization of the forces by enabling and strengthening combat effectiveness through realistic training solutions for the Warfighter. Training devices maximize the transfer of knowledge, skills, and experience from the training situation to a combat situation. Force-on-force training at the National Training Center (NTC), Ft. Irwin, CA; Joint Readiness Training Center (JRTC), Ft. Polk, LA, and Joint Multinational Readiness Center (JMRC), formerly the Combat Maneuver Training Center (CMTC), Hohenfels, Germany; and battle staff training in Battle Command Training Program (BCTP) provide increased combat readiness through realistic collective training in low, mid, and high intensity scenarios. Project 241, Non-System Training Devices-Combined Arms, develops simulation training devices for Army-wide use, including the CTCs. Project 573 funds key organizational support to Army/DoD Transformation via innovative simulation and training device efforts. Program Executive Office (PEO) Simulation, Training and Instrumentation (STRI's) unique geographic co-location with other services facilitates joint training solutions in a common environment.

FY12 Project 241 funds significant development efforts on the Combat Training Center Instrumentation Systems (CTC-IS), Homestation Instrumentation Training System (HITS), Engagement Skills Trainer 2000 (EST 2000), Medical Simulation Training Center (MSTC), Target Modernization, Live Tactical Engagement Simulation System (L-TESS) formerly NLOS and formerly OneTESS, and further implementation of Live Training Transformation (LT2) through development of the Common Training Instrumentation Architecture (CTIA); enabling Joint training with the Joint Forces Command. FY12 program funding will support Live, Virtual, Constructive Integrating Architecture (LVC-IA) Increment 2 and expand the capability of the LVC Integrated Training Environment (ITE).

FY12 Project 573 will provide for minimum PEO STRI core operations supporting development of training devices and simulations by PEO STRI Project Managers (PM TRADE, PM ITTS, PM CATT, and PM Constructive Simulation).

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604715A: *Non-System Training Devices - Eng Dev*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	30.052	27.756	27.748	-	27.748
Current President's Budget	29.187	27.756	30.021	-	30.021
Total Adjustments	-0.865	-	2.273	-	2.273
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.865	-			
• Adjustments to Budget Years	-	-	2.273	-	2.273

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 241: *NSTD COMBINED ARMS*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
241: *NSTD COMBINED ARMS*	27.151	25.063	24.869	-	24.869	39.231	28.346	32.534	29.002	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project supports development of prototype training devices to support Combined Arms (Infantry, Armor, Aviation, Air Defense, Artillery, Engineer, Chemical, and Support troops) training and multi-system training within the Army, to include the Reserve Components.

Live Tactical Engagement Simulation System (L-TESS) formerly One Tactical Engagement Simulation System (OneTESS) and Non Line of Sight (NLOS) will provide a live, precision, combined arms Force-on-Force and Force-on-Target Non-Line of Sight (NLOS) training capability for Brigade and below exercises, at Homestation, Maneuver Combat Training Centers, deployed sites, and will be interoperable with current and future Instrumentable-Multiple Integrated Laser Engagement System (I-MILES) Line of Sight (LOS) laser based systems. L-TESS will provide realistic, real-time casualty effects for Force-on-Force tactical engagement training scenarios and the ability to integrate into training instrumentation systems to provide for high fidelity combined arms combat exercises.

The Common Training Instrumentation Architecture (CTIA) provides the common product-line architecture, product line software, standards, services, and architecture framework for developing the Live Training Transformation (LT2) Product Line of live training systems supporting Army-wide live instrumented Force-On-Force (FOF) and Force-On-Target (FOT) training requirements and is the core live architecture for the Live, Virtual, Constructive Integrated Training Environment (LVC-ITE). CTIA is a developmental, evolutionary acquisition program that continues to provide developmental support for the LT2 Product line live training systems and provides the live training architecture standard for achieving interoperability between live training systems and Live, Virtual, Constructive-Integrating Architecture (LVC-IA), battle command and control (C2) systems and the Test and Training Enabling Architecture (TENA).

Combat Training Center Instrumentation System (CTC-IS) funds the continued development of the Range Communication System at the National Training Center (NTC), to provide high-fidelity live, virtual, and constructive brigade training rotations which prepare Brigade Combat Teams, Joint partners, and supporting units to deploy in support of Army Force Generation (ARFORGEN). CTC-IS develops new data communications systems increasing tracking accuracy and coverage at the CTCs to provide greater training fidelity to training units. CTC-IS also develops infrastructure to host Future Army requirements.

The Engagement Skills Trainer (EST 2000) is an indoor, small arms, marksmanship training simulator for individuals and groups with a standard mix of light, heavy and crew-served weapons used in Overseas Contingency Operations (OCO). The EST 2000 provides training for individual marksmanship, small unit collective gunnery skills and tactical training. It incorporates judgmental use of force, including escalation of force and graduated response scenarios.

The Medical Simulation Training Center (MSTC) program provides a standardized combat medical training capability and supports Combat Lifesaver training for Active, Reserve and National Guard components, while being capable of training Joint, Interdepartmental, and Coalition Partner organizations to better prepare personnel for medical interventions under combat conditions. Each MSTC system is made of sub-systems, to include the Virtual Patient System (VPS) and the Medical Training Evaluation and Review (MeTER) system. The VPS contains multiple training devices, delivering increasing degrees of fidelity and trauma patient responses. MeTER

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 241: *NSTD COMBINED ARMS*

provides networked training and training management, with instruction and performance tracking/reporting capability. The MSTC system combines training devices, standardized programs of instruction, skilled instructors, adaptive scenarios, and tactical lane training into a cohesive, standardized, training platform for combat medicine.

The Live, Virtual, Constructive Integrating Architecture (LVC-IA) provides net-centric linkage that collects, retrieves and exchanges data among LVC Training Aids, Devices, Simulations, and Simulators (TADSS) and Joint/Army Battle Command Systems leading to an LVC Integrated Training Environment (ITE). The LVC-IA defines "how" information is exchanged among LVC domains and Battle Command Systems. The LVC Integrating Architecture includes common LVC components such as Enterprise After Action Review (AAR), Command and Control (C2) Adapters, Terrain Databases, Multi-level Security, and Hardware/Software. The integration of Live, Virtual, and Constructive TADSS with Battle Command will enable larger, more robust, and rich training events at reduced cost. The end-state goal is an LVC Integrated Training Environment that approximates the Operating Environment and provides value-added training and mission rehearsal opportunities to Commanders and units.

The Homestation Instrumentation Training System (HITS) provides a high-fidelity deployable instrumented training capability to support platoon thru battalion level Live Force-on-Force Training. HITS tracks locations of soldiers and vehicles and simulates weapons effects and engagements, allowing units to Train as they Fight against live opponents. HITS provides accurate feedback to training units. HITS consists of light deployable components that can be rapidly assembled/disassembled and transported to support deployed training. HITS integrates with future and legacy I-MILES. HITS is a member of the LT2 family of training systems and shares several hardware and software components with the CTC-IS. HITS is required for the Live function of Live-Virtual-Constructive Integrated Training Environment.

The Target Modernization provides for the development of advanced training target related technologies focused on enhancing threat realism and engagement feedback, development of a non-contact hit sensor to support counter defilade and area effects training, and development/integration of alternate energy (Green) solutions. Target Modernization provides for the support of changes in doctrine/weapons and alignment to the CTIA Product-Line framework and LVC-ITE.

FY12 funds significant development efforts on the Combat Training Center Instrumentation Systems (CTC-IS), Homestation Instrumentation Training System (HITS), Engagement Skills Trainer 2000 (EST 2000), Medical Simulation Training Center (MSTC), Target Modernization, Live Tactical Engagement Simulation System (L-TESS) formerly NLOS and formerly OneTESS, and further implementation of Live Training Transformation (LT2) through development of the Common Training Instrumentation Architecture (CTIA); enabling Joint training with the Joint Forces Command.

FY12 program funding will support Live, Virtual, Constructive Integrating Architecture (LVC-IA) Increment 2 and expand the capability of the LVC Integrated Training Environment (ITE).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Common Training Instrumention Architecture (CTIA) program.	1.987	2.122	1.938
Articles:	0	0	

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 241: *NSTD COMBINED ARMS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: Continue EMD phase contract activities for the CTIA program to provide the common architecture capabilities. ***FY 2010 Accomplishments:*** FY10: Continued development of CTIA to provide the common architecture capabilities that are essential for development, fielding, technology and capability insertion for Live Training Systems (LTS) to include: the Combat Training Centers-Instrumentation Systems (CTC-IS), Integrated Military Operations in Urbanized Terrain Training System (IMTS), Home Station Instrumentation Systems (HITS), Digital Ranges Training System (DRTS) training instrumentation programs and the Live, Virtual, Constructive-Integrated Training Environment (LVC-ITE) interoperability initiatives. ***FY 2011 Plans:*** FY11: Continue development of CTIA to provide the common architecture capabilities that are essential for development, fielding, technology and capability insertion for Live Training Systems (LTS) to include; the Combat Training Centers-Instrumentation Systems (CTC-IS), Integrated Military Operations in Urbanized Terrain Training System (IMTS), Home Station Instrumentation Systems (HITS), Digital Ranges Training System (DRTS) training instrumentation programs and the Live, Virtual, Constructive-Integrated Training Environment (LVC-ITE) interoperability initiatives. ***FY 2012 Plans:*** FY12: Continue development of CTIA to provide the common architecture capabilities that are essential for development, fielding, technology and capability insertion for Live Training Systems (LTS) to include: the Combat Training Centers-Instrumentation Systems (CTC-IS), Integrated Military Operations in Urbanized Terrain Training System (IMTS), Home Station Instrumentation Systems (HITS), Digital Ranges Training System (DRTS) training instrumentation programs and the Live, Virtual, Constructive-Integrated Training Environment (LVC-ITE) interoperability initiatives.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Combat Training Center Instrumentation System (CTC-IS). ***Articles:*** ***Description:*** Continue EMD phase contract activities for the CTC-IS. ***FY 2010 Accomplishments:*** Combat Training Center Instrumentation System (CTC-IS) funded the continued development of the Range Communications Systems at the National Training Center (NTC), Joint Readiness Training Center (JRTC) and Joint Multinational Readiness Center (JMRC) increasing tracking coverage and accuracy in order to increase training fidelity for Brigade Combat Team rotations to	4.458 0	4.518 0	4.814

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 241: *NSTD COMBINED ARMS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
better prepare units for deployment. The Observer Controller (OC) voice communication systems at the NTC and JMRC are unsupportable and present increasing risk to safety and the training mission. ***FY 2011 Plans:*** Combat Training Center Instrumentation System (CTC-IS) funds the continued development of the Range Communications Systems at the National Training Center (NTC), Joint Readiness Training Center (JRTC) and Joint Multinational Readiness Center (JMRC) increasing tracking coverage and accuracy in order to increase training fidelity for Brigade Combat Team rotations to better prepare units for deployment. The Observer Controller (OC) voice communication systems at the NTC and JMRC are unsupportable and present increasing risk to safety and the training mission. ***FY 2012 Plans:*** Combat Training Center Instrumentation System (CTC-IS) funds the continued development of the Range Communications Systems at the National Training Center (NTC), Joint Readiness Training Center (JRTC) and Joint Multinational Readiness Center (JMRC) increasing tracking coverage and accuracy in order to increase training fidelity for Brigade Combat Team rotations to better prepare units for deployment. Developing an improved video management capability for CTCs with maximum reuse of the new architecture components and LT2 standards.			
Title: Government Program Management for the Combat Training Center Instrumentation System (CTC-IS) program. ***Articles:*** ***Description:*** Government Program Management for the CTC IS program. ***FY 2010 Accomplishments:*** Program Management for the Combat Training Center Instrumentation System (CTC-IS) program. ***FY 2011 Plans:*** Program Management for the Combat Training Center Instrumentation System (CTC-IS) program. ***FY 2012 Plans:*** Program Management for the Combat Training Center Instrumentation System (CTC-IS) program.	0.430 0	0.449 0	0.544
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Exportable Training Capability-Instrumentation System (ETC-IS). ***Articles:*** ***Description:*** EMD phase contract activities for the ETC-IS program. ***FY 2010 Accomplishments:***	4.836 0	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 241: *NSTD COMBINED ARMS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
FY10: Exportable Training Capability-Instrumentation System (ETC-IS) program funding continued to provide for the development, integration, and testing of tracking capability, coverage and accuracy, and new Battle Command systems architecture to increase training fidelity for Brigade Combat Team rotations to better prepare units for deployment.			
Title: Government Program Management for the Exportable Training Capability - Instrumentation System (ETC-IS) program. ***Articles:*** ***Description:*** Government Program Management for the ETC-IS program. ***FY 2010 Accomplishments:*** Program Management for the ETC-IS program.	0.164 0	-	-
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Homestation Instrumentation Training System (HITS) program. ***Description:*** EMD phase contract activities for the HITS program. ***FY 2012 Plans:*** FY12: Develpment of Homestation Instrumentation Training System (HITS). Develop Observer Controller (OC) classified data and voice network. The Homestation Instrumentation Training System (HITS) provides a high-fidelity deployable instrumented training capability to support platoon thru battalion level Live Force-on-Force Training. HITS tracks locations of soldiers and vehicles and simulates weapons effects and engagements, allowing units to Train as they Fight against live opponents. HITS provides accurate feedback to training units. HITS consists of light deployable components that can be rapidly assembled/ disassembled and transported to support deployed training. HITS integrates with future and legacy Instrumentable, Multiple Integrated Laser Engagement Systems (I-MILES). HITS is a member of the Live Training Transformation (LT2) family of training systems and shares several hardware and software components with the Combat Training Center Instrumentation System (CTC-IS) and Exportable Training Capability Instrumentation System (ETC-IS). HITS provides the Live domain for Live-Virtual-Constructive training integration.	-	-	0.709
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Medical Simulation Training Center (MSTC). ***Description:*** EMD phase contract activities for the MSTC program. ***FY 2012 Plans:*** Development within the Virtual Patient System (VPS) an effective Tetherless Mannequin (TLM). Develop Virtual Patient training capability and a Medical Training Evaluation and Review (MeTER) system. MeTER system will have capability to use Army	-	-	1.340

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 241: *NSTD COMBINED ARMS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Knowledge Online to access the training and interoperate with the Virtual Patient System. Develop mobile training capability to support remote site training.			
Title: Government Program Management for the Medical Simulation Training Center (MSTC) program. ***Description:*** Government Program Management for the MSTC program. ***FY 2012 Plans:*** Program management costs associated with the FY12 Medical Training Evaluation and Review (MeTER) system.	-	-	0.191
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Engagement Skills Trainer 2000 (EST 2000) program. ***Description:*** EMD phase contract activities for the Engagement Skills Trainer 2000 (EST) program. ***FY 2012 Plans:*** EST 3D modeling to accurately portray all battlefield effects, in accordance with the Contemporary Operating Environment (COE), across the full range of military operations including: friendly and enemy forces and their doctrine, tactics, techniques and procedures; all military recognized terrain; atmospheric and weather conditions; specific enemy and friendly vehicles and equipment; dynamic, correlated terrain; the effects of munitions on personnel, vehicles and structures.	-	-	0.187
Title: Government Program Management for the Engagement Skills Trainer 2000 Program Management. ***Description:*** Government Program Management for the EST 2000 (EST) Program Management. ***FY 2012 Plans:*** Program management costs associated with the FY12 EST 3D modeling efforts.	-	-	0.172
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Live, Virtual, Constructive Integrating Architecture (LVC-IA) program. ***Articles:*** ***Description:*** Continue EMD phase contract activities for the LVC-IA program. ***FY 2010 Accomplishments:*** Developed system and performed design, development, integration and demonstration of the Live, Virtual, Constructive Integrating Architecture (LVC-IA) Increment 1 capability. ***FY 2011 Plans:***	5.572 0	6.008 0	6.134

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 241: *NSTD COMBINED ARMS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue to develop system and perform design, development, integration and demonstration of the Live, Virtual, Constructive Integrating Architecture (LVC-IA) Increment 1 capability. The LVC Integrating Architecture includes common LVC components. ***FY 2012 Plans:*** LVC-IA Engineering and Manufacturing Development (EMD) phase of Increment 2 will enable the integration of Live, Virtual and Constructive Training Aids, Devices and Simulations, Simulators (TADSS) with Joint/Army Battle Command Systems leading to an LVC Integrated Training Environment (ITE). This will enable larger, more robust and rich training events at reduced cost.			
Title: Government Program Management for the Live, Virtual, Constructive Integrating Architecture (LVC-IA) program. ***Articles:*** ***Description:*** Government Program Management for the LVC-IA program. ***FY 2010 Accomplishments:*** The Government Program Management Office for LVC-IA supported the design and development of increment 1. Funding supported manpower, facilities and training. ***FY 2011 Plans:*** The Government Program Management Office for LVC-IA supports the design, development and integration of increment 1 of LVC-IA. Funding supports manpower, facilities, training and operations and maintenance. ***FY 2012 Plans:*** The Government Program Management Office for LVC-IA supports the engineering and manfacturing development phase increment 2. Funding supports manpower, facilities, training, operations and maintence and other infrastructure.	1.030 0	1.068 0	1.068
Title: Government System Test and Evaluation for the Live, Virtual, Constructive Integrating Architecture (LVC-IA) program. ***Articles:*** ***Description:*** Government System Test and Evaluation for the LVC-IA program. ***FY 2010 Accomplishments:*** FY10 LVC-IA test support on system design and development for SDD phase increment 1. Established LVC-IA initial integration baseline and initiated planning, coordination activities for developmental builds and test events. ***FY 2011 Plans:***	0.362 0	0.923 0	0.923

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 241: *NSTD COMBINED ARMS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
FY11 LVC-IA continues test support on system design and development for SDD increment 1. Will also support integration testing on developed components for LVC-IA with other Battle Command Systems and LVC Training Aids. Conduct federation integration event (FIE), functional verification (FV) events for LVC-IA Builds 0 & 1. ***FY 2012 Plans:*** FY12 LVC-IA continue integration testing support on developed components for LVC-IA for inter-operability with TADSS and other Battle Command Systems. Conduct FIE, FV & system measurement of performance (SMP) events for LVC-IA Build 2. Complete Test Readiness Review (TRR) as well as Government Acceptance Testing (GAT) to be executed as two phased approach to include Developmental Testing (DT) and Operational Testing (OT). Further support the Engineering and Manufacturing Development (EMD) phase of Increment 2 on developed LVC-IA components for the LVC Integrated Training Environment (ITE).			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for theTarget Modernization program. ***Articles:*** ***Description:*** EMD phase contract activities for the Target Modernization program. ***FY 2011 Plans:*** FY11: Target Modernization initiates development of target system technologies which provide enhanced realism (look and behavior), threat/friend identification, and training performance feedback mechanisms. Target Modernization initiates integration with Live Training Transformation (LT2) and Live, Virtual, and Constructive (LVC) simulation interoperability. ***FY 2012 Plans:*** FY12: Target Modernization continues development of target system technologies which provide enhanced realism (look and behavior), threat/friend identification, and training performance feedback mechanisms.	-	2.303 0	1.638
Title: Government Program Management for the Target Modernization program. ***Articles:*** ***Description:*** Government Program Management for Target Modernization. ***FY 2011 Plans:*** Program Management for the Target Modernization program. ***FY 2012 Plans:*** Program Management for the Target Modernization program.	-	0.273 0	0.179
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the One Tactical Engagement Simulation System (OneTESS) program.	6.951 0	7.289 0	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 241: *NSTD COMBINED ARMS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Articles: ***Description:*** Continue EMD phase contract activities for OneTESS. ***FY 2010 Accomplishments:*** FY10: Continued development of One Tactical Engagement Simulation System (One TESS). Refined systems architecture, developed Future System/Joint, Live/Virtual and Constructive solutions and integrate operational testing that supported the training and testing communities into current combat systems under development. ***FY 2011 Plans:*** FY11: Continues development of One Tactical Engagement Simulation System (One TESS). Refine systems architecture, develop Future System/Joint, Live/Virtual and Constructive solutions and integrate operational testing that supports the training and testing communities into current combat systems under development.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Live Tactical Engagement Simulation System (L-TESS) program [formerly Non Line of Site (NLOS) and OneTESS]. ***Description:*** Continue EMD phase contract activities for the L-TESS(formerly NLOS) program. ***FY 2012 Plans:*** FY12: Continues development of Non Line of Sight (NLOS) capability for Real Time Casualty Assessment (RTCA). Perform Developmental Test/Operational Test (DT/OT) efforts that support the training and testing communities into systems under development. Support Milestone C documentation.	-	-	3.738
Title: Program Management for the NLOS (formerly OneTESS) program. ***Articles:*** ***Description:*** Program Management for the NLOS (formerly OneTESS) program. ***FY 2010 Accomplishments:*** Government Program Management for the OneTESS program. ***FY 2011 Plans:*** Program Management for the NLOS (formerly OneTESS) program.	1.361 0	0.110 0	-
Title: Governement Program Management for the Live Tactical Engagement Simulation System (L-TESS) program (formerly NLOS and OneTESS).	-	-	1.294

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 241: *NSTD COMBINED ARMS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: Governement Program Management for the Live Tactical Engagement Simulation System (L-TESS) program (formerly NLOS and OneTESS). ***FY 2012 Plans:*** Governement Program Management for the Live Tactical Engagement Simulation System (L-TESS) program (formerly NLOS and OneTESS).			
Accomplishments/Planned Programs Subtotals	27.151	25.063	24.869

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• NA0100: *Training Devices, Non-System*	348.251	325.824	168.392		168.392		207.568	187.136	188.579	Continuing	Continuing
• MA6601: *CTC Support*	85.319	23.400	133.178		133.178		152.651	145.307	97.573	Continuing	Continuing

D. Acquisition Strategy

Competitive development efforts based on performance specifications.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 241: *NSTD COMBINED ARMS*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS Program Management	Various	PEO STRI:Orlando, FL	6.575	0.110		-		-		-	Continuing	Continuing	0.000
CTC-IS Program Management	Various	PEO STRI:Orlando, FL	-	0.449		0.544		-		0.544	Continuing	Continuing	Continuing
ETC-IS Program Management	Various	PEO STRI:Orlando, FL	-	-		-		-		-	Continuing	Continuing	0.000
HITS Program Management	Various	PEO STRI:Orlando, FL	0.400	-		-		-		-	Continuing	Continuing	0.000
LVC-IA Program Management	Various	PEO STRI:Orlando, FL	-	1.068		1.068		-		1.068	Continuing	Continuing	Continuing
EST 2000 Program Management	Various	PEO STRI:Orlando, FL	0.214	-		0.172		-		0.172	Continuing	Continuing	Continuing
MSTC Program Management	Various	PEO STRI:Orlando, FL	0.191	-		0.191		-		0.191	Continuing	Continuing	Continuing
Target Modernization	Various	PEO STRI:Orlando, FL	-	0.273		0.179		-		0.179	Continuing	Continuing	Continuing
L-TESS (formerly NLOS and OneTESS) Program Management	Various	PEO STRI,:Orlando, FL	-	-		1.294		-		1.294	Continuing	Continuing	Continuing
		Subtotal	7.380	1.900		3.448		-		3.448			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS	SS/CPFF	General Dynamics:Fairfax, VA	112.098	6.658		-		-		-	Continuing	Continuing	0.000
L-TESS (formerly NLOS and OneTESS)	SS/CPFF	General Dynamics:Orlando, FL	-	-		3.299		-		3.299	Continuing	Continuing	Continuing
CTIA	SS/CPFF	TBS:TBS	-	1.729		1.572		-		1.572	Continuing	Continuing	Continuing
CTIA	C/CPFF	Lockheed Martin Inc.:Orlando, FL	57.091	-		-		-		-	Continuing	Continuing	0.000
CTC-IS	SS/FFP	TBS:TBS	-	4.518		4.814		-		4.814	Continuing	Continuing	Continuing
ETC-IS	SS/CPFF	General Dynamics C4 Systems:Orlando, FL 32826	-	-		-		-		-	Continuing	Continuing	0.000
HITS	SS/CPFF	TBS:TBS	-	-		0.709		-		0.709	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 241: *NSTD COMBINED ARMS*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HITS	C/FFP	Riptide:Orlando, FL	1.379	-		-		-		-	Continuing	Continuing	0.000
MSTC Development	C/FP	Multiple:Various	0.732	-		1.340		-		1.340	Continuing	Continuing	Continuing
EST 2000 Development	SS/FP	Cubic Simulation Systems Division:Various	1.528	-		0.187		-		0.187	Continuing	Continuing	Continuing
Congressional Add Center of Excellence for Military Operations in Urban Terrain and Cultural Trn	C/FP	Multiple:Various	2.996	-		-		-		-	Continuing	Continuing	Continuing
LVC-IA Development	C/CPAF	Cole Engineering Services, Inc:Various	-	6.008		6.134		-		6.134	Continuing	Continuing	Continuing
Target Modernization	TBD	TBS:TBS	-	2.221		1.584		-		1.584	Continuing	Continuing	Continuing
		Subtotal	175.824	21.134		19.639		-		19.639			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS	Various	Various:Orlando, FL	5.960	0.322		-		-		-	Continuing	Continuing	0.000
Target Modernization	Various	Various:Various	-	0.082		0.054		-		0.054	Continuing	Continuing	Continuing
CTIA	Various	Various:Various	10.597	0.393		0.366		-		0.366	Continuing	Continuing	Continuing
L-TESS (former NLOS and OneTESS)	Various	Various:Various	-	-		0.262		-		0.262	Continuing	Continuing	0.000
		Subtotal	16.557	0.797		0.682		-		0.682			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS Development and Test	Various	Multiple:Orlando, FL	3.483	0.309		-		-		-	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 241: *NSTD COMBINED ARMS*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LVC-IA Test Support	Various	Multiple:Orlando, FL	-	0.923		0.923		-		0.923	Continuing	Continuing	Continuing
HITS	Various	Various:Orlando, FL	0.740	-		-		-		-	Continuing	Continuing	0.000
L-TESS (formerly NLOS and OneTESS) Test Support	Various	Multiple:Orlando, FL	-	-		0.177		-		0.177	Continuing	Continuing	Continuing
IEDES	MIPR	Multiple:Orlando, FL	0.519	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	4.742	1.232		1.100		-		1.100			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	204.503	25.063		24.869		-		24.869			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604715A: *Non-System Training Devices - Eng Dev*	**PROJECT** 241: *NSTD COMBINED ARMS*

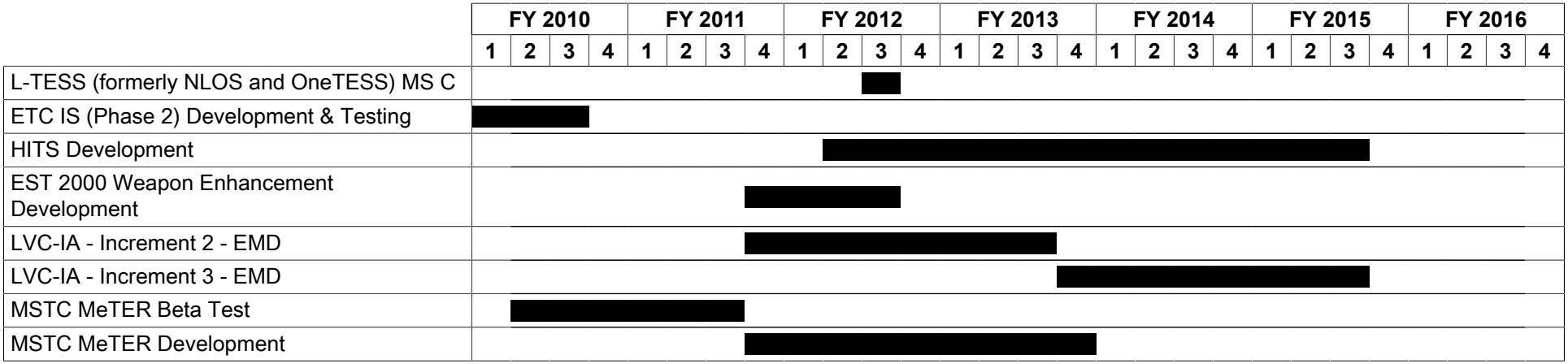

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604715A: *Non-System Training Devices - Eng Dev*	**PROJECT** 241: *NSTD COMBINED ARMS*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
L-TESS (formerly NLOS and OneTESS) MS C	3	2012	3	2012
ETC IS (Phase 2) Development & Testing	1	2010	3	2010
HITS Development	2	2012	3	2015
EST 2000 Weapon Enhancement Development	4	2011	3	2012
LVC-IA - Increment 2 - EMD	4	2011	3	2013
LVC-IA - Increment 3 - EMD	4	2013	3	2015
MSTC MeTER Beta Test	2	2010	3	2011
MSTC MeTER Development	4	2011	4	2013

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 573: *Program Executive Office Simulation, Training SPT*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
573: *Program Executive Office Simulation, Training SPT*	2.036	2.693	5.152	-	5.152	5.252	5.563	5.979	6.744	Continuing	Continuing
Quantity of RDT&E Articles											

Note

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A. Mission Description and Budget Item Justification

In support of Non-System Training Devices (NSTD), this project funds the US Army Program Executive Officer Simulation, Training and Instrumentation (PEO STRI) core operations supporting development of training devices and simulations by PEO STRI project managers (PM TRADE, PM ITTS, PM CATT, PM Constructive Simulation and PM Future Force.) FY12 funds labor in support of PEO operations.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Government Program Management to support PEO STRI.	1.642	2.693	5.152
Articles:	0	0	
Description: Government Program Management to support PEO STRI. ***FY 2010 Accomplishments:*** Government Program Management to support PEO STRI labor for project managers in PM TRADE, PM ITTS, PM CATT, PM Constructive Simulation and PM Future Force (Simulation). ***FY 2011 Plans:*** Government Program Management to support PEO STRI labor for project managers in PM TRADE, PM ITTS, PM CATT, PM Constructive Simulation and PM Future Force (Simulation). ***FY 2012 Plans:*** Government Program Management to support PEO STRI labor for project managers in PM TRADE, PM ITTS, PM CATT, and PM Constructive Simulation.			
Title: Government Program Management to support the Brigade Combat Team Modernization (BCT-M).	0.394	-	-
Articles:	0		
Description: Government Program Management for three Department of the Army Civilians working in PM Future Force Simulation supporting Brigade Combat Team Modernization (BCT-M).			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 573: *Program Executive Office Simulation, Training SPT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Public Law mandated the Army track FCS related work for accountability purposes. This funding represents salary dollars for three Department of the Army Civilians for the research and development of simulation systems to support the BCT-M.			
Accomplishments/Planned Programs Subtotals	2.036	2.693	5.152

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604715A: *Non-System Training Devices - Eng Dev*	PROJECT 573: *Program Executive Office Simulation, Training SPT*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management- PEO STRI	Various	PEO STRI:Orlando, FL	-	2.693		5.152		-		5.152	Continuing	Continuing	Continuing
Government Program Management - BCT-M	Various	PEO STRI:Orlando, FL	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	2.693		5.152		-		5.152			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	2.693		5.152		-		5.152			

Remarks

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604716A: *TERRAIN INFORMATION - ENG DEV*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	-	-	1.596	-	1.596	0.997	-	-	-	Continuing	Continuing
579: *FIELD ARMY MAP SYS ED*	-	-	1.596	-	1.596	0.997	-	-	-	Continuing	Continuing

Note

FY01 - Additional funding supports initiation of Research and Development of an automated tactical engineer command and control, mission planning and decision support capability.

A. Mission Description and Budget Item Justification

The Project Director for Combat Terrain Information Systems (PD CTIS) is responsible for developing topographic support systems for the Army. CTIS systems provide automated terrain analysis, terrain data management and graphics reproduction in support of Intelligence Preparation of the Battlefield (IPB), Command and Control, Terrain Visualization, weapons and sensor systems, and other topographic information customers. CTIS consists of the Digital Topographic Support System - Light (DTSS-L), DTSS-Heavy (DTSS-H), DTSS-Deployable (DTSS-D), DTSS-Base (DTSS-B) and the High Volume Map Production (HVMP) equipment. A Pre-Planned Product Improvement (P3I) program will be conducted to address technology insertion, technology refreshment of Commercial Off-the-Shelf equipment and modernization initiatives for the Topographic Support System (TSS). Experimentation results from the Div XXI Army Warfighter Experiment (AWE) identified technological enhancements necessary to support the First and Second Digital Divisions (FDD) and the Transformation Brigades. CTIS systems support the Legacy to Objective transition path of the Transformation Campaign Plan (CTP).

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	1.596	-	1.596
Total Adjustments	-	-	1.596	-	1.596
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-	-	1.596	-	1.596

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604716A: *TERRAIN INFORMATION - ENG DEV*	PROJECT 579: *FIELD ARMY MAP SYS ED*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
579: *FIELD ARMY MAP SYS ED*	-	-	1.596	-	1.596	0.997	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not Applicable for this item.

A. Mission Description and Budget Item Justification

This Project funds development of the Digital Topographic Support System (DTSS). All DTSS systems use Commercial Off the Shelf (COTS) software. DTSS varients include the: DTSS-Light (DTSS-L) which is shelter mounted on a HMMWV, DTSS-Deployable (DTSS-D) which is mounted in hand carried transit cases), DTSS-Base (DTSS-B) which is garrison based for data generation, and the High Volume Map Production System (HVMP) which reproduces digital maps. Current force DTSS systems provide the commander the ability to rapidly obtain terrain information and produce digital topographic products. The traditional terrain analysis, topographic and reproduction support provided by Army Engineer Terrain Teams was a slow, labor intensive process that does not meet the needs of the digital battlefield. The DTSS provides digital terrain analysis and map updates to commanders and weapons platforms in support of mission planning (e.g., imagery exploitation, Cover and Concealment, other Intelligence Preparation of the Battlespace), rehearsal (e.g., 3D fly through, simulations) and execution (e.g., Common Operational Picture, route planning). The DTSS automates terrain analysis and visualization, data base (development, updating, management, and dissemination), and graphics reproduction. The Combat Terrain Information Systems (CTIS) Modernization Plan emphasizes the development of a combined, integrated, tactically deployable, fully autonomous terrain analysis and graphics reproduction capability. These capabilities are being provided in HMMWV shelterized (DTSS-L) and transit case (DTSS-D) configurations. The DTSS-L is highly mobile and capable of supporting a full range of military operations, as well as peacetime stability and support operations. The DTSS-L has been Type Classified-Standard. The DTSS-D provides a COTS configuration that is capable of operating all of the terrain analysis software. The DTSS-D consists of transportable workstations and peripherals that can be set up to augment the tactical configurations. The DTSS-D does not include tactically deployable shelters and vehicles or tactical communications. The DTSS-D has been Type Classified-Standard. The DTSS-B was procured in response to a US Army Europe (USAEUR) initiative to develop the capability to generate terrain information over sparsely mapped areas to support contingency, mission rehearsal, and training operations. The DTSS-B is designed to augment the National Geospatial-Intelligence Angency (NGA) capabilities at the Echelon above Corps (EAC) level by providing quick response data generation, special purpose mapping, terrain analysis, and theater geospatial data baseing. The DTSS-B includes a component that is capable of handling National Technical Means information in a secure environment. The DTSS-B has been Type Classified-Standard. The HVMP provides a tactical capability to rapidly reproduce large volumes of topographic materiel from digital sources. HVMPs are capable of reproducing information from a variety of digital and hardcopy sources via direct digital interfaces. CTIS systems are deployed from Brigade through Echelon above Corps, Stryker Brigades and Special Forces Groups. Additionally, an institutional training classroom environment has been developed and integrated into the curriculum at the National Geospatial/Intelligence School (NGS). NGS provides critical MOS (Military Occupation Speciality) specific training on the operation and use of CTIS developed systems. Products developed as part of the CTIS RDT&E program (e.g., improved Battle Command Systems interoperability, migration to Joint Technical Architecture - Army (JTA-A) and Common Operating Environment (COE), improved data base management and distribution, automated feature extraction, improved tactical terrain decision aid functionality, rapid terrain visualization, battlefield terrain reasoning awareness (BTRA), migration to Distributed Common Ground Station - Army (DCGS-A) architecture, and improved graphics reproduction) are being incorporated into all of the DTSS hardware and software architectures. Additionally, the Current Force Topographic Support System (TSS)

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604716A: *TERRAIN INFORMATION - ENG DEV*	PROJECT 579: *FIELD ARMY MAP SYS ED*

found in Engineer Topographic Companies is outdated and must be modernized to keep pace with Army digitization. The modernization associated with the TSS include replacing the Operations, Distribution and Photomechanical Sections with DTSS-L, DTSS-D, and the HVMP. The Survey section will be downsized to a HMMWV configuration and the Drafting section will be updated to include digital cartographic equipment. This system supports the Current-to-Future Force transition path.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: Continue P3I development for DTSS. ***Description:*** Continue P3I development for DTSS - Initiate transition of functionality to DCGS-A, continue investigation of COTS upgrades, continue improvement of coalition/joint interoperability. ***FY 2012 Plans:*** Continue P3I development for DTSS - Initiate transition of functionality to DCGS-A, continue investigation of COTS upgrades, continue improvement of coalition/joint interoperability.	-	-	1.596
Accomplishments/Planned Programs Subtotals	-	-	1.596

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• KA2550: *Digital Topographic Support System (DTSS)*	9.766	9.364								Continuing	Continuing

D. Acquisition Strategy

The Acquisition Strategy for the Digital Topographic Support System-Light (DTSS-L) Engineering Manufacturing and Development (EMD) phase was to utilize Army standard equipment and the Common Hardware/Software (CHS) computer workstations in conjunction with non-development item (NDI) components to develop an integrated baseline hardware configuration. The previous Combat Terrain Information Systems (CTIS) System Engineering and Integration (SE&I) contractor (Lockheed Martin Corp) executed the EMD phase, performing system integration, and provided units for formal test and evaluation. Milestone III for the DTSS-L was successfully completed in Jan 98. Production of the DTSS-L commenced in February 1999. Funding to support technology refreshment of the DTSS-Heavy (DTSS-H), DTSS-L, and DTSS-Deployable (DTSS-D) was programmed on a 5-yr. cycle. DTSS-L replaced the DTSS-H in FY02/03. Acquisition of the DTSS-D and DTSS-B was completed in FY 1995 and FY 1996, respectively. Based upon Combatant Commanders, TRADOC (Training and Doctrine Command) and PEO C3S (Program Executive Officer Command, Control, Communications, and Computers) User Evaluation approvals, the DTSS-D was Type Classified -Standard and added to the gaining unit's Table of Organization and Equipment. Funding to support a 5-year technology refreshment program for the DTSS-D commenced in FY 2000 and for the DTSS-B commenced in FY 2002. The DTSS-B has also been Type Classified-Standard. The acquisition of the DTSS-D and DTSS-B relied upon existing contracts and commercial-off-the-shelf to the fullest extent possible. The Project Office will continue with this strategy for all technology refreshment programs. The HVMP Acquisition Strategy utilizes COTS and NDI components integrated with Army standard hardware (e.g., trucks, shelters, power equipment) to develop an integrated baseline. The pre-planned product improvement program (P3I) is being executed by the current SE&I contractor (Northrup Grumman, Inc.). The contracting strategy for the DTSS-L

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604716A: *TERRAIN INFORMATION - ENG DEV*	PROJECT 579: *FIELD ARMY MAP SYS ED*

program was to execute the EMD phase through the previous SE&I contractor, Lockheed Martin Corporation. A Competitive Cost Plus Fixed Fee (CPFF) contract was awarded for both the previous and existing CTIS SE&I contracts. A competitively awarded, Firm Fixed Price (FFP) contract was awarded to Sechan Electronics, Inc. for the Full Rate Production of the DTSS-Light. The HVMP contracting strategy is to execute the System Design and Demonstration (SDD) phase through the current SE&I contractor. A competitively awarded FFP contract was awarded to Sechan Electronics for the Full Rate Production of the HVMP. The computer workstations for CTIS programs were being procured, where appropriate, through the project manager for CHS.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	32.450	34.209	83.010	-	83.010	72.611	23.207	18.246	18.456	Continuing	Continuing
126: *FAAD C2 ED*	3.580	8.262	9.739	-	9.739	3.631	3.438	3.423	3.464	Continuing	Continuing
146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)*	15.311	19.227	15.532	-	15.532	15.275	15.802	14.823	14.992	Continuing	Continuing
149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT*	13.559	6.720	57.739	-	57.739	53.705	3.967	-	-	0.000	135.690

Note

Change Summary Explanations: Funding - FY 2011: Anticipated Congressional increase to support Overseas Contingency Operation efforts for the Counter-Rocket, Artillery and Mortar (C-RAM) system.

A. Mission Description and Budget Item Justification

The Air and Missile Defense Planning and Control System (AMDPCS) is an Army Objective Force System that provides integration of Air and Missile Defense (AMD) operations at all echelons. AMDPCS systems are deployed with Air Defense Artillery (ADA) brigades, Army Air and Missile Defense Commands (AAMDCs), and Air Defense and Airspace Management (ADAM) Cells at the Brigade Combat Teams (BCT's), Fires Brigades and Divisions. AMDPCS systems also provide air defense capabilities to Homeland Defense systems.

AMDPCS has three major components:
(1) The Air and Missile Defense Workstation (AMDWS) is an automated defense and staff planning tool that displays the common tactical and operational air picture. AMDWS provides the Battle Command (BC) capabilities embedded within the Warfighter Mission area. AMDWS is also the Net-centric interface to BC for all components of the AMD force. AMDWS provides an interoperability link to multinational air defense forces IAW Annex C to a Joint US/NATO Air Defense Agreement;
(2) The Air Defense System Integrator (ADSI) is a communications data link processor and display system that provides near-real time joint airspace situational awareness and fire direction command and control for Air and Missile Defense forces;
(3) The Army Air Defense shelter configurations use automated data processing equipment, tactical communications, Common Hardware Systems, standard vehicles and tactical power to provide AMD unit commanders and staffs with the capabilities to plan missions, direct forces, and control the airspace.

The Forward Area Air Defense Command, Control, and Intelligence (FAAD C2I) System provides continuously tailored situational awareness and situational understanding of the battlespace (including data on threat aircraft, cruise missiles and unmanned aerial vehicles (UAVs) to support the planning and decision process at various levels of command. The mission is to collect, digitally process and disseminate real time target cueing and tracking information, common tactical air picture, and C2I information to all Short Range Air Defense (SHORAD) weapons (Avenger, Bradley Linebacker, Manportable Air Defense System (MANPADS), joint and

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*

combined arms). Unique FAAD C2 software will provide this mission capability by integrating FAAD C2 engagement operations software with the Joint Digital Radio (JDR), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced Position Location Reporting System (EPLRS), Global Positioning System (GPS), Airborne Warning and Control System (AWACS), Sentinel and the Army Battle Command System (ABCS) architecture. Provides joint C2 interoperability and horizontal integration with PATRIOT, THAAD, MEADS, JLENS and SHORAD weapon systems by fusing sensor data to create a scalable and filterable single integrated air picture (SIAP) and common operating picture (COP) at Army divisions and below. System software will provide target data and engagement commands/status to the Surface Launched Advanced Medium Range Air-to-Air Missile (SLAMRAAM) air defense system. A small portion of RDTE funding is dedicated to SLAMRAAM C2 threshold requirements. FAAD C2 is the first system to digitize for Army Transformation in the First Digitized Division (FDD), III (Digitized) Corps, the Joint Contingency Force (JCF) and the STRYKER Brigade Combat Teams (SBCTs). The FAAD C2 netted and distributed system architecture has been briefed as the basis for a potential BM/C4I Future Combat System (FCS).

Counter-Rockets, Artillery and Mortar (C-RAM) is a spiral Initiative Non-Developmental program initiated by the Army Chief of Staff in response to Iraqi threat and twice validated theater ONS. The primary mission of the C-RAM program is to develop, procure, field and maintain a system of systems that can detect rocket, artillery or mortar launches; warn the defended area with sufficient time for personnel to take cover; intercept rounds in flight, thus preventing damage to ground forces or facilities; and enhance response to and defeat of enemy forces. C-RAM utilizes a system of systems (SoS) approach, and is comprised of a combination of multi-service fielded and non-developmental item (NDI) sensors, command and control (C2) systems and a modified U.S. Navy intercept system, with a low cost commercial off-the-shelf (COTS) warning system and wireless local area network. The system will be fielded to various fixed or sites, providing them correlated air and ground pictures and linking them to the Army Battle Command System (ABCS) and the Joint Defense Network (JDN), via various forms of communications to provide situational awareness and exchange of timely and accurate information to synchronize and optimize automated Shape, Sense, Warn, Intercept, Respond and Protect decisions.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	28.785	99.409	35.495	-	35.495
Current President's Budget	32.450	34.209	83.010	-	83.010
Total Adjustments	3.665	-65.200	47.515	-	47.515
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	3.665	-65.200	47.515	-	47.515

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 126: *FAAD C2 ED*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
126: *FAAD C2 ED*	3.580	8.262	9.739	-	9.739	3.631	3.438	3.423	3.464	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Forward Area Air Defense Command and Control (FAAD C2) system collects, digitally processes, and disseminates real-time target cuing and tracking information; the common tactical 3-dimentional air picture; and command, control, and intelligence information to all Maneuver Air and Missile Defense (MAMD) weapon systems (Avenger and Man-Portable Air Defense System (MANPADS), and joint and combined arms systems. The FAAD C2 system provides alerting data to air defense gunners, airspace battle management, and up-linking of mission operations, thereby enhancing force protection against air and missile attack. Situational awareness and targeting data is provided on threat aircraft, cruise missiles, and unmanned aerial systems (UAS). The FAAD C2 system provides this mission capability by integrating dynamic FAAD C2 engagement operations software with the Multifunctional Information Distribution System (MIDS), Joint Tactical Terminal (JTT), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced Position Location System (EPLRS), Global Positioning System (GPS), Airborne Warning and Control Systems (AWACS), Sentinel radar, and the Battle Command architecture. In addition, FAAD C2 provides interoperability with Joint C2 systems and horizontal integration with PATRIOT, Theater High-Altitude Area Defense (THAAD), Medium Extended Air Defense System (MEADS), and the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS) by fusing sensor data to create a scalable and filterable Single Integrated Air Picture (SIAP) and common tactical picture. The system software is a key component of the Air Defense and Airspace Management (ADAM) Cell that is being fielded to Brigade Combat Teams (BCTs), Multi-Functional Support Brigades and Divisions/Corps as part of the Army's modularity concept. System software is able to provide target data and engagement commands/status to MAMD Battalions. FAAD C2 is also a principal air defense system within the Homeland Defense Program. Soldiers from activated ARNG MAMD battalions operate the FAAD C2 systems in the National Capital Region and other locations.

Program funding enables fielding of equipment to the current force to support the Army's Program Objective to rapidly respond to immediate threats to Soldiers, identifies promising technologies, procures and integrates those capabilities for deployed forces in the same year. As capability gaps are identified by deployed forces, this program provides the ability for the Army to procure high priority/high leverage technology from industry during the same year, with the highest priority going to candidates that cover a multitude of gap areas. Program funding provides a method to rapidly keep pace with leading edge technologies and maintain interoperability and backwards compatibility caused by improvement to other system components (upgrade from common hardware version 2 to 3 and EPLRS enhancements).

In support of the Overseas Contingency Operations, FAAD C2 systems are in MAMD units and ADAM Cells deployed to Iraq and Afghanistan. These FAAD systems are critical in providing the local air picture to supported units and higher headquarters. FAAD C2 systems also provide target tracks and weapon controls for the C-RAM capability deployed to Iraq.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Support FAAD C2 software development for new Air and Missile Defense Composite Battalions, including unique software enhancements in support of Homeland Defense and security accreditation upgrades.	3.043 0	8.262 0	9.739	-	9.739

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	**PROJECT** 126: *FAAD C2 ED*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Articles: ***Description:*** Support FAAD C2 software development for new Air and Missile Defense Composite Battalions, including unique software enhancements in support of Homeland Defense and security accreditation upgrades. Integrate Sentinel radar Enhanced Target, Range and Classification (ETRAC). Continue integration of interfaces for the Joint Tactical Terminal (JTT). Incorporate IFF modes 1,2 and 3 (active decode) capabilities. ***FY 2010 Accomplishments:*** Support FAAD C2 software development for new Air and Missile Defense Composite Battalions, including unique software enhancements in support of Homeland Defense and security accreditation upgrades. Integrate Sentinel radar Enhanced Target, Range and Classification (ETRAC). Continue integration of interfaces for the Joint Tactical Terminal (JTT). Incorporate IFF modes 1,2 and 3 (active decode) capabilities. ***FY 2011 Plans:*** Support FAAD C2 software development for new Air and Missile Defense Composite Battalions, including unique software enhancements in support of Homeland Defense and security accreditation upgrades. Integrate Sentinel radar Enhanced Target, Range and Classification (ETRAC). Continue integration of interfaces for the Joint Tactical Terminal (JTT). Incorporate IFF modes 1,2 and 3 (active decode) capabilities. ***FY 2012 Base Plans:*** Support FAAD C2 software development for new Air and Missile Defense Composite Battalions, including unique software enhancements in support of Homeland Defense and security accreditation upgrades. Integrate Sentinel radar Enhanced Target, Range and Classification (ETRAC). Continue integration of interfaces for the Joint Tactical Terminal (JTT). Incorporate IFF modes 1,2 and 3 (active decode) capabilities.					
Title: Implement software modifications necessary for Internet Protocol version 6 (IPv6). ***Articles:*** ***Description:*** Implement software modifications necessary for Internet Protocol version 6 (IPv6). ***FY 2010 Accomplishments:*** Implement software modifications necessary for Internet Protocol version 6 (IPv6).	0.4140	-	-	-	-
Title: Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR) (DA directed) ***Articles:***	0.1230	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 126: *FAAD C2 ED*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR) (DA dirtected) ***FY 2010 Accomplishments:*** Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR)					
Accomplishments/Planned Programs Subtotals	3.580	8.262	9.739	-	9.739

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• AD5050: *FAAD C2*	8.263	42.511	5.007		5.007		4.746	4.720	4.782	Continuing	Continuing

D. Acquisition Strategy

The FAAD C2 acquisition strategy relies on evolutionary software development to rapidly meet the demands of air defense battle management/command, control, communications, computers, and intelligence (BM/C4I) requirements, and to keep pace with automated information technologies. The concept of evolutionary software development was followed in Blocks I,II, and III fieldings. FAAD C2 software provides engagement operational capabilities for the Army's Active and Reserve components.

FAAD C2 is a core component of C-RAM C2. As C-RAM C2 is developed, the interoperability of Air Defense functionality of FAAD C2 must be maintained.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 126: *FAAD C2 ED*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TRW, BLK I	Various	Northrop Grumman:Carson, CA	176.461	-		-		-		-	Continuing	Continuing	Continuing
Northrop Grumman/TRW, BLK II	Various	Northrop Grumman:Carson, CA	32.206	-		-		-		-	Continuing	Continuing	Continuing
RW, BLK III	Various	Northrop Grumman:Carson, CA	106.360	-		-		-		-	Continuing	Continuing	Continuing
TRW	Various	Northrop Grumman:Carson, CA	14.191	0.757		0.892		-		0.892	Continuing	Continuing	Continuing
TBD	Various	Northrop Grumman:Carson, CA	8.979	5.002		5.896		-		5.896	Continuing	Continuing	Continuing
Program Management Administration	Various	Various:Various	38.870	0.658		0.775		-		0.775	Continuing	Continuing	Continuing
Sentinel GBS	Various	Various:Various	3.791	-		-		-		-	Continuing	Continuing	Continuing
JTIDS	Various	PEO C3T:Ft. Monmouth, NJ	6.000	-		-		-		-	Continuing	Continuing	Continuing
ABCS SE&I	Various	Various:Various	0.346	-		-		-		-	Continuing	Continuing	Continuing
Software Engineering	Various	Various:Various	21.390	0.572		0.675		-		0.675	Continuing	Continuing	Continuing
C-RAM Sense, Warn & Intercept	Various	Various:Various	83.842	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	492.436	6.989		8.238		-		8.238			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
RTTC	Various	WSMR:New Mexico	2.947	-		-		-		-	Continuing	Continuing	Continuing
ADATD	Various	Ft Bliss, TX:Ft Bliss, TX	12.795	-		-		-		-	Continuing	Continuing	Continuing
AATD	Various	Various:Ft Eustis, VA	0.408	-		-		-		-	Continuing	Continuing	Continuing
ATEC	Various	Various:Alexandria, VA	2.441	0.276		0.325		-		0.325	Continuing	Continuing	Continuing
Yuma Proving Ground	Various	YPG:Yuma, AZ	8.844	0.997		1.176		-		1.176	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 126: *FAAD C2 ED*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	27.435	1.273		1.501		-		1.501			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	519.871	8.262		9.739		-		9.739			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	**PROJECT** 126: *FAAD C2 ED*

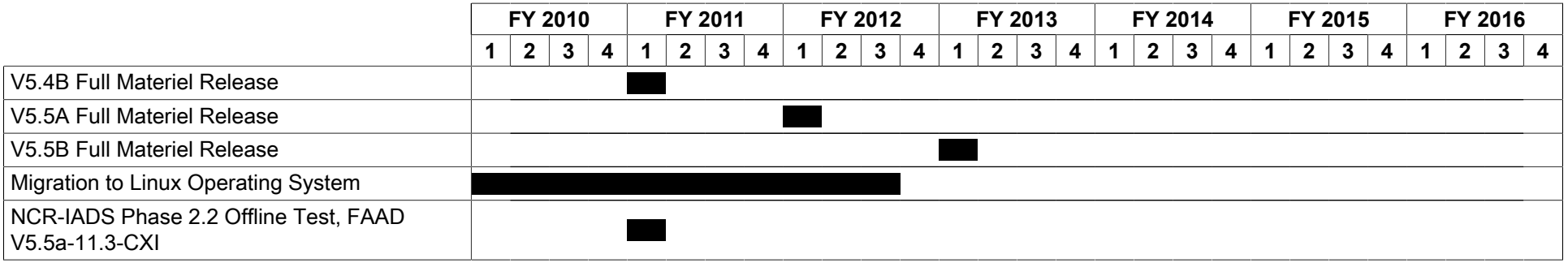

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	**PROJECT** 126: *FAAD C2 ED*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
V5.4B Full Materiel Release	1	2011	1	2011
V5.5A Full Materiel Release	1	2012	1	2012
V5.5B Full Materiel Release	1	2013	1	2013
Migration to Linux Operating System	1	2010	3	2012
NCR-IADS Phase 2.2 Offline Test, FAAD V5.5a-11.3-CXI	1	2011	1	2011

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)*	15.311	19.227	15.532	-	15.532	15.275	15.802	14.823	14.992	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Air and Missile Defense Planning and Control System (AMDPCS) is an Army Objective Force System that provides integration of Air and Missile Defense (AMD) operations at all echelons. AMDPCS systems are deployed with Air Defense Artillery (ADA) brigades, Army Air and Missile Defense Commands (AAMDCs), and Air Defense and Airspace Management (ADAM) Cells at the Brigade Combat Teams (BCT's), Multi Functional Support Brigades and Divisions/Corps. AMDPCS systems also provide air defense capabilities to Homeland Defense systems.

The development of ADAM Cells is essential in fulfilling the Army's Modularity requirement. ADAM Cells provide the Commander at BCTs, Brigades and Divisions with air defense situational awareness and airspace management capabilities. They also provide the interoperability link with Joint, multinational and coalition forces. AMDPCS components are vital in the transformation of ADA units and the activation of the Air & Missile Defense (AMD) Battalions. AMDPCS has three major components:

(1) The Air and Missile Defense Workstation (AMDWS) is an automated defense and staff planning tool that displays the common tactical and operational 3-dimentional air picture. AMDWS provides the Battle Command (BC) capabilities embedded within the Warfighter Mission area. AMDWS is also the Net-centric interface to BC for all components of the AMD force. AMDWS provides an interoperability link to multinational air defense forces IAW Annex C to a Joint US/NATO Air Defense Agreement;

(2) The Air Defense System Integrator (ADSI) is a communications data link processor and display system that provides near-real time, 3-dimensional, joint airspace situational awareness and fire direction command and control for Air and Missile Defense forces;

(3) The Army Air Defense shelter configurations use automated data processing equipment, tactical communications, Common Hardware Systems, standard vehicles and tactical power to provide AMD unit commanders and staffs with the capabilities to plan missions, direct forces, and control the airspace.

In support of the Overseas Contingency Operations(OCO), AMDWS and ADSIs are vital components of the AMDPCS shelter systems fielded to ADAM Cells that have deployed to Iraq and Afghanistan. In addition, these components have also been integrated into non-ADA higher headquarters such as the Coalition Forces Land Component Command (CFLCC). AMDWS is a critical component in the integration and fielding of a Counter-Rocket, Artillery and Mortar (C-RAM) capability to Operating Bases in Iraq and elsewhere. In support of Homeland Defense missions, the AMDWS has been integrated as the Force Operations component into the Joint Service/Air Force architecture. These AMDPCS systems provide the common tactical air picture, a major component of the Common Operating Picture (COP), and are critical to the development and planning of offensive and defensive operations.

FY12 funds the development, software engineering, testing and certificiation of the AMDWS, ADSI, and sheltered subsystem software as described below.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Continue AMDWS development and support of LANDWARNET/Battle Command Framework.	9.765	13.574	10.981	-	10.981
Articles:	0	0			

Description: Continue AMDWS development and support of LANDWARNET/Battle Command Framework. Complete AMDWS software engineering and development consistent with Capability Set 13-14 requirements, evolving the air and missile defense planning and control requirements to a net-centric environment, and fulfilling the air defense force operations capabilities identified in the AMD TRADOC capabilities requirement list. Complete AMDWS software development and rehost onto emerging light/laptop common hardware systems. Continue integration of the PATRIOT Air Defense system Tactical Planner (PTP) and the Theater Battle Management Core Systems (TBMCS). Initiate development of the other AMD Platforms such as JLENS and Joint Theater Battle Operations Net-Centric Environment interfaces. Continue supporting the Air Force Joint Tactical Air and Missile Defense (JTAMD), and support the evolving development of the Force Operations portion of the Integrated Air and Missile Defense (IAMD) System of Systems.

FY 2010 Accomplishments:
Continue AMDWS development and support of LANDWARNET/Battle Command Framework. Complete AMDWS software engineering and development consistent with Capability Set 13-14 requirements, evolving the air and missile defense planning and control requirements to a net-centric environment, and fulfilling the air defense force operations capabilities identified in the AMD TRADOC capabilities requirement list. Complete AMDWS software development and rehost onto emerging light/laptop common hardware systems. Continue integration of the PATRIOT Air Defense system Tactical Planner (PTP) and the Theater Battle Management Core Systems (TBMCS). Initiate development of the other AMD Platforms such as JLENS and Joint Theater Battle Operations Net-Centric Environment interfaces. Continue supporting the Air Force Joint Tactical Air and Missile Defense (JTAMD), and support the evolving development of the Force Operations portion of the Integrated Air and Missile Defense (IAMD) System of Systems.

FY 2011 Plans:
Continue AMDWS development and support of LANDWARNET/Battle Command Framework. Complete AMDWS software engineering and development consistent with Capability Set 13-14 requirements, evolving the air and missile defense planning and control requirements to a net-centric environment, and fulfilling the air defense force operations capabilities identified in the AMD TRADOC capabilities requirement list. Complete AMDWS software development and rehost onto emerging light/laptop common hardware systems. Continue integration of the PATRIOT Air Defense system Tactical Planner (PTP) and the Theater Battle Management Core Systems (TBMCS). Initiate development of the other AMD Platforms such as JLENS and Joint Theater

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Battle Operations Net-Centric Environment interfaces. Continue supporting the Air Force Joint Tactical Air and Missile Defense (JTAMD), and support the evolving development of the Force Operations portion of the Integrated Air and Missile Defense (IAMD) System of Systems. ***FY 2012 Base Plans:*** Complete AMDWS software engineering consistent with Capability Set 13-14 requirements, to include greater net-centricity and AMD TRADOC requirements. Re-hosting of the AMDWS system on a new OS (Microsoft Windows Server) and improvements to the hardware platform graphics. Support interconnectivity with PATRIOT PDB-7 production. Continue integration with C2BMC (replacing JDP), and Theatre Battle Management Core Systems (TBMCS). Continuing support of JLENS and JTAMD, as well as the ever evolving development work with Integrated Air Missile Defense. Supporting Tactical Battle Command system collapse effort with the design of thick and thin clients for hosting Air Missile Defense planning and Engagement information on the Command Post of the Future (CPOF) client.					
Title: Continue ADSI software engineering and development in software versions 15, and 15.1 ***Articles:*** ***Description:*** Continue ADSI software engineering and development in software versions 15, and 15.1 including testing and certification of capabilities for TAC View Situational Awareness, with air control support, scenario generation and 3-dimensional capability, full TADIL-J, Joint Range Extension Application Protocols (JREAP) for link 16 messages, MIDS TADIL-J connectivity, and Windows XP Pro and LINUX Realtime. ***FY 2010 Accomplishments:*** Continue ADSI software engineering and development in software versions 15, and 15.1 including testing and certification of capabilities for TAC View Situational Awareness, with air control support, scenario generation and 3-dimensional capability, full TADIL-J, Joint Range Extension Application Protocols (JREAP) for link 16 messages, MIDS TADIL-J connectivity, and Windows XP Pro and LINUX Realtime ***FY 2011 Plans:*** Continue ADSI software engineering and development in software versions 15, and 15.1 including testing and certification of capabilities for TAC View Situational Awareness, with air control support, scenario generation	1.691 0	1.730 0	1.398	-	1.398

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
and 3-dimensional capability, full TADIL-J, Joint Range Extension Application Protocols (JREAP) for link 16 messages, MIDS TADIL-J connectivity, and Windows XP Pro and LINUX Realtime ***FY 2012 Base Plans:*** Continue ADSI software engineering and development in software versions 15, and 15.1 including testing and certification of capabilities for TAC View Situational Awareness, with air control support, scenario generation and 3-dimensional capability, full TADIL-J, Joint Range Extension Application Protocols (JREAP) for link 16 messages, MIDS TADIL-J connectivity, and Windows XP Pro and LINUX Realtime					
Title: Continue engineering, development, test and evaluation of the AMDPCS shelter subsystem Objective configurations; continue evaluation and definitization of the AMDPCS tactical communications, data proc ***Articles:*** ***Description:*** Continue engineering, development, test and evaluation of the AMDPCS shelter subsystem Objective configurations; continue evaluation and definitization of the AMDPCS tactical communications, data processing and vehicle/shelter/power generation/environmental system block upgrade program for fielded systems. ***FY 2010 Accomplishments:*** Continue engineering, development, test and evaluation of the AMDPCS shelter subsystem Objective configurations; continue evaluation and definitization of the AMDPCS tactical communications, data processing and vehicle/shelter/power generation/environmental system block upgrade program for fielded systems. ***FY 2011 Plans:*** Continue engineering, development, test and evaluation of the AMDPCS shelter subsystem Objective configurations; continue evaluation and definitization of the AMDPCS tactical communications, data processing and vehicle/shelter/power generation/environmental system block upgrade program for fielded systems. ***FY 2012 Base Plans:*** Continue engineering, development, test and evaluation of the AMDPCS shelter subsystem Objective configurations; continue evaluation and definitization of the AMDPCS tactical communications, data processing and vehicle/shelter/power generation/environmental system block upgrade program for fielded systems.	2.520 0	2.673 0	2.143	-	2.143
Title: Continue software system certification testing, accreditation, and approval of Authority-to-Operate for the various software systems; continue Army and Joint integration and interoperability assessmen ***Articles:***	1.154 0	1.250 0	1.010	-	1.010

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	**PROJECT** 146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Continue software system certification testing, accreditation, and approval of Authority-to-Operate for the various software systems; continue Army and Joint integration and interoperability assessments. ***FY 2010 Accomplishments:*** Continue software system certification testing, accreditation, and approval of Authority-to-Operate for the various software systems; continue Army and Joint integration and interoperability assessments. ***FY 2011 Plans:*** Continue software system certification testing, accreditation, and approval of Authority-to-Operate for the various software systems; continue Army and Joint integration and interoperability assessments. ***FY 2012 Base Plans:*** Continue software system certification testing, accreditation, and approval of Authority-to-Operate for the various software systems; continue Army and Joint integration and interoperability assessments.					
Title: Small Business Innovative Research/Small Business Technology Transfer Programs. (DA directed) ***Articles:*** ***Description:*** Small Business Innovative Research/Small Business Technology Transfer Programs. (DA directed) ***FY 2010 Accomplishments:*** Small Business Innovative Research/Small Business Technology Transfer Programs.	0.181 0	-	-	-	-
Accomplishments/Planned Programs Subtotals	15.311	19.227	15.532	-	15.532

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• AD5070: *AMDPCS*	62.267	57.038	62.710	28.000	90.710		22.574	29.348	24.427	Continuing	Continuing

D. Acquisition Strategy

The acquisition strategy relies on non-development items (NDI) and evolutionary software development to rapidly meet the demands of air defense battle management command, control, communications, computers, and intelligence (BM/C4I) requirements and to keep pace with automated information technologies. The concept of evolutionary software development will be accomplished in a series of AMDWS and ADSI Block releases and upgrades. AMDPCS is being developed for both the Army's Active and Reserve components.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)*

AMDWS is a prime component of C-RAM. It provides the Forward Operating Base (FOB) commander with clearance of fires display and enemy munitions flight paths.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Northrop Grumman/TRW	Various	Huntsville, AL:Huntsville AL	75.056	12.288		9.400		-		9.400	Continuing	Continuing	Continuing
ULTRA Electronics, ADSI	Various	Austin, TX:Austin, TX	6.375	0.281		0.222		-		0.222	Continuing	Continuing	Continuing
Program Management Administration	Various	Various:Various	40.846	4.999		4.893		-		4.893	Continuing	Continuing	Continuing
ABCS SE&I	Various	Ft Monmouth, NJ:Ft Monmouth, NJ	0.619	-		-		-		-	Continuing	Continuing	Continuing
Software Engineering	Various	Various:Various	10.150	1.538		0.932		-		0.932	Continuing	Continuing	Continuing
		Subtotal	133.046	19.106		15.447		-		15.447			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Certification	Various	JITC:Ft Huachuca, AZ	0.839	0.073		0.054		-		0.054	Continuing	Continuing	Continuing
Interoperability Assessment	Various	CTSF:Ft Hood, TX	1.241	0.048		0.031		-		0.031	Continuing	Continuing	Continuing
		Subtotal	2.080	0.121		0.085		-		0.085			

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	135.126	19.227		15.532		-		15.532			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	**PROJECT** 146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)*

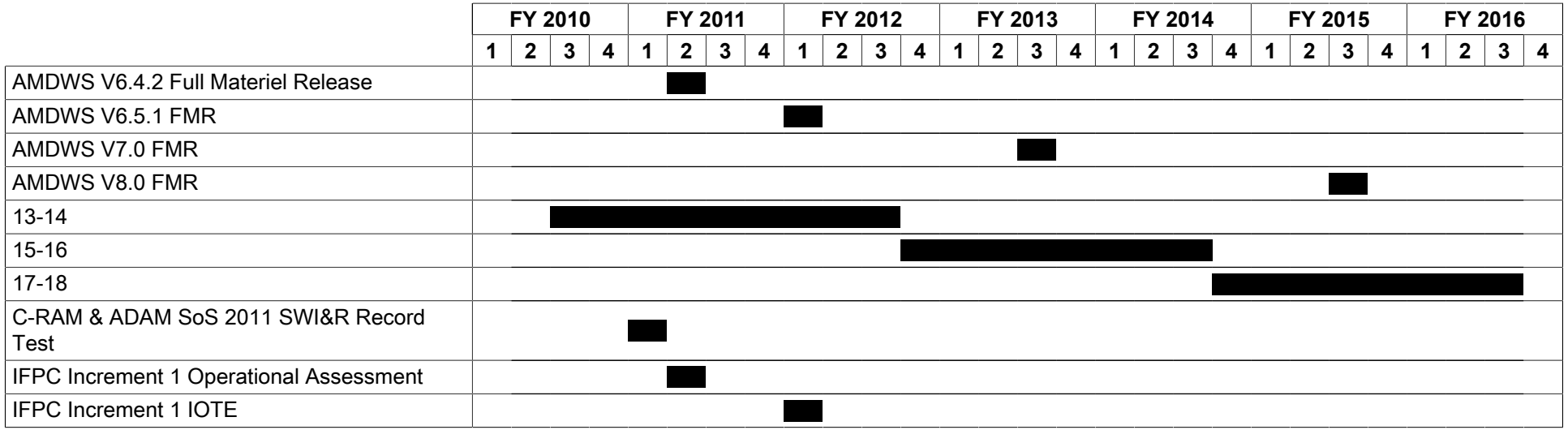

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	**PROJECT** 146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
AMDWS V6.4.2 Full Materiel Release	2	2011	2	2011
AMDWS V6.5.1 FMR	1	2012	1	2012
AMDWS V7.0 FMR	3	2013	3	2013
AMDWS V8.0 FMR	3	2015	3	2015
13-14	3	2010	3	2012
15-16	4	2012	3	2014
17-18	4	2014	3	2016
C-RAM & ADAM SoS 2011 SWI&R Record Test	1	2011	1	2011
IFPC Increment 1 Operational Assessment	2	2011	2	2011
IFPC Increment 1 IOTE	1	2012	1	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT*	13.559	6.720	57.739	-	57.739	53.705	3.967	-	-	0.000	135.690
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

: Counter-Rocket, Artillery and Mortar (C-RAM) is an evolutionary non-developmental program initiated by the Army Chief of Staff in response to the Indirect Fire (IDF) threat and a validated Operational Needs Statement (ONS). The primary mission of the C-RAM program is to develop, procure, field, and maintain a System of Systems (SoS) that can detect RAM launches; warn the defended area with sufficient time for personnel to take cover; intercept rounds in flight, thus preventing damage to ground forces or facilities; and enhance response to and defeat of enemy forces. The C-RAM current capability utilizes a SoS approach and is comprised of a combination of multi-service fielded and non-developmental item (NDI) sensors, command and control (C2) systems, and a modified U.S. Navy intercept system (Land-based Phalanx Weapon System (LPWS)), with a low cost commercial off-the-shelf (COTS) warning system and local area network. The C-RAM SoS capability is currently fielded at multiple sites in two theaters of operation, providing them correlated air and ground pictures and linking them to the Army Battle Command System (ABCS) and the Joint Defense Network (JDN) with various forms of communications to provide situational awareness and exchange of timely and accurate information to synchronize and optimize automated Shape, Sense, Warn, Intercept, Respond, and Protect decisions.

The fielding of the C-RAM SoS was accomplished through an incremental acquisition process driven by urgent operational needs, theater priorities, and emerging capability requirements to provide a counter-RAM capability to fielded forces. The C-RAM SoS approach was initially validated by a Proof of Principle demonstration in December 2004 and has undergone more than 20 Army Test and Evaluation Command (ATEC)-conducted operational assessments to incorporate multiple improvements in response to changes in threat tactics and lessons learned. The C-RAM Program Directorate (PD C-RAM) has fielded the Sense and Warn (S&W) capability to 16 Forward Operating Bases (FOBs) in support of Operation New Dawn (OND) (formerly Operation Iraqi Freedom), with Sense, Warn, and Intercept at three (3) of those FOBs. PD C-RAM is currently employing a phased approach for fielding C-RAM S&W capability to 22 FOBs in support of Operation Enduring Freedom (OEF) - fielding an Initial S&W capability to those FOBs with existing unit radars, followed by fielding the Full S&W capability using the latest TPQ-49 radars with 1361K Waveform Generators as they become available. In response to a theater requirement tasked to the Rapid Equipping Force (REF), C-RAM installed Mass Notification Systems (MNS) at multiple OEF sites to support base-wide alerts and announcements. Additional MNS fieldings are anticipated.

Current development efforts include the implementation of improvements and upgrades/tests to fielded C-RAM, including integration/use of tactical radios, integration of Warn into the C2 workstation, mobile Up-Gun LPWS, integration with Unmanned Aerial Systems Universal Ground Station, and dynamic clearance of fires. Transition of the C-RAM program to the follow-on acquisition Program of Record (POR), Indirect Fire Protection Capability (IFPC), is supported by the IFPC Increment 1 Capability Production Document (CPD) approved in August 2010, which requires fielding a Warn capability to the Brigade Combat Teams (BCT).

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Test/demonstration support for new C-RAM capabilities ***Articles:*** ***Description:*** Test/demonstration support for new C-RAM capabilities ***FY 2010 Accomplishments:*** Test/demonstration support for new C-RAM capabilities	1.738 0	-	-	-	-
Title: Develop Threat Evaluation and Weapons Assignment (TEWA) capabilities ***Articles:*** ***Description:*** Develop Threat Evaluation and Weapons Assignment (TEWA) capabilities ***FY 2010 Accomplishments:*** Develop Threat Evaluation and Weapons Assignment (TEWA) capabilities	2.539 0	-	-	-	-
Title: Integrate with Rapid Digital ***Articles:*** ***Description:*** Integrate with Rapid Digital ***FY 2010 Accomplishments:*** Integrate with Rapid Digital	1.912 0	-	-	-	-
Title: Develop Advanced Defense Design System Exerciser ***Articles:*** ***Description:*** Develop Advanced Defense Design System Exerciser ***FY 2010 Accomplishments:*** Develop Advanced Defense Design System Exerciser	1.687 0	-	-	-	-
Title: Support Joint, Interagency and Multi-national (JIM) interoperability (Common Link Integration Processing (CLIP) integration, communications improvement) ***Articles:*** ***Description:*** Support Joint, Interagency and Multi-national (JIM) interoperability (Common Link Integration Processing (CLIP) integration, communications improvement)	1.223 0	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Support Joint, Interagency and Multi-national (JIM) interoperability (Common Link Integration Processing (CLIP) integration, communications improvement)					
Title: Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR) ***Articles:*** ***Description:*** Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR) ***FY 2010 Accomplishments:*** Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR)	0.306 0	-	-	-	-
Title: C-RAM C2 CWMI/ Advanced User Interface ***Articles:*** ***Description:*** C-RAM C2 CWMI/ Advanced User Interface ***FY 2010 Accomplishments:*** C-RAM C2 CWMI/ Advanced User Interface ***FY 2011 Plans:*** C-RAM C2 CWMI/ Advanced User Interface ***FY 2012 Base Plans:*** C-RAM C2 CWMI/ Advanced User Interface	0.409 0	1.336 0	0.510	-	0.510
Title: Field Artillery (FA) Integration and Testing ***Articles:*** ***Description:*** Field Artillery (FA) Integration and Testing ***FY 2010 Accomplishments:*** Field Artillery (FA) Integration and Testing ***FY 2012 Base Plans:*** Field Artillery (FA) Integration and Testing	0.308 0	-	1.019	-	1.019
Title: Air Defense (AD) Integration & Testing ***Articles:***	0.354 0	-	1.170	-	1.170

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Air Defense (AD) Integration & Testing ***FY 2010 Accomplishments:*** Air Defense (AD) Integration & Testing ***FY 2012 Base Plans:*** Air Defense (AD) Integration & Testing					
Title: Mobile Warn Subsystem Improvement (Mesh Network)	0.456	-	1.510	-	1.510
Articles:	0				
Description: Mobile Warn Subsystem Improvement (Mesh Network) ***FY 2010 Accomplishments:*** Mobile Warn Subsystem Improvement (Mesh Network) ***FY 2012 Base Plans:*** Mobile Warn Subsystem Improvement (Mesh Network)					
Title: LPWS Block 1B Baseline 2 Enhancements	0.265	-	0.876	-	0.876
Articles:	0				
Description: LPWS Block 1B Baseline 2 Enhancements ***FY 2010 Accomplishments:*** LPWS Block 1B Baseline 2 Enhancements ***FY 2012 Base Plans:*** LPWS Block 1B Baseline 2 Enhancements					
Title: Test Increment I Capability	-	5.384	-	-	-
Articles:		0			
Description: Test Increment I Capability ***FY 2011 Plans:*** Test Increment I Capability					
Title: C-RAM C2 System Migration via MPU/MCU/3D	1.055	-	3.488	-	3.488

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Articles: ***Description:*** C-RAM C2 System Migration via MPU/MCU/3D ***FY 2010 Accomplishments:*** C-RAM C2 System Migration via MPU/MCU/3D ***FY 2012 Base Plans:*** C-RAM C2 System Migration via MPU/MCU/3D	0				
Title: Digital "Clearance of Fires" for Respond ***Articles:*** ***Description:*** Digital ***FY 2010 Accomplishments:*** Digital ***FY 2012 Base Plans:*** Digital	0.409 0	-	1.354	-	1.354
Title: Advanced Sensor Correlation and Architecture ***Articles:*** ***Description:*** Advanced Sensor Correlation and Architecture ***FY 2010 Accomplishments:*** Advanced Sensor Correlation and Architecture ***FY 2012 Base Plans:*** Advanced Sensor Correlation and Architecture	0.629 0	-	2.079	-	2.079
Title: Scaleable and Disributed Control Architecture (SSWIR) ***Articles:*** ***Description:*** Scaleable and Disributed Control Architecture (SSWIR) ***FY 2010 Accomplishments:***	0.210 0	-	0.695	-	0.695

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Scaleable and Disributed Control Architecture (SSWIR ***FY 2012 Base Plans:*** Scaleable and Disributed Control Architecture (SSWIR)					
Title: Distributed FC TEWA Capabilities (Tactical FC) ***Articles:*** ***Description:*** Distributed FC TEWA Capabilities (Tactical FC) ***FY 2010 Accomplishments:*** Distributed FC TEWA Capabilities (Tactical FC) ***FY 2012 Base Plans:*** Distributed FC TEWA Capabilities (Tactical FC)	0.059 0	-	0.193	-	0.193
Title: C2 & Warn Improvements - Use of Tactical Radio and Integration of Warn into C2 Workstation ***Description:*** C2 & Warn Improvements - Use of Tactical Radio and Integration of Warn into C2 Workstation ***FY 2012 Base Plans:*** C2 & Warn Improvements - Use of Tactical Radio and Integration of Warn into C2 Workstation	-	-	12.478	-	12.478
Title: Mounted Up-Gun LPWS onto HEMTT ***Description:*** Mounted Up-Gun LPWS onto HEMTT ***FY 2012 Base Plans:*** Mounted Up-Gun LPWS onto HEMTT	-	-	23.454	-	23.454
Title: UAS Universal-Station Integration ***Description:*** UAS Universal-Station Integration ***FY 2012 Base Plans:*** UAS Universal-Station Integration	-	-	4.691	-	4.691
Title: Dynamic Clearance of Fires ***Description:*** Dynamic Clearance of Fires	-	-	4.222	-	4.222

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2012 Base Plans: Dynamic Clearance of Fires					
Accomplishments/Planned Programs Subtotals	13.559	6.720	57.739	-	57.739

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• BZ0526: *COUNTER-ROCKETS, ARTILLERY& MORTAR (C-RAM)*	274.400	293.488	15.774		15.774		67.363	93.348	87.958	Continuing	Continuing

D. Acquisition Strategy

The C-RAM/IFPC program is following an evolutionary acquisition strategy for rapid fielding of mature technology to the user. The approach will deliver capabilities in increments, recognizing up front the need for future improvements. The objective of the strategy is to balance needs and available capability with resources and put a robust capability to engage rockets, artillery, and mortars into the hands of the user quickly. Success depends on continuous user feedback, consistent definition of capability needs, maturation of technology, and allocation of required resources. The Program Director will collaborate and coordinate with the user, Combat Developer, tester, logistician, PEO C3T, and HQDA. The program will follow the incremental development process, where each increment is a militarily useful and supportable operational capability. The CPD for Increment 1 (Warn capability for BCTs) was approved in August 2010, and supports establishment of IFPC as a Program of Record (POR) and the Milestone C decision following completion of an operational assessment. A Capability Development Document (CDD) will be developed for IFPC Increment 2 (enhanced Interceptor and improvements to other IFPC functions as required), based on the results of the Analysis of Alternatives (AoA) and subsequent Milestone A decision.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	PROJECT 149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	Various:Variuos	2.873	1.346		1.386		-		1.386	Continuing	Continuing	Continuing
		Subtotal	2.873	1.346		1.386		-		1.386			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Northrop Grumman	Various	Carson, CA:Carson, CA	16.141	-		28.632		-		28.632	Continuing	Continuing	Continuing
Raytheon	Various	TBD:TBD	-	-		24.330		-		24.330	Continuing	Continuing	0.000
		Subtotal	16.141	-		52.962		-		52.962			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OGA	Various	TBD:TBD	-	5.374		3.391		-		3.391	Continuing	Continuing	Continuing
		Subtotal	-	5.374		3.391		-		3.391			

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	19.014	6.720		57.739		-		57.739			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	**PROJECT** 149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT*

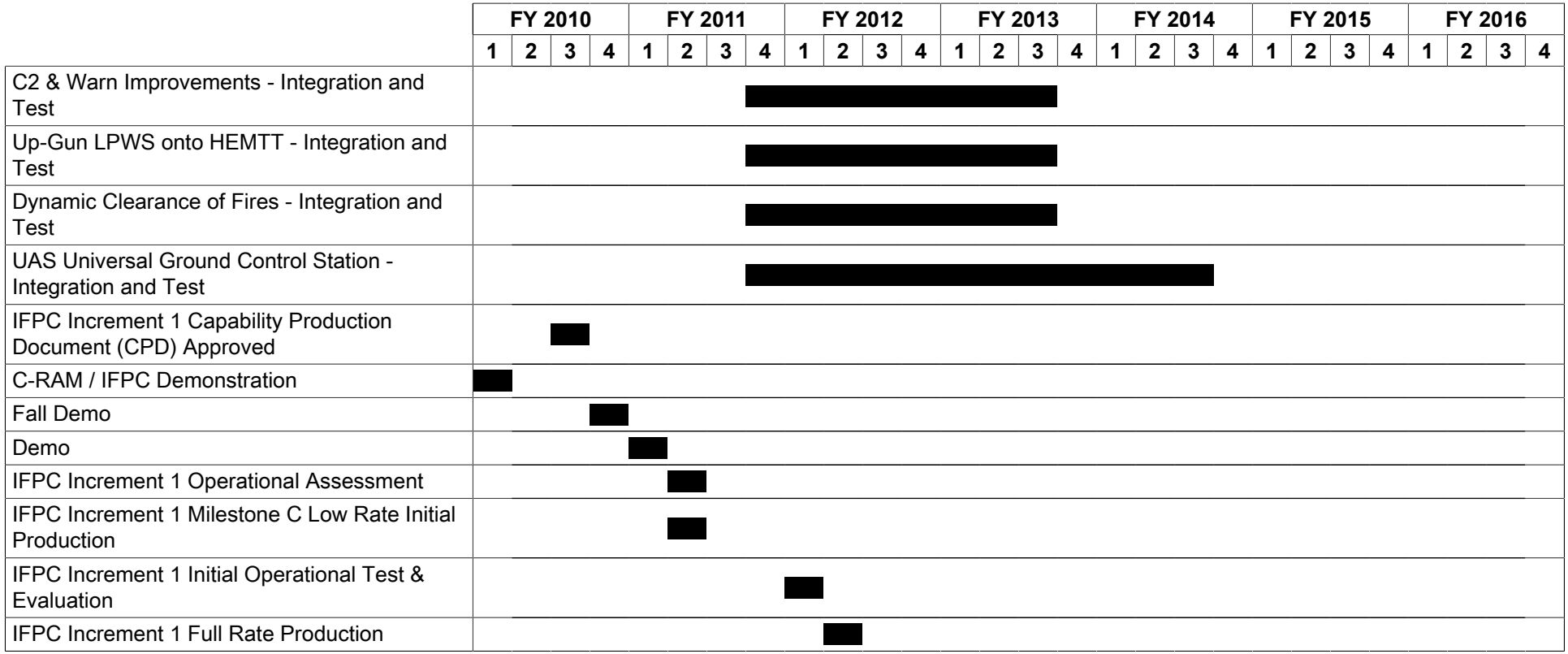

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	**PROJECT** 149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
C2 & Warn Improvements - Integration and Test	4	2011	3	2013
Up-Gun LPWS onto HEMTT - Integration and Test	4	2011	3	2013
Dynamic Clearance of Fires - Integration and Test	4	2011	3	2013
UAS Universal Ground Control Station - Integration and Test	4	2011	3	2014
IFPC Increment 1 Capability Production Document (CPD) Approved	3	2010	3	2010
C-RAM / IFPC Demonstration	1	2010	1	2010
Fall Demo	4	2010	4	2010
Demo	1	2011	1	2011
IFPC Increment 1 Operational Assessment	2	2011	2	2011
IFPC Increment 1 Milestone C Low Rate Initial Production	2	2011	2	2011
IFPC Increment 1 Initial Operational Test & Evaluation	1	2012	1	2012
IFPC Increment 1 Full Rate Production	2	2012	2	2012

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	32.126	30.291	28.305	-	28.305	28.742	26.839	28.481	26.782	Continuing	Continuing
361: *INTELLIGENCE SIMULATION SYSTEMS (MIP)*	9.024	8.265	8.327	-	8.327	8.155	7.550	7.122	8.062	Continuing	Continuing
362: *Jnt Land Component Constructive Trng Capability*	23.102	22.026	19.978	-	19.978	20.587	19.289	21.359	18.720	Continuing	Continuing

Note

FY12 funds of $1.065 million realigned to higher priority requirements.

A. Mission Description and Budget Item Justification

This program element funds the development of constructive and wargame simulations used to realistically train commanders and their battle staffs on today's complex battlefield conditions. Project 361 funds the development of the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) that provides Warfighting Commanders at all echelons the ability to train with Intelligence, Surveillance, and Reconnaissance (ISR) products based on realistic ISR assets, people (including the maneuver commander, G-2, G-3, collection manager, analyst/operator) and processes. IEWTPT provides embedded training capability for Future Army ISR systems. IEWTPT will interface/stimulate ISR systems including Tactical Unmanned Aerial Vehicle (TUAV), Joint Surveillance Target Attack Radar System-Common Ground Station (JSTARS-CGS), Tactical Exploitation System/Distributed Tactical Exploitation System (TES/DTES), Guardrail, Counter Intelligence/Human Intelligence Management Systems (CHIMS), Prophet and Distributed Common Ground Station-Army (DCGS-A). IEWTPT is the only Army Simulation System supporting ISR training from the Warfighter to the Military ISR Analyst/System Operator. Project 362, Joint Land Component Constructive Training Capability (JLCCTC), develops the Army's premier wargame simulation for training leaders and Battle Staffs at Brigade, Division, Corps, and echelons above Corps. JLCCTC will provide functionality not currently available (digital, stability, support and information operations), link to unit organizational Command, Control, Communications, Computers and Integration (C4I) equipment, improve exercise generation and after-action reporting. WARSIM will interoperate with One Semi Automated Forces (OneSAF) and other simulations as an integral part of an Army simulation toolkit, so that a warfighter training exercise can represent in simulation all Army echelons and can also be represented in a Joint environment. JLCCTC pulls together current constructive simulation systems and future constructive simulations and uses a comprehensive strategy to ensure interoperability among all of those systems. This strategy will allow JLCCTC to meet current and future user needs. JLCCTC leverages the best pieces of current systems to meet current training needs and evolves to meet the training needs of the future.

FY12 funding continues product improvements with annual releases of the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) and continues development of Joint Land Component Constructive Training Capability (JLCCTC).

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	33.039	30.291	29.370	-	29.370
Current President's Budget	32.126	30.291	28.305	-	28.305
Total Adjustments	-0.913	-	-1.065	-	-1.065
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-0.224	-			
• SBIR/STTR Transfer	-0.689	-			
• Adjustments to Budget Years	-	-	-1.065	-	-1.065

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*	PROJECT 361: *INTELLIGENCE SIMULATION SYSTEMS (MIP)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
361: *INTELLIGENCE SIMULATION SYSTEMS (MIP)*	9.024	8.265	8.327	-	8.327	8.155	7.550	7.122	8.062	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Intelligence & Electronic Warfare Tactical Proficiency Trainer (IEWTPT) provides Intelligence Military Occupational specialty (MOS) training allowing warfighting commanders at all echelons the ability to train the Intelligence Warfighting Function (IWF) based on accurately portraying the Full Spectrum Operations (FSO) environment. IEWTPT is a Non-System Training Device (NTSD) that supports intelligence warfighters by stimulating Military Intelligence (MI) equipment enabling system operators and analysts to synchronize their Intelligence, Surveillance, and Reconnaissance (ISR) assets to provide the commander with required, executable, intelligence information. IEWTPT is composed of four components: Constructive Simulation, Technical Control Cell (TCC), Target Signature Arrays (TSA), and the Human Intelligence (HUMINT) Control Cell (HCC). The IEWTPT TCC provides the enhancements to a constructive simulation to stimulate go-to-war ISR systems where system operators/analysts are able to exploit exercise intelligence data during training, just as they would in a "real world" operation. The system also provides static and dynamic training events (interactive environment for individual, collective, and mission rehearsals/exercises) in an integrated, playback, and stand alone mode. It generates an After Action Review (AAR) for operator performance, crew performance, and battlestaff actions and uses unclassified through classified data from the simulation/scenarios up to the Top Secret Sensitive Compartmented Information (TS/SCI) level. In addition, the HCC provides Human Intelligence Collectors (Military Occupational Specialty (MOS) 35M) the ability to maintain and train tactical questioning skills/techniques in a virtual environment using computer-based, virtual humans (avatars) in a culturally appropriate scenario.

IEWTPT provides a realistic target environment for Multi-Intelligence disciplines (Signals Intelligence (SIGNINT), Imagery Intelligence (IMINT), HUMINT, Counterintelligence (CI), Measurement and Signature Intelligence (MASINT), Geospatial Intelligence (GEOINT) and Open Source Intelligence (OSINT)) and must stimulate multiple systems TSAs such as: PROPHET, Distributed Common Ground Station-Army (DCGS-A), Joint Surveillance Target Attack Radar System-Common Ground Station (JSTARS-CGS), Tactical Unmanned Aerial Vehicle (TUAV), Tactical Exploitation System/Distributed Tactical Exploitation System (TES/DTES).

FY 2012 funding will allow engineering development and improvements with annual version releases in the 4th Quarter of each year. Provides improvements in the HUMINT capabilities and scenario development and SIGINT system integration with the TSAs and development that coincides with tactical fielded Intelligence, Surveillance, and Reconnaissance systems.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: IEWTPT development, integration and support.	8.111	7.335	7.397
Articles:	0	0	
Description: Continue IEWTPT development, integration and support to the user community.			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*	PROJECT 361: *INTELLIGENCE SIMULATION SYSTEMS (MIP)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: FY10 funding supported SIGINT TSA development and interoperability; developed HUMINT scenarios to support intelligence collection training and tactical questioning; developed and improved constructive simulation interfaces. ***FY 2011 Plans:*** FY 11 funding develops Counter Intelligence capabilities and Pattern of Life model to capture persons of interest (POI) lifestyle patterns that may be collected and analyzed by Intelligence personnel; supports TSA development. ***FY 2012 Plans:*** FY12 funding supports Lifestyle Pattern of Life modeling; Target Signature Array (TSA) development; evolves HUMINT, and supports Counter Intelligence capabilities.			
Title: Government Program Management for the Intelligence Electonic Warfare Tactical Proficiency Trainer (IEWTPT). ***Articles:*** ***Description:*** Government Program Management for the IEWTPT program. ***FY 2010 Accomplishments:*** FY10 funding for the IEWTPT Program Management Office provided program oversight and lifecycle management planning, Combat Developer Support, Intelligence, Surveillance, Reconnaissance (ISR) interoperability/integration as part of Target Signature Array development and design to determine the best technical approach, task analysis, documentation, solicitation, and engineering development. Supported Information Assurance compliance. ***FY 2011 Plans:*** FY11 funding for the IEWTPT Program Management Office provides program oversight and lifecycle management planning, Combat Developer Support, Intelligence, Surveillance, Reconnaissance (ISR) interoperability/integration as part of Target Signature Array development and design to determine the best technical approach, task analysis and engineering development. Evolve and refine Signal Intelligence and Communications Intelligence capabilities. Implement recurring Information Assurance directives. ***FY 2012 Plans:*** FY12 funding for the IEWTPT Program Management Office provides program oversight and lifecycle management planning, Combat Developer Support, Intelligence, Surveillance, Reconnaissance (ISR) interoperability/integration as part of Target Signature Array development and design to determine the best technical approach. Conduct task analysis and engineering	0.913 0	0.930 0	0.930

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*	PROJECT 361: *INTELLIGENCE SIMULATION SYSTEMS (MIP)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
development to integrate the HCC into the TCC. Implement Information Assurance directives, develop and evolve HUMINT scenario and evolve foreign language integration. Support development of constructive simulation integration.			
Accomplishments/Planned Programs Subtotals	9.024	8.265	8.327

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPA3: *Appropriation NA0102; Training Devices, Nonsystem, Intelligence*	9.921	7.590	3.649		3.649		4.452	6.910	7.134	Continuing	Continuing

D. Acquisition Strategy

Sole Source (General Dyanmics C4 Systems).

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*	PROJECT 361: *INTELLIGENCE SIMULATION SYSTEMS (MIP)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	Various	PEO STRI:Orlando, FL	2.832	0.930		0.930		-		0.930	Continuing	Continuing	Continuing
		Subtotal	2.832	0.930		0.930		-		0.930			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Eng & Manufacturing Dev.	SS/CPFF	General Dynamics C4 Systems:Orlando, FL	29.436	5.845		5.907		-		5.907	Continuing	Continuing	Continuing
HCC Technology	SS/CPFF	General Dynamics C4 Systems:Orlando, FL	0.952	1.100		1.100		-		1.100	Continuing	Continuing	Continuing
		Subtotal	30.388	6.945		7.007		-		7.007			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Technical Support	SS/CPFF	General Dynamics C4 Systems:Orlando, FL	2.371	0.390		0.390		-		0.390	Continuing	Continuing	Continuing
		Subtotal	2.371	0.390		0.390		-		0.390			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test Event Support	SS/FP	General Dynamics C4 Systems:Orlando, FL	1.012	-		-		-		-	Continuing	Continuing	0.000
TEMP Support	Various	Multiple:Orlando, FL	0.319	-		-		-		-	Continuing	Continuing	0.000
Test Engineering Support	Various	Multiple:Orlando, FL	1.313	-		-		-		-	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*	PROJECT 361: *INTELLIGENCE SIMULATION SYSTEMS (MIP)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	2.644	-		-		-		-			0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	38.235	8.265		8.327		-		8.327			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*	**PROJECT** 361: *INTELLIGENCE SIMULATION SYSTEMS (MIP)*

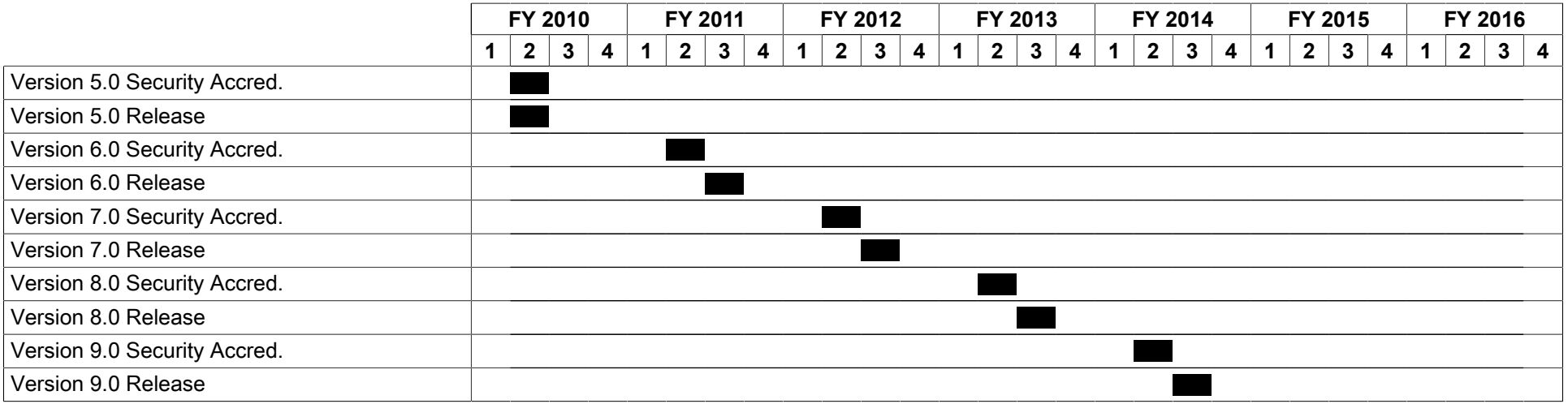

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*	**PROJECT** 361: *INTELLIGENCE SIMULATION SYSTEMS (MIP)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Version 5.0 Security Accred.	2	2010	2	2010
Version 5.0 Release	2	2010	2	2010
Version 6.0 Security Accred.	2	2011	2	2011
Version 6.0 Release	3	2011	3	2011
Version 7.0 Security Accred.	2	2012	2	2012
Version 7.0 Release	3	2012	3	2012
Version 8.0 Security Accred.	2	2013	2	2013
Version 8.0 Release	3	2013	3	2013
Version 9.0 Security Accred.	2	2014	2	2014
Version 9.0 Release	3	2014	3	2014

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*	PROJECT 362: *Jnt Land Component Constructive Trng Capability*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
362: *Jnt Land Component Constructive Trng Capability*	23.102	22.026	19.978	-	19.978	20.587	19.289	21.359	18.720	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This Project funds the development of the Joint Land Component Constructive Training Capability (JLCCTC), the Army's premier wargaming simulations for training leaders and Battle Staffs from Battalion through echelons above Corps. JLCCTC pulls together current constructive simulation systems and future constructive simulations and uses a comprehensive strategy to ensure interoperability among all of those systems. JLCCTC will provide functionality not currently available (digital operations, stability and support operations and information operations), link to organic Battle Command equipment, and improve exercise generation and after-action reporting.

FY 2012 funding supports the development, test and integration, validation, and verification of Multi-Resolution Federation-Warfighter's Simulation (MRF-W).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Engineering and Manufacturing Development (EMD) phase contract activity for JLCCTC Software Models.	1.943	1.872	1.626
Articles:	0	0	
Description: Continue EMD phase contract activities for JLCCTC Software Models.			
FY 2010 Accomplishments: Verify and validate JLCCTC software models.			
FY 2011 Plans: Verify and validate JLCCTC software models.			
FY 2012 Plans: Verify and validate JLCCTC software models.			
Title: Engineering and Manufacturing Development (EMD) phase contract for the Integration of JLCCTC.	13.543	12.724	11.942
Articles:	0	0	
Description: Continue EMD phase contract activities for the Integration of JLCCTC.			
FY 2010 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*	PROJECT 362: *Jnt Land Component Constructive Trng Capability*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue integration of JLCCTC components for interoperability. ***FY 2011 Plans:*** Continue integration of JLCCTC components for interoperability. ***FY 2012 Plans:*** Continue integration of JLCCTC components for interoperability.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for User Interface Enhancements. ***Articles:*** ***Description:*** Continue EMD phase contract activities for User Interface Enhancements. ***FY 2010 Accomplishments:*** Develop and integrate user interface enhancements for Army training applications. ***FY 2011 Plans:*** Develop and integrate user interface enhancements for Army training applications. ***FY 2012 Plans:*** Develop and integrate user interface enhancements for Army training applications.	4.753 0	4.650 0	4.104
Title: Government System Test and Evaluation. ***Articles:*** ***Description:*** Government System Test and Evaluation for the Joint Land Component Constructive Training Capability (JLCCTC). ***FY 2010 Accomplishments:*** Evaluate system performance and conduct system test events. ***FY 2011 Plans:*** Evaluate system performance and conduct system test events. ***FY 2012 Plans:*** Evaluate system performance and conduct system test events.	2.863 0	2.780 0	2.306
Accomplishments/Planned Programs Subtotals	23.102	22.026	19.978

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*	PROJECT 362: *Jnt Land Component Constructive Trng Capability*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• NA0103: *NSTD Command & Control*	21.504	21.453	17.696		17.696		26.874	12.791	15.239	Continuing	Continuing

D. Acquisition Strategy

Competitive development based on performance specifications.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*	PROJECT 362: *Jnt Land Component Constructive Trng Capability*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PEO STRI:Orlando, FL	28.166	4.516		3.616		-		3.616	Continuing	Continuing	Continuing
Cost Analysis Support	Various	Northrup Grumman-TASC:McLean, VA	0.414	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	28.580	4.516		3.616		-		3.616			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integration of JLCCTC	Various	Various:Various	39.304	4.629		5.410		-		5.410	Continuing	Continuing	Continuing
Development of logistics model	Various	Tapestry:San Diego, CA	15.492	1.599		1.599		-		1.599	Continuing	Continuing	Continuing
WARSIM Development of Army Training System	Various	Lockheed Martin Info Systems:Orlando, FL	94.233	10.136		8.283		-		8.283	Continuing	Continuing	Continuing
		Subtotal	149.029	16.364		15.292		-		15.292			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Tech Spt	Various	Various:Various	6.929	0.596		0.570		-		0.570	Continuing	Continuing	Continuing
		Subtotal	6.929	0.596		0.570		-		0.570			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Verification, Validation and Accreditation	Various	Various:Various	9.934	0.458		0.408		-		0.408	Continuing	Continuing	Continuing
System Evaluation and Test	Various	Various:Various	12.841	0.092		0.092		-		0.092	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*	PROJECT 362: *Jnt Land Component Constructive Trng Capability*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	22.775	0.550		0.500		-		0.500			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	207.313	22.026		19.978		-		19.978			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*	PROJECT 362: *Jnt Land Component Constructive Trng Capability*

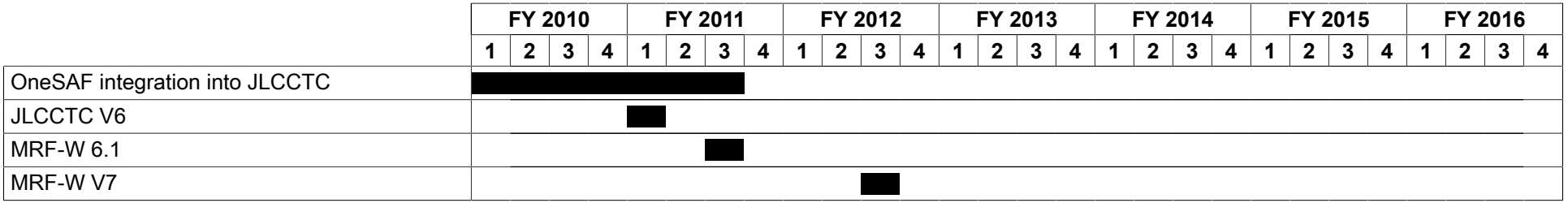

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*	**PROJECT** 362: *Jnt Land Component Constructive Trng Capability*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
OneSAF integration into JLCCTC	1	2010	3	2011
JLCCTC V6	1	2011	1	2011
MRF-W 6.1	3	2011	3	2011
MRF-W V7	3	2012	3	2012