

UNCLASSIFIED

**Department of Defense
Fiscal Year (FY) 2013 President's Budget Submission**

February 2012



Army

Justification Book

Research, Development, Test & Evaluation, Army

RDT&E - Volume II, Budget Activity 5A

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 Department of the Army
 FY 2013 RDT&E Program
 President's Budget 2013

Exhibit R-1

Summary

06-Jan-2012

Summary Recap of Budget Activities		Thousands of Dollars				
		FY2011	FY2012	FY2013	FY2013 OCO	FY2013 Total
Basic research		388,660	456,200	444,071	0	444,071
Applied Research		825,021	946,836	874,730	0	874,730
Advanced technology development		804,783	1,132,838	890,722	0	890,722
Advanced Component Development and Prototypes		930,583	544,328	610,121	19,860	629,981
System Development and Demonstration		3,968,785	3,238,656	3,286,629	0	3,286,629
Management support		1,400,358	1,097,294	1,153,980	0	1,153,980
Operational system development		1,437,782	1,339,540	1,664,534	0	1,664,534
Total	RDT&E, Army	9,755,972	8,755,692	8,924,787	19,860	8,944,647

UNCLASSIFIED
 Department of the Army
 FY 2013 RDT&E Program
 President's Budget 2013

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

06-Jan-2012

Line No	Program Element Number	Act	Item	Thousands of Dollars				
				FY2011	FY2012	FY2013	FY2013 OCO	FY2013 Total
Basic research								
1	0601101A	01	IN-HOUSE LABORATORY INDEPENDENT RESEARCH	21,095	21,031	20,860		20,860
2	0601102A	01	DEFENSE RESEARCH SCIENCES	190,019	213,604	219,180		219,180
3	0601103A	01	UNIVERSITY RESEARCH INITIATIVES	84,445	80,850	80,986		80,986
4	0601104A	01	UNIVERSITY AND INDUSTRY RESEARCH CENTERS	93,101	140,715	123,045		123,045
Total: Basic research				388,660	456,200	444,071	0	444,071
Applied Research								
5	0602105A	02	MATERIALS TECHNOLOGY	28,730	50,679	29,041		29,041
6	0602120A	02	SENSORS AND ELECTRONIC SURVIVABILITY	46,491	43,453	45,260		45,260
7	0602122A	02	TRACTOR HIP	14,126	14,207	22,439		22,439
8	0602211A	02	AVIATION TECHNOLOGY	40,869	44,539	51,607		51,607
9	0602270A	02	ELECTRONIC WARFARE TECHNOLOGY	16,939	15,765	15,068		15,068
10	0602303A	02	MISSILE TECHNOLOGY	48,092	67,079	49,383		49,383
11	0602307A	02	ADVANCED WEAPONS TECHNOLOGY	17,542	20,002	25,999		25,999
12	0602308A	02	ADVANCED CONCEPTS AND SIMULATION	19,907	20,900	23,507		23,507
13	0602601A	02	COMBAT VEHICLE AND AUTOMOTIVE TECHNOLOGY	61,893	64,205	69,062		69,062
14	0602618A	02	BALLISTICS TECHNOLOGY	60,595	59,121	60,823		60,823
15	0602622A	02	CHEMICAL, SMOKE AND EQUIPMENT DEFEATING TECHNOLOGY	10,555	4,869	4,465		4,465
16	0602623A	02	JOINT SERVICE SMALL ARMS PROGRAM	7,630	8,231	7,169		7,169
17	0602624A	02	WEAPONS AND MUNITIONS TECHNOLOGY	41,368	54,727	35,218		35,218
18	0602705A	02	ELECTRONICS AND ELECTRONIC DEVICES	63,186	62,862	60,300		60,300
19	0602709A	02	NIGHT VISION TECHNOLOGY	39,131	55,116	53,244		53,244
20	0602712A	02	COUNTERMINE SYSTEMS	18,507	32,728	18,850		18,850
21	0602716A	02	HUMAN FACTORS ENGINEERING TECHNOLOGY	20,583	21,767	19,872		19,872
22	0602720A	02	ENVIRONMENTAL QUALITY TECHNOLOGY	21,704	20,804	20,095		20,095
23	0602782A	02	COMMAND, CONTROL, COMMUNICATIONS TECHNOLOGY	24,914	26,075	28,852		28,852
24	0602783A	02	COMPUTER AND SOFTWARE TECHNOLOGY	6,599	8,577	9,830		9,830
25	0602784A	02	MILITARY ENGINEERING TECHNOLOGY	73,346	80,190	70,693		70,693

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26	0602785A	02	MANPOWER/PERSONNEL/TRAINING TECHNOLOGY	18,982	18,917	17,781		17,781
27	0602786A	02	WARFIGHTER TECHNOLOGY	26,972	46,261	28,281		28,281
28	0602787A	02	MEDICAL TECHNOLOGY	96,360	105,762	107,891		107,891
Total: Applied Research				825,021	946,836	874,730	0	874,730
Advanced technology development								
29	0603001A	03	WARFIGHTER ADVANCED TECHNOLOGY	36,122	52,896	39,359		39,359
30	0603002A	03	MEDICAL ADVANCED TECHNOLOGY	114,036	102,810	69,580		69,580
31	0603003A	03	AVIATION ADVANCED TECHNOLOGY	55,492	62,095	64,215		64,215
32	0603004A	03	WEAPONS AND MUNITIONS ADVANCED TECHNOLOGY	65,495	76,955	67,613		67,613
33	0603005A	03	COMBAT VEHICLE AND AUTOMOTIVE ADVANCED TECHNOLOGY	125,677	145,914	104,359		104,359
34	0603006A	03	COMMAND, CONTROL, COMMUNICATIONS ADVANCED TECHNOLOGY	7,823	5,304	4,157		4,157
35	0603007A	03	MANPOWER, PERSONNEL AND TRAINING ADVANCED TECHNOLOGY	7,694	10,282	9,856		9,856
36	0603008A	03	ELECTRONIC WARFARE ADVANCED TECHNOLOGY	48,698	69,852	50,661		50,661
37	0603009A	03	TRACTOR HIKE	7,761	8,142	9,126		9,126
38	0603015A	03	NEXT GENERATION TRAINING & SIMULATION SYSTEMS	14,788	17,907	17,257		17,257
39	0603020A	03	TRACTOR ROSE	11,872	12,577	9,925		9,925
40	0603105A	03	MILITARY HIV RESEARCH	25,738	22,760	6,984		6,984
41	0603125A	03	COMBATING TERRORISM - TECHNOLOGY DEVELOPMENT	9,424	22,172	9,716		9,716
42	0603130A	03	TRACTOR NAIL		4,271	3,487		3,487
43	0603131A	03	TRACTOR EGGS		2,257	2,323		2,323
44	0603270A	03	ELECTRONIC WARFARE TECHNOLOGY	18,973	23,640	21,683		21,683
45	0603313A	03	MISSILE AND ROCKET ADVANCED TECHNOLOGY	76,272	90,458	71,111		71,111
46	0603322A	03	TRACTOR CAGE	9,661	10,299	10,902		10,902
47	0603461A	03	HIGH PERFORMANCE COMPUTING MODERNIZATION PROGRAM		227,790	180,582		180,582
48	0603606A	03	LANDMINE WARFARE AND BARRIER ADVANCED TECHNOLOGY	26,089	31,491	27,204		27,204
49	0603607A	03	JOINT SERVICE SMALL ARMS PROGRAM	8,236	7,674	6,095		6,095
50	0603710A	03	NIGHT VISION ADVANCED TECHNOLOGY	71,723	42,348	37,217		37,217
51	0603728A	03	ENVIRONMENTAL QUALITY TECHNOLOGY DEMONSTRATIONS	15,417	15,934	13,626		13,626
52	0603734A	03	MILITARY ENGINEERING ADVANCED TECHNOLOGY	23,617	36,458	28,458		28,458

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53	0603772A	03	ADVANCED TACTICAL COMPUTER SCIENCE AND SENSOR TECHNOLOGY	24,175	30,552	25,226		25,226
Total: Advanced technology development				804,783	1,132,838	890,722	0	890,722
Advanced Component Development and Prototypes								
54	0603305A	04	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION	11,156	24,386	14,505		14,505
55	0603308A	04	ARMY SPACE SYSTEMS INTEGRATION	29,845	9,763	9,876		9,876
56	0603619A	04	LANDMINE WARFARE AND BARRIER - ADV DEV	14,686	19,596	5,054		5,054
57	0603627A	04	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-ADV DEV	2,337	4,572	2,725		2,725
58	0603639A	04	TANK AND MEDIUM CALIBER AMMUNITION	35,849	40,314	30,560		30,560
59	0603653A	04	ADVANCED TANK ARMAMENT SYSTEM (ATAS)	200,312	65,417	14,347		14,347
60	0603747A	04	SOLDIER SUPPORT AND SURVIVABILITY	26,847	13,903	10,073	19,860	29,933
61	0603766A	04	TACTICAL ELECTRONIC SURVEILLANCE SYSTEM - ADV DEV	19,610	5,856	8,660		8,660
62	0603774A	04	NIGHT VISION SYSTEMS ADVANCED DEVELOPMENT	4,975		10,715		10,715
63	0603779A	04	ENVIRONMENTAL QUALITY TECHNOLOGY - DEM/VAL	3,622	5,023	4,631		4,631
64	0603782A	04	WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	200,732	185,819	278,018		278,018
65	0603790A	04	NATO RESEARCH AND DEVELOPMENT	4,879	4,839	4,961		4,961
66	0603801A	04	AVIATION - ADV DEV	8,058	7,218	8,602		8,602
67	0603804A	04	LOGISTICS AND ENGINEER EQUIPMENT - ADV DEV	62,999	12,706	14,605		14,605
68	0603805A	04	COMBAT SERVICE SUPPORT CONTROL SYSTEM EVALUATION AND ANALYSIS	20,801	5,250	5,054		5,054
69	0603807A	04	MEDICAL SYSTEMS - ADV DEV	27,247	35,543	24,384		24,384
70	0603827A	04	SOLDIER SYSTEMS - ADVANCED DEVELOPMENT	51,415	18,030	32,050		32,050
71	0603850A	04	INTEGRATED BROADCAST SERVICE	939	1,494	96		96
72	0604115A	04	TECHNOLOGY MATURATION INITIATIVES	3,000	10,165	24,868		24,868
73	0604131A	04	TRACTOR JUTE		15,584	59		59
74	0604284A	04	JOINT COOPERATIVE TARGET IDENTIFICATION - GROUND (JCTI-G) / TECHNOLOG		15,287			
75	0604319A	04	INDIRECT FIRE PROTECTION CAPABILITY INCREMENT 2-INTERCEPT (IFPC2)			76,039		76,039
76	0604775A	04	DEFENSE RAPID INNOVATION PROGRAM	101,265				
77	0604785A	04	INTEGRATED BASE DEFENSE (BUDGET ACTIVITY 4)			4,043		4,043
78	0305205A	04	ENDURANCE UAVS	100,009	43,563	26,196		26,196

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 President's Budget 2013

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Total: Advanced Component Development and Prototypes				930,583	544,328	610,121	19,860	629,981
System Development and Demonstration								
79	0604201A	05	AIRCRAFT AVIONICS	70,926	119,573	78,538		78,538
80	0604220A	05	ARMED, DEPLOYABLE HELOS	69,922	82,363	70,277		70,277
81	0604270A	05	ELECTRONIC WARFARE DEVELOPMENT	196,428	34,233	181,347		181,347
82	0604280A	05	JOINT TACTICAL RADIO	755				
83	0604290A	05	MID-TIER NETWORKING VEHICULAR RADION (MNVR)			12,636		12,636
84	0604321A	05	ALL SOURCE ANALYSIS SYSTEM	24,322	7,405	5,694		5,694
85	0604328A	05	TRACTOR CAGE	17,914	26,552	32,095		32,095
86	0604601A	05	INFANTRY SUPPORT WEAPONS	73,008	83,395	96,478		96,478
87	0604604A	05	MEDIUM TACTICAL VEHICLES	3,578	3,957	3,006		3,006
88	0604609A	05	SMOKE, OBSCURANT AND TARGET DEFEATING SYS - ENG DEV	5,146				
89	0604611A	05	JAVELIN		9,930	5,040		5,040
90	0604622A	05	FAMILY OF HEAVY TACTICAL VEHICLES	2,829	55,426	3,077		3,077
91	0604633A	05	AIR TRAFFIC CONTROL	9,559	22,900	9,769		9,769
92	0604641A	05	TACTICAL UNMANNED GROUND VEHICLE (TUGV)			13,141		13,141
93	0604642A	05	LIGHT TACTICAL WHEELED VEHICLES	1,918	19,981	20,217		20,217
94	0604661A	05	FCS SYSTEMS OF SYSTEMS ENGR & PROGRAM MGMT	471,559	298,589			
95	0604662A	05	FCS RECONNAISSANCE (UAV) PLATFORMS	18,792				
96	0604663A	05	FCS UNMANNED GROUND VEHICLES	200,000	35,966			
97	0604664A	05	FCS UNATTENDED GROUND SENSORS	1,451				
98	0604665A	05	FCS SUSTAINMENT & TRAINING R&D	598,673				
99	0604710A	05	NIGHT VISION SYSTEMS - ENG DEV	44,513	59,195	32,621		32,621
100	0604713A	05	COMBAT FEEDING, CLOTHING, AND EQUIPMENT	2,043	2,073	2,132		2,132
101	0604715A	05	NON-SYSTEM TRAINING DEVICES - ENG DEV	26,848	29,981	44,787		44,787
102	0604716A	05	TERRAIN INFORMATION - ENG DEV		1,594	1,008		1,008
103	0604741A	05	AIR DEFENSE COMMAND, CONTROL AND INTELLIGENCE - ENG DEV	139,662	82,932	73,333		73,333
104	0604742A	05	CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	29,287	28,274	28,937		28,937
105	0604746A	05	AUTOMATIC TEST EQUIPMENT DEVELOPMENT	13,553	14,361	10,815		10,815

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106	0604760A	05	DISTRIBUTIVE INTERACTIVE SIMULATIONS (DIS) - ENG DEV	15,031	15,787	13,926		13,926
107	0604780A	05	COMBINED ARMS TACTICAL TRAINER (CATT) CORE	26,699	22,205	17,797		17,797
108	0604798A	05	BRIGADE ANALYSIS, INTEGRATION AND EVALUATION			214,270		214,270
109	0604802A	05	WEAPONS AND MUNITIONS - ENG DEV	25,099	13,815	14,581		14,581
110	0604804A	05	LOGISTICS AND ENGINEER EQUIPMENT - ENG DEV	39,588	173,146	43,706		43,706
111	0604805A	05	COMMAND, CONTROL, COMMUNICATIONS SYSTEMS - ENG DEV	73,042	81,733	20,776		20,776
112	0604807A	05	MEDICAL MATERIEL/MEDICAL BIOLOGICAL DEFENSE EQUIPMENT - ENG DEV	33,262	27,132	43,395		43,395
113	0604808A	05	LANDMINE WARFARE/BARRIER - ENG DEV	37,707	76,248	104,983		104,983
114	0604814A	05	ARTILLERY MUNITIONS - EMD	25,467	37,592	4,346		4,346
115	0604817A	05	COMBAT IDENTIFICATION	2,893				
116	0604818A	05	ARMY TACTICAL COMMAND & CONTROL HARDWARE & SOFTWARE	57,264	93,846	77,223		77,223
117	0604820A	05	RADAR DEVELOPMENT		2,885	3,486		3,486
118	0604822A	05	GENERAL FUND ENTERPRISE BUSINESS SYSTEM (GFEBS)	13,094	793	9,963		9,963
119	0604823A	05	FIREFINDER	22,455	10,348	20,517		20,517
120	0604827A	05	SOLDIER SYSTEMS - WARRIOR DEM/VAL	20,122	61,350	51,851		51,851
121	0604854A	05	ARTILLERY SYSTEMS - EMD	99,937	120,032	167,797		167,797
122	0604869A	05	PATRIOT/MEADS COMBINED AGGREGATE PROGRAM (CAP)	450,584	389,630	400,861		400,861
123	0604870A	05	NUCLEAR ARMS CONTROL MONITORING SENSOR NETWORK	7,017	7,391	7,922		7,922
124	0605013A	05	INFORMATION TECHNOLOGY DEVELOPMENT	50,054	32,065	51,463		51,463
125	0605018A	05	INTEGRATED PERSONNEL AND PAY SYSTEM-ARMY (IPPS-A)	58,348	68,628	158,646		158,646
126	0605450A	05	JOINT AIR-TO-GROUND MISSILE (JAGM)	71,760	126,895	10,000		10,000
127	0605455A	05	SLAMRAAM	18,358	1,529			
128	0605456A	05	PAC-3/MSE MISSILE	121,475	88,909	69,029		69,029
129	0605457A	05	ARMY INTEGRATED AIR AND MISSILE DEFENSE (AIAMD)	246,691	270,180	277,374		277,374
130	0605625A	05	MANNED GROUND VEHICLE	312,269	448,679	639,874		639,874
131	0605626A	05	AERIAL COMMON SENSOR	101,171	31,435	47,426		47,426
132	0605812A	05	JOINT LIGHT TACTICAL VEHICLE (JLTV) ENGINEERING AND MANUFACTURING D			72,295		72,295
133	0303032A	05	TROJAN - RH12	3,578	3,916	4,232		4,232
134	0304270A	05	ELECTRONIC WARFARE DEVELOPMENT	13,134	13,807	13,942		13,942

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Total: System Development and Demonstration				3,968,785	3,238,656	3,286,629	0	3,286,629
Management support								
135	0604256A	06	THREAT SIMULATOR DEVELOPMENT	25,367	26,117	18,090		18,090
136	0604258A	06	TARGET SYSTEMS DEVELOPMENT	8,362	11,229	14,034		14,034
137	0604759A	06	MAJOR T&E INVESTMENT	40,671	49,359	37,394		37,394
138	0605103A	06	RAND ARROYO CENTER	19,763	20,352	21,026		21,026
139	0605301A	06	ARMY KWAJALEIN ATOLL	190,005	145,377	176,816		176,816
140	0605326A	06	CONCEPTS EXPERIMENTATION PROGRAM	17,101	28,755	27,902		27,902
141	0605502A	06	SMALL BUSINESS INNOVATIVE RESEARCH	232,092				
142	0605601A	06	ARMY TEST RANGES AND FACILITIES	399,931	311,650	369,900		369,900
143	0605602A	06	ARMY TECHNICAL TEST INSTRUMENTATION AND TARGETS	68,118	70,116	69,183		69,183
144	0605604A	06	SURVIVABILITY/LETHALITY ANALYSIS	42,320	43,414	44,753		44,753
145	0605605A	06	DOD HIGH ENERGY LASER TEST FACILITY	4,568	18			
146	0605606A	06	AIRCRAFT CERTIFICATION	4,938	5,621	5,762		5,762
147	0605702A	06	METEOROLOGICAL SUPPORT TO RDT&E ACTIVITIES	6,983	7,171	7,402		7,402
148	0605706A	06	MATERIEL SYSTEMS ANALYSIS	18,863	19,638	19,954		19,954
149	0605709A	06	EXPLOITATION OF FOREIGN ITEMS	5,285	5,436	5,535		5,535
150	0605712A	06	SUPPORT OF OPERATIONAL TESTING	68,481	68,678	67,789		67,789
151	0605716A	06	ARMY EVALUATION CENTER	60,694	63,202	62,765		62,765
152	0605718A	06	ARMY MODELING & SIM X-CMD COLLABORATION & INTEG	3,787	3,415	1,545		1,545
153	0605801A	06	PROGRAMWIDE ACTIVITIES	71,984	82,923	83,422		83,422
154	0605803A	06	TECHNICAL INFORMATION ACTIVITIES	49,579	55,286	50,820		50,820
155	0605805A	06	MUNITIONS STANDARDIZATION, EFFECTIVENESS AND SAFETY	42,474	57,054	46,763		46,763
156	0605857A	06	ENVIRONMENTAL QUALITY TECHNOLOGY MGMT SUPPORT	3,084	4,953	4,601		4,601
157	0605898A	06	MANAGEMENT HQ - R&D	15,845	17,530	18,524		18,524
158	0909999A	06	FINANCING FOR CANCELLED ACCOUNT ADJUSTMENTS	63				
Total: Management support				1,400,358	1,097,294	1,153,980	0	1,153,980

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Operational system development								
159	0603778A	07	MLRS PRODUCT IMPROVEMENT PROGRAM	19,016	66,641	143,005		143,005
160	0607665A	07	BIOMETRICS ENTERPRISE	65,781	45,511			
161	0607865A	07	PATRIOT PRODUCT IMPROVEMENT			109,978		109,978
162	0102419A	07	AEROSTAT JOINT PROJECT OFFICE	399,477	327,338	190,422		190,422
163	0203347A	07	INTELLIGENCE SUPPORT TO CYBER (ISC) MIP	2,283				
164	0203726A	07	ADV FIELD ARTILLERY TACTICAL DATA SYSTEM	23,812	29,500	32,556		32,556
165	0203735A	07	COMBAT VEHICLE IMPROVEMENT PROGRAMS	187,207	36,150	253,959		253,959
166	0203740A	07	MANEUVER CONTROL SYSTEM	24,648	42,347	68,325		68,325
167	0203744A	07	AIRCRAFT MODIFICATIONS/PRODUCT IMPROVEMENT PROGRAMS	121,084	149,469	280,247		280,247
168	0203752A	07	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM	688	822	898		898
169	0203758A	07	DIGITIZATION	6,103	8,016	35,180		35,180
170	0203759A	07	FORCE XXI BATTLE COMMAND, BRIGADE AND BELOW (FBCB2)	3,748				
171	0203801A	07	MISSILE/AIR DEFENSE PRODUCT IMPROVEMENT PROGRAM	23,415	53,015	20,738		20,738
172	0203808A	07	TRACTOR CARD	14,340	42,487	63,243		63,243
173	0208053A	07	JOINT TACTICAL GROUND SYSTEM	12,005	27,586	31,738		31,738
174	0208058A	07	JOINT HIGH SPEED VESSEL (JHSV)	3,041		35		35
175	0301359A	07	SPECIAL ARMY PROGRAM					
176	0303028A	07	SECURITY AND INTELLIGENCE ACTIVITIES		2,850	7,591		7,591
177	0303140A	07	INFORMATION SYSTEMS SECURITY PROGRAM	12,232	15,684	15,961		15,961
178	0303141A	07	GLOBAL COMBAT SUPPORT SYSTEM	123,136	160,491	120,927		120,927
179	0303142A	07	SATCOM GROUND ENVIRONMENT (SPACE)	32,525	12,085	15,756		15,756
180	0303150A	07	WWWCCS/GLOBAL COMMAND AND CONTROL SYSTEM	12,606	23,899	14,443		14,443
181	0305204A	07	TACTICAL UNMANNED AERIAL VEHICLES	38,049	26,508	31,303		31,303
182	0305208A	07	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	125,404	31,649	40,871		40,871
183	0305219A	07	MQ-1 SKY WARRIOR A UAV	119,195	121,846	74,618		74,618
184	0305232A	07	RQ-11 UAV	1,547	1,935	4,039		4,039
185	0305233A	07	RQ-7 UAV	7,555	31,896	31,158		31,158
186	0305235A	07	MQ-18 UAV		7,500	2,387		2,387
187	0307665A	07	BIOMETRICS ENABLED INTELLIGENCE	2,069	15,018	15,248		15,248

UNCLASSIFIED
 Department of the Army
 FY 2013 RDT&E Program
 President's Budget 2013

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

06-Jan-2012

Line No	Program Element Number	Act	Item	Thousands of Dollars				
				FY2011	FY2012	FY2013	FY2013 OCO	FY2013 Total
188	0708045A	07	END ITEM INDUSTRIAL PREPAREDNESS ACTIVITIES	56,816	59,297	59,908		59,908
		Total:	Operational system development	1,437,782	1,339,540	1,664,534	0	1,664,534
Total:	RDT&E, Army			9,755,972	8,755,692	8,924,787	19,860	8,944,647

UNCLASSIFIED

Army • President's Budget Submission FY 2013 • RDT&E Program

Table of Contents

Program Element Table of Contents (by Budget Activity then Line Item Number)..... ii
Program Element Table of Contents (Alphabetically by Program Element Title)..... vi
Exhibit R-2's..... 1

UNCLASSIFIED

Army • President's Budget Submission FY 2013 • RDT&E Program

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

.....

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
79	05	0604201A	AIRCRAFT AVIONICS.....	1
80	05	0604220A	Armed, Deployable Helos.....	25
81	05	0604270A	Electronic Warfare Development.....	39
82	05	0604280A	Joint Tactical Radio.....	78
83	05	0604290A	Mid-tier Networking Vehicular Radio (MNVR).....	83
84	05	0604321A	ALL SOURCE ANALYSIS SYSTEM.....	89
85	05	0604328A	TRACTOR CAGE.....	104
86	05	0604601A	Infantry Support Weapons.....	106
87	05	0604604A	MEDIUM TACTICAL VEHICLES.....	160
88	05	0604609A	Smoke, Obscurant and Target Defeating Sys - Eng Dev.....	165
89	05	0604611A	JAVELIN (AAWS-M).....	170
90	05	0604622A	Family of Heavy Tactical Vehicles.....	177
91	05	0604633A	AIR TRAFFIC CONTROL.....	199
92	05	0604641A	TACTICAL UNMANNED GROUND VEHICLE.....	211
93	05	0604642A	LIGHT TACTICAL WHEELED VEHICLES.....	218

UNCLASSIFIED

UNCLASSIFIED

Army • President's Budget Submission FY 2013 • RDT&E Program

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

.....

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
94	05	0604661A	FCS Systems of Systems Engr & Program Mgmt.....	225
95	05	0604662A	FCS Reconnaissance (UAV) Platforms.....	246
96	05	0604663A	FCS Unmanned Ground Vehicles.....	256
97	05	0604664A	FCS Unattended Ground Sensors.....	268
98	05	0604665A	FCS Sustainment & Training R&D.....	271
99	05	0604710A	Night Vision Systems - Eng Dev.....	286
100	05	0604713A	Combat Feeding, Clothing, and Equipment.....	320
101	05	0604715A	Non-System Training Devices - Eng Dev.....	333
102	05	0604716A	TERRAIN INFORMATION - ENG DEV.....	355
103	05	0604741A	Air Defense Command, Control and Intelligence - Eng Dev.....	359
104	05	0604742A	CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT.....	381
105	05	0604746A	Automatic Test Equipment Development.....	397
106	05	0604760A	Distributive Interactive Simulations (DIS) - Eng Dev.....	414
107	05	0604780A	Combined Arms Tactical Trainer (CATT) Core.....	431
108	05	0604798A	Brigade Analysis, Integration and Evaluation.....	457
109	05	0604802A	Weapons and Munitions - Eng Dev.....	479
110	05	0604804A	Logistics and Engineer Equipment - Eng Dev.....	489
111	05	0604805A	Command, Control, Communications Systems - Eng Dev.....	572

UNCLASSIFIED

UNCLASSIFIED

Army • President's Budget Submission FY 2013 • RDT&E Program

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

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
112	05	0604807A	Medical Materiel/Medical Biological Defense Equipment - Eng Dev.....	593
113	05	0604808A	Landmine Warfare/Barrier - Eng Dev.....	621
114	05	0604814A	Artillery Munitions - EMD.....	647
115	05	0604817A	Combat Identification.....	658
116	05	0604818A	Army Tactical Command & Control Hardware & Software.....	664
117	05	0604820A	RADAR DEVELOPMENT.....	707
118	05	0604822A	General Fund Enterprise Business System (GFEBs).....	717
119	05	0604823A	FIREFINDER.....	724
120	05	0604827A	Soldier Systems - Warrior Dem/Val.....	739
121	05	0604854A	Artillery Systems - EMD.....	763
122	05	0604869A	Patriot/MEADS Combined Aggregate Program (CAP).....	770
123	05	0604870A	Nuclear Arms Control Monitoring Sensor Network.....	779
124	05	0605013A	Information Technology Development.....	788
125	05	0605018A	Army Integ Military Human Resources Sys (A-IMRS).....	825
126	05	0605450A	Joint Air-to-Ground Missile (JAGM).....	835
127	05	0605455A	SLAMRAAM.....	843
128	05	0605456A	PAC-3/MSE MISSILE.....	848
129	05	0605457A	Army Integrated Air and Missile Defense (AIAMD).....	857

UNCLASSIFIED

UNCLASSIFIED

Army • President's Budget Submission FY 2013 • RDT&E Program

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

.....

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
130	05	0605625A	Manned Ground Vehicle.....	869
131	05	0605626A	Aerial Common Sensor - SDD.....	881
132	05	0605812A	Joint Light Tactical Vehicle - ED.....	890
133	05	0303032A	TROJAN - RH12 - MIP.....	899
134	05	0304270A	Electronic Warfare Development.....	906

UNCLASSIFIED

Army • President's Budget Submission FY 2013 • RDT&E Program

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

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
AIR TRAFFIC CONTROL	0604633A	91	05.....	199
AIRCRAFT AVIONICS	0604201A	79	05.....	1
ALL SOURCE ANALYSIS SYSTEM	0604321A	84	05.....	89
Aerial Common Sensor - SDD	0605626A	131	05.....	881
Air Defense Command, Control and Intelligence - Eng Dev	0604741A	103	05.....	359
Armed, Deployable Helos	0604220A	80	05.....	25
Army Integ Military Human Resources Sys (A-IMRS)	0605018A	125	05.....	825
Army Integrated Air and Missile Defense (AIAMD)	0605457A	129	05.....	857
Army Tactical Command & Control Hardware & Software	0604818A	116	05.....	664
Artillery Munitions - EMD	0604814A	114	05.....	647
Artillery Systems - EMD	0604854A	121	05.....	763
Automatic Test Equipment Development	0604746A	105	05.....	397
Brigade Analysis, Integration and Evaluation	0604798A	108	05.....	457
CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	0604742A	104	05.....	381
Combat Feeding, Clothing, and Equipment	0604713A	100	05.....	320
Combat Identification	0604817A	115	05.....	658
Combined Arms Tactical Trainer (CATT) Core	0604780A	107	05.....	431

UNCLASSIFIED

UNCLASSIFIED

Army • President's Budget Submission FY 2013 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Command, Control, Communications Systems - Eng Dev	0604805A	111	05.....	572
Distributive Interactive Simulations (DIS) - Eng Dev	0604760A	106	05.....	414
Electronic Warfare Development	0604270A	81	05.....	39
Electronic Warfare Development	0304270A	134	05.....	906
FCS Reconnaissance (UAV) Platforms	0604662A	95	05.....	246
FCS Sustainment & Training R&D	0604665A	98	05.....	271
FCS Systems of Systems Engr & Program Mgmt	0604661A	94	05.....	225
FCS Unattended Ground Sensors	0604664A	97	05.....	268
FCS Unmanned Ground Vehicles	0604663A	96	05.....	256
FIREFINDER	0604823A	119	05.....	724
Family of Heavy Tactical Vehicles	0604622A	90	05.....	177
General Fund Enterprise Business System (GFEBS)	0604822A	118	05.....	717
Infantry Support Weapons	0604601A	86	05.....	106
Information Technology Development	0605013A	124	05.....	788
JAVELIN (AAWS-M)	0604611A	89	05.....	170
Joint Air-to-Ground Missile (JAGM)	0605450A	126	05.....	835
Joint Light Tactical Vehicle - ED	0605812A	132	05.....	890
Joint Tactical Radio	0604280A	82	05.....	78
LIGHT TACTICAL WHEELED VEHICLES	0604642A	93	05.....	218

UNCLASSIFIED

UNCLASSIFIED

Army • President's Budget Submission FY 2013 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Landmine Warfare/Barrier - Eng Dev	0604808A	113	05.....	621
Logistics and Engineer Equipment - Eng Dev	0604804A	110	05.....	489
MEDIUM TACTICAL VEHICLES	0604604A	87	05.....	160
Manned Ground Vehicle	0605625A	130	05.....	869
Medical Materiel/Medical Biological Defense Equipment - Eng Dev	0604807A	112	05.....	593
Mid-tier Networking Vehicular Radio (MNVR)	0604290A	83	05.....	83
Night Vision Systems - Eng Dev	0604710A	99	05.....	286
Non-System Training Devices - Eng Dev	0604715A	101	05.....	333
Nuclear Arms Control Monitoring Sensor Network	0604870A	123	05.....	779
PAC-3/MSE MISSILE	0605456A	128	05.....	848
Patriot/MEADS Combined Aggregate Program (CAP)	0604869A	122	05.....	770
RADAR DEVELOPMENT	0604820A	117	05.....	707
SLAMRAAM	0605455A	127	05.....	843
Smoke, Obscurant and Target Defeating Sys - Eng Dev	0604609A	88	05.....	165
Soldier Systems - Warrior Dem/Val	0604827A	120	05.....	739
TACTICAL UNMANNED GROUND VEHICLE	0604641A	92	05.....	211
TERRAIN INFORMATION - ENG DEV	0604716A	102	05.....	355
TRACTOR CAGE	0604328A	85	05.....	104
TROJAN - RH12 - MIP	0303032A	133	05.....	899

UNCLASSIFIED

UNCLASSIFIED

Army • President's Budget Submission FY 2013 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Weapons and Munitions - Eng Dev	0604802A	109	05.....	479

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	70.926	119.573	78.538	-	78.538	119.844	72.357	3.373	6.011	Continuing	Continuing
C97: <i>ACFT AVIONICS</i>	70.926	119.573	17.294	-	17.294	39.576	23.049	1.947	1.385	Continuing	Continuing
VU3: <i>NETWORKING AND MISSION PLANNING</i>	-	-	61.244	-	61.244	80.268	49.308	1.426	4.626	Continuing	Continuing

Note

FY 2011 Changes: -\$15.000 million for SOSCOE Apache Block III integration change in requirements; -\$2.161 million SBIR/STTR; -\$0.454 million Congressional General Reductions; -\$0.669 million reprogrammed to PE/Project 0603801A/B32, Adv Maint Concepts/Eq.

FY 2012 Changes: -\$15.000 million for JTRS AMF integration delays; -\$10.000 JPALS excessive growth; -\$0.114 million Congressional General Reductions.

FY 2013 Changes: -\$98.680 million realigned to higher priority Army requirements.

A. Mission Description and Budget Item Justification

The FY 2013 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 PE support research, development, and test efforts in the Engineering and Manufacturing Development (EMD) phases of these systems. Beginning in FY 2013, funding on this Program Element was split into Projects C97 Aircraft Avionics and VU3 Networking and Mission Planning.

The JTRS is the transformational system that provides Army Aviation interoperability capability for Future Force and Joint Force operations. The JTRS integration effort provides for the non-recurring engineering required to integrate and qualify the JTRS compliant radios with Link 16 and/or other advanced networking waveforms into the AH-64D, Armed Aerial Scout (AAS), and Unmanned Aircraft Systems (UAS). Funding in FY 2013 will continue the Apache Block 3 Link 16 integration to support ground and flight testing. Additional activities for FY 2013 include continuing development of common radio control software for use on multiple platform integrations, finalizing the qualification of JTRS antennas, and conducting platform antenna co-site and link quality analysis.

The Improved Data Modem (IDM) is the common solution for digitizing Army Aviation. It performs as an internet controller and gateway to the 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 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.

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 Army plans to integrate JPALS capabilities as defined by the Navy (Shipboard operations) and the Air Force (Land-

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	PE 0604201A: <i>AIRCRAFT AVIONICS</i>

based operations) through the JPALS Army Risk Reduction (JARR) and the JPALS Common Avionics Technology Development (JCATD) efforts. JARR defined implementation alternatives for aircraft integration. JCATD continues the alternative analysis.

The ASN-128D upgrade program conducts system engineering trade studies to reduce space, weight, and power with the introduction of new navigation support capabilities such as inertial sensor, MIL-STD-1553 interface card, and Instrument Flight Rules (IFR) map display, and prepares Engineering Change Proposals to the existing ASN-128D Line Replaceable Units as a result of those trade studies. The effort also derives ASN-128D GATM compliance matrices for current and planned GATM capabilities for the upcoming decade.

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. FY 2011 funds will complete ARC-220 software and test system changes.

The Aviation Mission Planning System (AMPS) interfaces with Army Mission Command Systems 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 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 via the Future Airborne Capability Environment (FACE). This includes the non-recurring engineering for integration, test, and air worthiness qualification.

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,

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE				
2040: <i>Research, Development, Test & Evaluation, Army</i>	PE 0604201A: <i>AIRCRAFT AVIONICS</i>				
BA 5: <i>Development & Demonstration (SDD)</i>					

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	89.210	144.687	177.218	-	177.218
Current President's Budget	70.926	119.573	78.538	-	78.538
Total Adjustments	-18.284	-25.114	-98.680	-	-98.680
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.669	-			
• SBIR/STTR Transfer	-2.161	-			
• Adjustments to Budget Years	-	-	-98.680	-	-98.680
• Other Adjustments 1	-15.454	-25.114	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT C97: <i>ACFT AVIONICS</i>
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Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The FY 2013 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. Beginning in FY 2013, the Networking and Mission Planning funds on this project were moved to a new project, VU3 Networking and Mission Planning.

The JTRS is the transformational system that provides Army Aviation interoperability capability for Future Force and Joint Force operations. The JTRS integration effort provides for the non-recurring engineering required to integrate and qualify the JTRS compliant radios with Link 16 and/or other advanced networking waveforms into the AH-64D, Armed Aerial Scout (AAS), and Unmanned Aircraft Systems (UAS). Funding in FY 2013 will continue the Apache Block 3 Link 16 integration to support ground and flight testing. Additional activities for FY 2013 include continuing development of common radio control software for use on multiple platform integrations, finalizing the qualification of JTRS antennas, and conducting platform antenna co-site and link quality analysis.

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The ASN-128D upgrade program conducts system engineering trade studies to reduce space, weight, and power with the introduction of new navigation support capabilities such as inertial sensor, MIL-STD-1553 interface card, and Instrument Flight Rules (IFR) map display, and prepares Engineering Change Proposals (ECPs) to the existing ASN-128D Line Replaceable Units (LRUs) as a result of those trade studies. The effort also derives ASN-128D GATM compliance matrices for current and planned GATM capabilities for the upcoming decade.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT C97: <i>ACFT AVIONICS</i>
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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 via Future Airborne Capability Environment (FACE). This includes the non-recurring engineering for integration, test, and air worthiness qualification.

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.

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 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 technologies to reduce the aircrew risks during flights in Degraded Visual Environment (DVE) due to loss of situational awareness. The systems will be integrated on CH-47F, AH-64D, OH-58D, and UH-60A/L/M aircraft.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>Title: Joint Tactical Radio System (JTRS) integration and qualification for AH-64D, AAS, UAS and multiple SOA platforms.</p> <p style="text-align: right;">Articles:</p> <p>Description: The JTRS integration effort provides for the non-recurring engineering required to integrate and qualify the JTRS compliant radios and/or other advanced networking waveforms into the AH-64D, Armed Aerial Scout (AAS), Unmanned Aerial Systems (UAS) and multiple Aviation SOA platforms for both production cut-in and retrofit activities.</p> <p>FY 2011 Accomplishments: Continued Link 16 hardware and software integration activities for AH-64D resulting in a technical design review. Link 16 Apache software integration tests conducted on Airborne Maritime Fixed (AMF) engineering development models. Initiated a program to develop common radio control software for use on multiple platform integrations and conducted demonstration of the reusable control software. Continued development of common JTRS antenna to be used on all aviation platforms. Conducted platform</p>	20.933 0	14.646 0	17.294

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT C97: <i>ACFT AVIONICS</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>JTRS antenna co-site and link quality assessments on multiple platforms. Initiated JTRS radio integration activities for UAS Shadow.</p> <p>FY 2012 Plans: Continue Link 16 integration activities for AH-64D to support ground E3 and integration test. Initiate Apache early software integration for implementation of a Wideband Networking Waveform. Continue reusable radio control software development with completion of system requirements identification and initiation of detailed design. Select and begin qualification of JTRS antennas for use on all platforms. Continue to use antenna co-site effort to determine platform JTRS antenna locations and associated co-site analysis. Develop hardware and software modifications for integration of a JTRS compliant radio onto the UAS Shadow. Conduct Shadow JTRS flight test.</p> <p>FY 2013 Plans: Continue Link 16 integration activities for AH-64D to support ground and flight tests. Replace AMF engineering development models with low rate initial production units and conduct regression testing and continue development of common radio control software.</p>				
<p>Title: Joint Precision Approach and Landing System (JPALS)</p> <p>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 operation missions including those operating from fixed base, ship, tactical, and special mission environments under a wide range of meteorological and jamming conditions.</p> <p>FY 2011 Accomplishments: Continued Increment II waveform definitization and the development of a Ground Based Local Area Augmentation System (LAAS). Developed a common JPALS solution for the fixed wing Local Area Differential GPS (LDGPS). Completed the development of the Air Integration Guides (AIG) for CH-47F and HH/UH-60M for Shipboard Relative GPS (SRGPS). Initiated the ARC-231 JPALS datalink assessment. Continued the JPALS Army Risk Reduction (JARR) activities and initiated the JPALS Common Avionics Technology Development (JCATD) efforts.</p> <p>FY 2012 Plans: Complete the AIG effort related to the AH-64D platform, Block III. Complete Non-Recurring Engineering (NRE) efforts for M-Code development. Complete Small Antenna System (SAS) anti-jamming antenna co-site analysis and M-Code recurring prototyping.</p>		<p>11.511 0</p>	<p>9.343 0</p>	<p>-</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT C97: <i>ACFT AVIONICS</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Complete the JCATD effort, and continue to support JPALS Increment 1 and 2 development and Program Management coordination meetings, Technical Interchange Meetings, and working groups.				
<p>Title: Improved Data Modem (IDM)</p> <p align="right">Articles:</p> <p>Description: The 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 Aviation. The IDM provides radio connectivity to the ARC-201D/231, ARC-186, ARC-164 and the Blue Force Tracker 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.</p> <p>FY 2011 Accomplishments: Continued design and development of OSA hardware and software including creation of test plans and descriptions as well as production plans. Continued integration of the Joint Tactical Radio System (JTRS) and development, integration, and testing of JBC-P(A) products.</p> <p>FY 2012 Plans: Test and evaluate IDM OSA hardware and software against 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 efforts. Continue development, integration, and testing of JBC-P(A).</p>		10.256 0	25.306 0	-
<p>Title: DGNS-128D Upgrade</p> <p align="right">Articles:</p> <p>Description: The ASN-128D upgrade program conducts system engineering trade studies to reduce space, weight, and power with the introduction of new navigation support capabilities such as inertial sensor, MIL-STD-1553 interface card, and Instrument Flight Rules (IFR) map display, and prepares Engineering Change Proposals (ECPs) to the existing ASN-128D Line Replaceable Units (LRUs) as a result of those trade studies. The effort also derives ASN-128D GATM compliance matrices for current and planned GATM capabilities for the upcoming decade.</p> <p>FY 2011 Accomplishments: Initiated DGNS-128D Upgrade ECP prep effort.</p> <p>FY 2012 Plans:</p>		2.934 0	8.157 0	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>		PROJECT C97: <i>ACFT AVIONICS</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
Complete the DGNS-128D Upgrade ECP effort.		FY 2011	FY 2012	FY 2013
<p>Title: Aviation Mission Planning System (AMPS)</p> <p>Articles:</p> <p>Description: The 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 Mission Command Systems (AMCS) 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 Aircraft Systems (UAS). This effort will allow for the integration of new route server, calculation 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.</p> <p>FY 2011 Accomplishments: Continued design, development, integration, and test of additional software components needed for the XPLAN application. Continued the updates required to modify platform AWEs allowing them to function in the XPLAN architecture. Continued development platform AWEs to support new aircraft to include the Block III programs for UH-60M, CH-47, and OH-58D CDS4.</p> <p>FY 2012 Plans: Complete design, development, integration, and test of additional software components needed for the XPLAN application. Complete the updates required to modify platform AWEs allowing them to function in the XPLAN architecture. Complete development platform AWEs to support new aircraft to include the Block III programs for UH-60M, CH-47, and OH-58D CDS4.</p>		3.003 0	0.900 0	-
<p>Title: Apache Block III</p> <p>Articles:</p> <p>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 via FACE. 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.</p> <p>FY 2012 Plans: Begin integration of the selected middleware into the Apache Block III to support the Army Common Operating Environment convergence via FACE.</p>		-	10.076 0	-
Title: Aviation Data Exploitation Capability (ADEC)		10.140	12.401	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>		PROJECT C97: <i>ACFT AVIONICS</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Articles:		0	0	
Description: 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 (MFOQA), and Platform Maintenance Environment processes. ADEC is the transformation system required for interoperability with the Army's future logistic systems.				
FY 2011 Accomplishments: Initiated design, development, integration, and testing of the hardware and software needed to realize the ADEC system. Hardware consist of the ADEC server, MFOQA workstation, and various network enabling technologies, such as routers, switches, hubs, etc. Software design, development, integration, and testing focused on core applications, such as the operating system, application framework, and network software. Also initiated 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: Continue design, development, integration, and testing of the hardware and software needed to realize the ADEC system. Continue the advanced component development and prototyping of the baseline MFOQA applications, Aviation Maintenance Software Suite, and CAFRS integration.				
Title: Aircraft Notebook (ACN)		6.608	5.444	-
Articles:		0	0	
Description: 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 work towards the reduction of the IT footprint within an aviation unit by integrating multiple pieces of software onto one piece of hardware.				
FY 2011 Accomplishments: Began software design, development, integration, and testing of the ACN applications.				
FY 2012 Plans: Continue software design, development, integration, and testing of the ACN applications.				
Title: Helicopter Terrain Avoidance and Warning System (HTAWS)		5.041	33.300	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT C97: <i>ACFT AVIONICS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p align="right">Articles:</p> <p>Description: HTAWS will develop, integrate, and test technologies to reduce the aircrew risks during flights in Degraded Visual Environment (DVE) due to loss of situational awareness. The systems will be integrated on CH-47F, AH-64D, OH-58D, and UH-60A/L/M aircraft. Received CENTCOM DVE Operational Need Statement (ONS) 11-14093, validated 20 June 2011.</p> <p>FY 2011 Accomplishments: Initiated the development of the DVE hardware and software.</p> <p>FY 2012 Plans: Continue the development of the DVE hardware and software.</p> <p>Title: ARC-220 Product Development</p>	0	0	
<p align="right">Articles:</p> <p>Description: 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.</p> <p>FY 2011 Accomplishments: Continued testing and evaluation required to complete the ARC-220 Software Enhancements.</p>	0.500 0	-	-
Accomplishments/Planned Programs Subtotals	70.926	119.573	17.294

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Airborne Avionics: <i>Airborne Avionics</i>	209.231									Continuing	Continuing
• Network and Mission Plan: <i>Network and Mission Plan</i>		136.432	190.789		190.789		200.733	255.439	185.804	Continuing	Continuing
• COMMS, NAV Surveillance: <i>COMMS, NAV Surveillance</i>		117.855	133.191		133.191		216.082	192.600	174.806	Continuing	Continuing

D. Acquisition Strategy
This project is comprised of multiple systems supporting aircraft avionics. While the detailed acquisition strategy varies from program to program, the general strategy is for each individual program to complete the development and testing efforts in coordination with the aircraft platforms on integration issues, use the various contracts

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	PE 0604201A: <i>AIRCRAFT AVIONICS</i>	C97: <i>ACFT AVIONICS</i>

of the aircraft platforms original equipment manufacturers on integration efforts, and utilize the Aviation & Missile Research, Development, and Engineering Center for software development. This requires the use of various contract methods and types to accomplish the aircraft avionics development efforts. All required acquisition program documentation is prepared.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT C97: <i>ACFT AVIONICS</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Spt (ACN)	Various	Various:Various	0.528	0.441		-		-		-	0.000	0.969	0.000
PM Spt (IDM)	Various	Various:Various	0.174	0.175		-		-		-	Continuing	Continuing	Continuing
PM Spt (ADEC)	Various	Various:Various	1.500	1.295		-		-		-	Continuing	Continuing	Continuing
PM Spt (HTAWS)	Various	Various:Various	0.872	0.927		-		-		-	Continuing	Continuing	Continuing
Subtotal			3.074	2.838		-		-		-			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JTRS Common Radio Control Software Development	Various	AMRDEC Software Engineering Directorate:Redstone Arsenal, AL	1.378	1.295		2.725		-		2.725	Continuing	Continuing	Continuing
JTRS Antenna/RF Switching Development	MIPR	CERDEC:Lakehurst, NJ	1.108	0.778		1.772		-		1.772	Continuing	Continuing	Continuing
JBC-P(A) development and testing (IDM)	Various	AMRDEC Software Engineering Directorate:Redstone Arsenal, AL	6.000	5.000		-		-		-	0.000	11.000	0.000
Tri-Service XPlan component integration/AWE modifications (AMPS)	PO	AMRDEC Software Engineering Directorate:Redstone Arsenal, AL	3.003	0.900		-		-		-	0.000	3.903	0.000
JTRS Shadow Integration and Qualification	SS/CPFF	AAI Corporation:Huntvalley, MD	3.312	1.350		-		-		-	0.000	4.662	0.000
Air Integration Guides (AIG) (JPALS)	Various	Various:Various	1.700	0.231		-		-		-	0.000	1.931	0.000
JPALS Army Risk Reduction (JARR)/ M-Code Development	C/CPFF	Honeywell:Clearwater, FL	0.218	-		-		-		-	0.000	0.218	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT C97: <i>ACFT AVIONICS</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JPALS Common Avionics Technology Development (JCATD)	C/CPFF	Honeywell:Clearwater, FL	7.607	6.838		-		-		-	0.000	14.445	0.000
Middleware integration onto Apache Block III	Various	Various:Various	-	10.076		-		-		-	Continuing	Continuing	Continuing
Design, develop, and integrate ADEC software and hardware	Various	AMRDEC Software Engineering Directorate:Redstone Arsenal, AL	6.657	9.410		-		-		-	Continuing	Continuing	Continuing
DGNS AN/ASN-128D Upgrade	C/CPFF	TBD:TBD	2.934	8.157		-		-		-	0.000	11.091	0.000
Develop and qualify OSA hardware to host IDM	Various	Various:Various	1.082	17.131		-		-		-	Continuing	Continuing	Continuing
Develop and qualify the DVE hardware and software (HTAWS)	Various	Various:Various	4.169	32.373		-		-		-	Continuing	Continuing	Continuing
ARC-220 Operational Capability Improvements	SS/CPFF	Rockwell Collins:Iowa	0.500	-		-		-		-	0.000	0.500	0.000
Design, develop, and integrate ACN software and hardware	Various	AMRDEC Software Engineering Directorate:Redstone Arsenal, AL	4.381	3.400		-		-		-	0.000	7.781	0.000
JTRS Engineering Design Model (EDM) technical support	C/CPFF	Lockheed Martin:San Diego, CA	-	1.175		0.500		-		0.500	Continuing	Continuing	Continuing
JTRS Link-16 Integration onto AH-64D	SS/CPFF	Boeing:Mesa, AZ	15.135	10.048		12.297		-		12.297	Continuing	Continuing	Continuing
Subtotal			59.184	108.162		17.294		-		17.294			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT C97: <i>ACFT AVIONICS</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering, Logistics, and Technical Support (ADEC)	Various	Various:Various	1.314	0.761		-		-		-	Continuing	Continuing	Continuing
System Engineering, Logistics, and Technical Support (JPALS)	Various	Various:Various	1.986	2.274		-		-		-	0.000	4.260	0.000
Data (ADEC)	Various	Various:Various	0.487	0.570		-		-		-	0.000	1.057	0.000
System Engineering, Logistics, and Technical Support (ACN)	TBD	Various:Various	1.016	0.925		-		-		-	0.000	1.941	0.000
Data (ACN)	Various	Various:Various	0.114	0.201		-		-		-	0.000	0.315	0.000
Subtotal			4.917	4.731		-		-		-			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation (ACN)	Various	Various:Various	0.569	0.477		-		-		-	0.000	1.046	0.000
ASIF Test Lab (IDM)	Various	AMCOM:Redstone Arsenal, AL	3.000	3.000		-		-		-	Continuing	Continuing	Continuing
Test and Evaluation (ADEC)	Various	Various:Various	0.182	0.365		-		-		-	Continuing	Continuing	Continuing
Subtotal			3.751	3.842		-		-		-			

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		70.926	119.573		17.294		-	17.294			

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT C97: <i>ACFT AVIONICS</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JTRS Antenna/RF Switching Development	2	2011	2	2014
JPALS Avionics Risk Reduction Activities (JARR)	3	2011	2	2012
JPALS M-Code Development	4	2012	4	2013
DGNS AN/ASN-128D Upgrade Study	4	2011	1	2013
Middleware Integration on Apache Blk III	2	2012	4	2014
JBC-P(A) Development and Testing (IDM)	2	2011	2	2013
Develop Hardware and Software (ADEC)	2	2011	4	2014
ASIF Lab (IDM)	2	2011	4	2016
Helicopter Terrain Avoidance and Warning System (HTAWS)	4	2011	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>				PROJECT VU3: <i>NETWORKING AND MISSION PLANNING</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
VU3: <i>NETWORKING AND MISSION PLANNING</i>	-	-	61.244	-	61.244	80.268	49.308	1.426	4.626	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The FY 2013 budget request funds the development of Networking and Mission Planning 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. Beginning in FY 2013, the Networking and Mission Planning funds were moved from Project C97 Aircraft Avionics to Project VU3 Networking and Mission Planning.

The Improved Data Modem (IDM) is the common solution for digitizing Army Aviation. It performs as an internet controller and gateway to the 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 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.

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 via the Future Airborne Capability Environment (FACE). This includes the non-recurring engineering for integration, test, and air worthiness qualification.

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.

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 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 technologies to reduce the aircrew risks during flights in Degraded Visual Environment (DVE) due to loss of situational awareness. The systems will be integrated on the CH-47F, AH-64D, OH-58D, and the UH-60A/L/M aircraft.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT VU3: <i>NETWORKING AND MISSION PLANNING</i>
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The Aviation Logistics Enterprise-Platform (ALE-P) will replace the Unit Level Logistics System-Aviation (Enhanced) (ULLS-A[E]) and the Unmanned Aviation Systems-Initiative (UAS-I) which currently only provides automated logistics capabilities for the UAS community. ALE-P will provide an Aviation enterprise capability interface to the Global Combat Support System-Army (GCSS-Army). ALE-P will be a combination of software and hardware that forms a Decision Support System which receives, processes, analyzes, and transmits data from Quality Control, Production Control, Tech Supply, Backshop, and Phase Module activities. ALE-P will seamlessly interface with the Aircraft Notebook (ACN) and the Aviation Data Exploitation Capability (ADEC) as an integrated Family of Systems.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013
<p>Title: Improved Data Modem (IDM)</p> <p>Description: The 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 Aviation. The IDM provides radio connectivity to the ARC-201D/231, ARC-186, ARC-164 and the Blue Force Tracker 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.</p> <p>FY 2013 Plans: Deliver engineering releases of IDM OSA hardware and software to aircraft platforms to aid integration efforts. Continue development, integration, and testing of JBC-P(A) products.</p>	-	-	2.072
<p>Title: Apache Block III</p> <p>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 via the Future Airborne Capability Environment (FACE). 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. FY 2013 funds are to continue integration of the selected middleware into the Apache Block III to support the Army Common Operation Environment convergence.</p> <p>FY 2013 Plans: Continue integration of the selected middleware into the Apache Block III to support the Army Common Operating Environment convergence via FACE.</p>	-	-	5.200
<p>Title: Aviation Data Exploitation Capability (ADEC)</p> <p>Description: The 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</p>	-	-	9.200

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT VU3: <i>NETWORKING AND MISSION PLANNING</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
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 2013 Plans: Continue design, development, integration, and testing of the hardware and software needed to realize the ADEC system. Continue the advanced component development Phase II applications.				
Title: Helicopter Terrain Avoidance and Warning System (HTAWS) Description: The HTAWS will develop, integrate, and test technologies to reduce the aircrew risks during flights in Degraded Visual Environment (DVE) due to loss of situational awareness. The systems will be integrated on the CH-47F, AH-64D, OH-58D, and the UH-60A/L/M aircraft.		-	-	43.500
FY 2013 Plans: Continue development of the DVE hardware and software.				
Title: Aviation Logistics Enterprise-Platform (ALE-P) Description: The Aviation Logistics Enterprise-Platform (ALE-P) will replace the Unit Level Logistics System-Aviation (Enhanced) (ULLS-A[E]) and the Unmanned Aviation Systems-Initiative (UAS-I) which currently only provides automated logistics capabilities for the UAS community. ALE-P will provide an Aviation enterprise capability interface to the Global Combat Support System-Army (GCSS-Army). ALE-P will be a combination of SW and HW that forms a Decision Support System which receives, processes, analyzes, and transmits data from Quality Control, Production Control, Tech Supply, Backshop, and Phase Module activities. ALE-P will seamlessly interface with the Aircraft Notebook (ACN) and the Aviation Data Exploitation Capability (ADEC) as an integrated Family of Systems.		-	-	1.272
FY 2013 Plans: Begin development of ALE-P hardware and software.				
Accomplishments/Planned Programs Subtotals		-	-	61.244

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT VU3: <i>NETWORKING AND MISSION PLANNING</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Airborne Avionics: <i>Airborne Avionics</i>	209.231									0.000	209.231
• Network and Mission Plan: <i>Network and Mission Plan</i>		136.432	190.789		190.789		200.733	255.439	185.804	0.000	1,151.842

D. Acquisition Strategy

This project is comprised of multiple systems supporting aircraft avionics. While the detailed acquisition strategy varies from program to program, the general strategy is for each individual program to complete the development and testing efforts in coordination with the aircraft platforms on integration issues, use the various contracts of the aircraft platforms original equipment manufacturers on integration efforts, and utilize the Aviation & Missile Research, Development, and Engineering Center for software development. This requires the use of various contract methods and types to accomplish the aircraft avionics development efforts. All required acquisition program documentation is prepared.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT VU3: <i>NETWORKING AND MISSION PLANNING</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Support (IDM)	TBD	AMCOM:Redstone Arsenal, AL	-	-		0.321		-		0.321	Continuing	Continuing	Continuing
PM Support (ADEC)	TBD	AMCOM:Redstone Arsenal, AL	-	-		0.349		-		0.349	Continuing	Continuing	Continuing
PM Support (HTAWS)	TBD	AMCOM:Redstone Arsenal, AL	-	-		1.396		-		1.396	Continuing	Continuing	Continuing
Subtotal			-	-		2.066		-		2.066			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Middleware integration onto Apache Block III	TBD	TBD:TBD	-	-		5.200		-		5.200	Continuing	Continuing	Continuing
Develop and qualify OSA hardware to host IDM	TBD	Various:Various	-	-		0.500		-		0.500	Continuing	Continuing	Continuing
Design, develop, and integrate ADEC software and hardware	Various	Various:Various	-	-		6.883		-		6.883	Continuing	Continuing	Continuing
Develop and qualify the HTAWS hardware and software	Various	Various:Various	-	-		42.104		-		42.104	Continuing	Continuing	Continuing
Develop and qualify the software and hardware for ALE-P.	Various	Various:Various	-	-		1.272		-		1.272	Continuing	Continuing	Continuing
Subtotal			-	-		55.959		-		55.959			

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT VU3: <i>NETWORKING AND MISSION PLANNING</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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

Middleware Integration on Apache Block III	[REDACTED]																											
Develop hardware and software (ADEC)	[REDACTED]																											
ASIF Lab (IDM)	[REDACTED]																											
Helicopter Terrain Avoidance and Warning System (HTAWS)	[REDACTED]																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT VU3: <i>NETWORKING AND MISSION PLANNING</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Middleware Integration on Apache Block III	2	2012	4	2014
Develop hardware and software (ADEC)	2	2011	4	2014
ASIF Lab (IDM)	2	2011	4	2016
Helicopter Terrain Avoidance and Warning System (HTAWS)	4	2011	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	69.922	82.363	90.494	-	90.494	50.043	15.300	-	-	Continuing	Continuing
538: <i>KIOWA WARRIOR</i>	67.908	67.378	85.468	-	85.468	50.043	15.300	-	-	Continuing	Continuing
53Z: <i>ARMED SCOUT HELICOPTER</i>	2.014	14.985	5.026	-	5.026	-	-	-	-	Continuing	Continuing

Note

Change Summary Explanation:
 FY 2011: Base funding realigned to other Army programs.
 FY 2012: Base funding realigned to other Army programs.
 FY 2013: 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 safety issues with the current fielded fleet. KW CASUP is not the alternative solution to meet the Armed Scout Helicopter capability.

Funding supports the Armed Aerial Scout (AAS) voluntary flight demonstration and AAS milestone support/risk reduction. Post FY 2013 funding will be re-addressed as program strategies mature.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
2040: <i>Research, Development, Test & Evaluation, Army</i>	PE 0604220A: <i>Armed, Deployable Helos</i>
BA 5: <i>Development & Demonstration (SDD)</i>	

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	72.550	166.132	59.958	-	59.958
Current President's Budget	69.922	82.363	90.494	-	90.494
Total Adjustments	-2.628	-83.769	30.536	-	30.536
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.027	-			
• Adjustments to Budget Years	-0.178	-83.769	30.536	-	30.536
• Economic Assumption	-0.369	-	-	-	-
• FFRDC	-0.054	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>	PROJECT 538: <i>KIOWA WARRIOR</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
538: <i>KIOWA WARRIOR</i>	67.908	67.378	85.468	-	85.468	50.043	15.300	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The OH-58D Kiowa Warrior (KW) 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. Sensor imagery from compatible Unmanned Aerial Systems and manned aircraft can be received and relayed to other aircraft or ground stations. The Active Army and the National Guard fly Kiowa Warriors.

Funding develops, integrates and qualifies modifications to support Kiowa Warrior missions. The ACAT II KW Cockpit and Sensor Upgrade Program (CASUP) will convert the OH-58D/D(R) to the OH-58F configuration, and allow it to continue to safely serve as the Army's armed reconnaissance, aviation platform through its operational service end date of FY 2025. Efforts include upgrading to Control Display Subsystem version 5 (CDS5), adding a second AN/ARC231 SATCOM Radio, third Multifunction Display (MFD), Dual Channel Full Authority Digital Electronic Controller(FADEC), armament enhancements, replace the Mass Mounted Sight (MMS) with an advanced Nose Mounted Sensor (NMS), and other weight and obsolescence reduction upgrades. Cockpit and maintenance trainers will be upgraded to maintain concurrency.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Development and Integration	51.228	45.635	51.966	-	51.966
Articles:	0	0			
Description: Development and Integration Efforts					
FY 2011 Accomplishments: Development and Integration Efforts					
FY 2012 Plans: Development and Integration Efforts					
FY 2013 Base Plans: Development and Integration Efforts					
Title: Engineering Support Activities	8.005	14.276	17.934	-	17.934

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>	PROJECT 538: <i>KIOWA WARRIOR</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p align="right">Articles:</p> <p>Description: Engineering Support Activities</p> <p>FY 2011 Accomplishments: Engineering Support Activities</p> <p>FY 2012 Plans: Engineering Support Activities</p> <p>FY 2013 Base Plans: Engineering Support Activities</p>	0	0			
<p>Title: Test and Evaluation</p> <p align="right">Articles:</p> <p>Description: Test and Evaluation</p> <p>FY 2011 Accomplishments: Test and Evaluation</p> <p>FY 2012 Plans: Test and Evaluation</p> <p>FY 2013 Base Plans: Test and Evaluation</p>	2.030 0	1.168 0	7.696	-	7.696
<p>Title: Program Management</p> <p align="right">Articles:</p> <p>Description: Program Management</p> <p>FY 2011 Accomplishments: A. Program Management</p> <p>FY 2012 Plans: B. Program Management</p> <p>FY 2013 Base Plans:</p>	6.645 0	6.299 0	7.872	-	7.872

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>	PROJECT 538: <i>KIOWA WARRIOR</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
C. Program Management					
Accomplishments/Planned Programs Subtotals	67.908	67.378	85.468	-	85.468

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• (AZ2200): <i>Kiowa Warrior</i>	202.437	92.552	192.484		192.484		485.709	577.703	536.035	782.731	3,211.522
• (A02345): <i>Kiowa WRA</i>		100.800	0.000	183.900	183.900					0.000	284.700

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>	PROJECT 538: <i>KIOWA WARRIOR</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	Various Activities: Various Activities	14.673	6.299		7.872		-		7.872	Continuing	Continuing	Continuing
Subtotal			14.673	6.299		7.872		-		7.872			

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

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development and Integration	Various	Honeywell Inc (CDS5 Software Development): PIF (Structural Integration)	177.799	45.635		51.966		-		51.966	Continuing	Continuing	Continuing
Subtotal			177.799	45.635		51.966		-		51.966			

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

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support Activities	Various	Various Activities: AED & SED	21.442	14.276		17.934		-		17.934	Continuing	Continuing	Continuing
Subtotal			21.442	14.276		17.934		-		17.934			

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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>	PROJECT 538: <i>KIOWA WARRIOR</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Test and Evaluation	Various	Various Activities:RTC, AATD, DTC, OTC	6.421	1.168		7.696		-		7.696	Continuing	Continuing	Continuing	
Subtotal			6.421	1.168		7.696		-		7.696				

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 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	220.335	67.378	85.468	-	85.468			

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>	PROJECT 538: <i>KIOWA WARRIOR</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Critical Design Review (CDR)	2	2012	2	2012
Milestone C	2	2015	2	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>				PROJECT 53Z: <i>ARMED SCOUT HELICOPTER</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
53Z: <i>ARMED SCOUT HELICOPTER</i>	2.014	14.985	5.026	-	5.026	-	-	-	-	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) voluntary flight demonstration and AAS milestone support/risk reduction. Post FY 2013 funding will be re-addressed as program strategies mature.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: AAS AoA and Milestone Support/Risk Reduction	2.014	6.285	5.026	-	5.026
Articles:	0	0			
Description: Funding is provided for the following effort					
FY 2011 Accomplishments: Continue AAS AoA and Milestone support					
FY 2012 Plans: Complete AoA and initiate AAS Milestone Support/Risk Reduction					
FY 2013 Base Plans: AAS Milestone Support and Risk Reduction					
Title: Voluntary Flight Demonstration	-	8.700	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>	PROJECT 53Z: <i>ARMED SCOUT HELICOPTER</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
	<i>Articles:</i>		0		
Description: Funding is to support Voluntary Flight Demonstration					
FY 2012 Plans: Voluntary Flight Demonstration					
Accomplishments/Planned Programs Subtotals	2.014	14.985	5.026	-	5.026

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Not applicable for this item.

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>	PROJECT 53Z: <i>ARMED SCOUT HELICOPTER</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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

VOLUNTARY FLIGHT DEMONSTRATION	[REDACTED]																											
MILESTONE SUPPORT and RISK REDUCTION	[REDACTED]																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>	PROJECT 53Z: <i>ARMED SCOUT HELICOPTER</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
VOLUNTARY FLIGHT DEMONSTRATION	1	2012	4	2012
MILESTONE SUPPORT and RISK REDUCTION	3	2012	4	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	196.428	34.233	181.347	-	181.347	245.239	271.971	155.916	140.185	Continuing	Continuing
665: <i>A/C SURV EQUIP DEV</i>	4.727	9.545	21.976	-	21.976	14.109	18.362	18.996	15.374	Continuing	Continuing
L13: <i>COUNTER-IEDS</i>	4.000	-	-	-	-	-	-	-	-	Continuing	Continuing
L20: <i>ATIRCM/CMWS</i>	187.701	-	-	-	-	-	-	-	-	Continuing	Continuing
VS6: <i>INTEGRATED ELECTRONIC WARFARE SYSTEMS</i>	-	7.386	49.836	-	49.836	110.180	113.947	55.156	56.087	Continuing	Continuing
VU7: <i>COMMON MISSILE WARNING SYSTEM (CMWS)</i>	-	17.125	12.094	-	12.094	-	-	-	-	Continuing	Continuing
VU8: <i>COMMON INFRARED COUNTER MEASURE (CIRCM)</i>	-	0.177	97.441	-	97.441	120.950	139.662	81.764	68.724	Continuing	Continuing

Note

Change Summary Explanation: Realigned to higher priority requirements.

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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE				
2040: <i>Research, Development, Test & Evaluation, Army</i>	PE 0604270A: <i>Electronic Warfare Development</i>				
BA 5: <i>Development & Demonstration (SDD)</i>					

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	172.269	101.265	207.036	-	207.036
Current President's Budget	196.428	34.233	181.347	-	181.347
Total Adjustments	24.159	-67.032	-25.689	-	-25.689
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	24.159	-67.032	-25.689	-	-25.689

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT 665: <i>A/C SURV EQUIP DEV</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
665: <i>A/C SURV EQUIP DEV</i>	4.727	9.545	21.976	-	21.976	14.109	18.362	18.996	15.374	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 is pursuing a 4QFY12 MDD. Phase 3 adds active Electronic Countermeasures (ECM) jamming capability for selected aircraft.

FY13 RDTE funding \$21.976 million funds the digital RWR AOA, software development, modeling and simulation and the AN/APR-39 processor upgrade evaluation.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>Title: Radio Frequency Countermeasures</p> <p style="text-align: right;">Articles:</p> <p>Description: In-house and program management administration</p> <p>FY 2012 Plans: Will continue to fund Phase II RFCM</p>	-	2.489 0	-
<p>Title: Phase II Digital RWR</p> <p style="text-align: right;">Articles:</p> <p>Description: Phase II Product Development (Digital RWR)</p> <p>FY 2011 Accomplishments: Technical Studies</p> <p>FY 2012 Plans: Technical Studies</p> <p>FY 2013 Plans:</p>	4.727 0	7.056 0	21.976

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT 665: <i>A/C SURV EQUIP DEV</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Will continue to fund Phase II RFCM			
Accomplishments/Planned Programs Subtotals	4.727	9.545	21.976

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT 665: <i>A/C SURV EQUIP DEV</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Development	Various	Various:-	7.985	-		2.638		-		2.638	Continuing	Continuing	Continuing
Project Management	Various	Various:-	0.182	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			8.167	-		2.638		-		2.638			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Digital Radar Warning Receiver (RWR)	SS/FP	Lab Demo / AoA / Studies:Various-	3.569	7.065		8.391		-		8.391	Continuing	Continuing	Continuing
S/W Development	MIPR	AMRDEC, SED:Redstone Arsenal, AL	-	-		2.104		-		2.104	Continuing	Continuing	0.000
Modeling and Simulation	MIPR	AMRDEC, SEd:Redstone Arsenal, AL	-	-		1.052		-		1.052	Continuing	Continuing	0.000
Subtotal			3.569	7.065		11.547		-		11.547			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Support	Various	Various:-	1.439	0.920		0.945		-		0.945	Continuing	Continuing	Continuing
Matrix Support	Various	Various:-	4.974	1.560		1.587		-		1.587	Continuing	Continuing	Continuing
Subtotal			6.413	2.480		2.532		-		2.532			

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT 665: <i>A/C SURV EQUIP DEV</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Lab Demo Studies	██████████																											
Phase 2 MDD					████																							
Phase 2 MS A													████															
Phase 2 TD													████████████████															
Phase 2 MS B																	████											
Phase 2 EMD																	████████████											
Phase 2 DT/OT																					████							
Phase 2 MS C																					████							
Phase 2 LRIP																					████							
FUE																					████							

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT 665: <i>A/C SURV EQUIP DEV</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Lab Demo Studies	2	2011	3	2012
Phase 2 MDD	4	2012	4	2012
Phase 2 MS A	2	2014	2	2014
Phase 2 TD	2	2014	4	2015
Phase 2 MS B	1	2016	1	2016
Phase 2 EMD	1	2016	4	2016
Phase 2 DT/OT	4	2016	4	2016
Phase 2 MS C	1	2017	1	2017
Phase 2 LRIP	1	2017	1	2017
FUE	2	2017	2	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT L13: <i>COUNTER-IEDS</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
L13: <i>COUNTER-IEDS</i>	4.000	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

FY 2010 funding was for the Counter Radio Controlled Improvised Explosive Devices (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 2011	FY 2012	FY 2013
Title: COUNTER -IEDS	4.000	-	-
Articles:	0		
Description: This line funds government program operations and Duke Technical Insertion efforts.			
FY 2011 Accomplishments: Funds for Duke Technical Insertion efforts.			
Accomplishments/Planned Programs Subtotals	4.000	-	-

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• VA8000: <i>WARLOCK</i>	24.127		15.565		15.565		60.259	200.754		0.000	316.153

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.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT L13: <i>COUNTER-IEDS</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO Staff/Travel OH	Various	PM Electronic Warfare -PM Electronic Warfare - Fort Monmouth, NJ	0.475	-		-		-		-	Continuing	Continuing	0.000
Program SETA Support	Various	CACI -:NJ/MD	0.675	-		-		-		-	Continuing	Continuing	0.000
Subtotal			1.150	-		-		-		-			0.000

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Tech Insertion Range and Frequency Leverage - Duke	TBD	SRCTec:Syracuse, NY	15.305	-		-		-		-	Continuing	Continuing	0.000
Subtotal			15.305	-		-		-		-			0.000

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
COMMS Compatability & EMI	Various	I2WD:Fort Monmouth, NJ	1.200	-		-		-		-	Continuing	Continuing	0.000
Modeling and Simulation	Various	CERDEC, S&TCD:Fort Monmouth, NJ	1.679	-		-		-		-	Continuing	Continuing	0.000
Government Engineering Support	Various	I2WD:Fort Monmouth, NJ	0.588	-		-		-		-	Continuing	Continuing	0.000
Government Engineering Support	Various	Various:Various	0.788	-		-		-		-	Continuing	Continuing	0.000
Subtotal			4.255	-		-		-		-			0.000

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT L13: <i>COUNTER-IEDS</i>
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	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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

DTI Production	
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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT L13: <i>COUNTER-IEDS</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
DTI Production	2	2012	3	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT L20: <i>ATIRCM/CMWS</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
L20: <i>ATIRCM/CMWS</i>	187.701	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

L20 has been broken into subprograms for FY12 and those dollars are now covered in the VU7 (CMWS), and VU8 (CIRCM). In FY11 L20 covered CMWS, CIRCM, and HFDS. The HFDS MDD was indefinitely postponed during FY11 and no FY12 funding exists.

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 IR 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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT L20: <i>ATIRCM/CMWS</i>
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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. On August 13, 2011, the AAE approved an increase in the ATIRCM quantities for a total of 340 A-kits and 120 B-kits.

The CIRCM (next generation ATIRCM) subprogram is an IR 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. 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). CIRCM will provide the sole acquisition of future laser based IR countermeasure systems for all rotary-wing, tilt-rotor, and small fixed wing aircraft across the Department of Defense. The December 28, 2011 Defense Acquisition Executive Acquisition Memorandum (DAE ADM) authorized entry into the Technology Development (TD) Phase, designated the program a pre-Major Defense Acquisition Program (MDAP), and approved the updated exit criteria.

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 FY12.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>Title: Development Efforts</p> <p align="right">Articles:</p> <p>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 the HFDS/HF QRC development and begins the design and development of the CIRCM system.</p> <p>FY 2011 Accomplishments: RDT&E dollars supported HF QRC, CMWS Enhanced Sensor studies, initial development of the CMWS Tier 2/3 enhancement, the CIRCM Technology Development phase and HFDS development.</p>	<p>187.701</p> <p>0</p>	<p>-</p>	<p>-</p>
Accomplishments/Planned Programs Subtotals	187.701	-	-

C. Other Program Funding Summary (\$ in Millions)

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT L20: <i>ATIRCM/CMWS</i>

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 FY10, and fielding will begin in FY12. 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 FY12.

After a full and open competition beginning in 2QFY12 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 3QFY14. MS B approval will be followed by award of 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 Countermeasures intends to award a fixed price contract for CIRCM Full Rate Production.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT L20: <i>ATIRCM/CMWS</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR	Various	Various:-	6.775	-		-		-		-	Continuing	Continuing	Continuing
CMWS Systems Engineering and Prgram Management	Various	Various:-	3.711	-		-		-		-	0.000	3.711	0.000
CIRCM System Engineering Program Management	Various	PM ASE, HSV, AL:-	23.420	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			33.906	-		-		-		-			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
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:-	8.100	-		-		-		-	Continuing	Continuing	Continuing
CMWS Enhanced Sensor Study & Evaluation	Various	TBD:-	11.000	-		-		-		-	Continuing	Continuing	Continuing
CMWS Tier 2/3 Threat Upgrades	Various	Various:-	3.475	-		-		-		-	Continuing	Continuing	Continuing
CMWS Development Engineering	Various	-:-	43.982	-		-		-		-	Continuing	Continuing	0.000
CMWS Gen 3 ECU ETC	Various	Various:-	19.640	-		-		-		-	Continuing	Continuing	Continuing
CMWS Gen 3 Providence Additional Phases	Various	TBD:-	15.310	-		-		-		-	Continuing	Continuing	Continuing
CIRCM Non-Recurring Engineering	C/CPFF	TBD:-	96.011	-		-		-		-	Continuing	Continuing	Continuing
CIRCM Other R&D	TBD	Various:Various	12.880	-		-		-		-	0.000	12.880	0.000
CIRCM Development Facilities	TBD	Various:Various	6.190	-		-		-		-	0.000	6.190	0.000
HFDS Modernization Efforts	Various	Various:TBD	67.300	-		-		-		-	Continuing	Continuing	Continuing
HF QRC	TBD	Various:Various	48.000	-		-		-		-	0.000	48.000	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT L20: <i>ATIRCM/CMWS</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			333.288	-		-		-		-			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CIRCM Support Equipment	Various	TBD:-	3.350	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			3.350	-		-		-		-			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CMWS System Test and Evaluation	Various	Various:-	6.250	-		-		-		-	Continuing	Continuing	Continuing
CIRCM Other Testing	Various	TBD:-	5.910	-		-		-		-	Continuing	Continuing	Continuing
CIRCM Government System Test & Evaluation	Various	Various:-	15.856	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			28.016	-		-		-		-			

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			398.560	-		-		-		-			

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT L20: <i>ATIRCM/CMWS</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CMWS System Dev/Tier 2 and 3 Upgrades (Base)	2	2011	4	2013
Start of CMWS GEN 3 Asset Installation (Base)	3	2012	3	2012
CIRCM TD Phase	2	2012	1	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>				PROJECT VS6: <i>INTEGRATED ELECTRONIC WARFARE SYSTEMS</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
VS6: <i>INTEGRATED ELECTRONIC WARFARE SYSTEMS</i>	-	7.386	49.836	-	49.836	110.180	113.947	55.156	56.087	Continuing	Continuing
Quantity of RDT&E Articles											

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.

FY2013 funds support Materiel Solution Analysis (MSA) phase efforts for two IEWS components and transition of each into the acquisition process with separate Milestone decisions.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: IEWS	-	7.386	49.836
Articles:		0	
Description: The IEW System (IEWS) will consist of an Electronic Warfare Planning and Management Tool (EWPMT), Multi-Function EW (MFEW) and Defensive Electronic Attack (DEA) family of systems.			
FY 2012 Plans: IEWS Family of Systems: Establish Product Management Offices and support Analysis of Alternatives (AoA) efforts for all three components of the IEWS. EWPMT: Initiate efforts on an Acquisition Requirements Package (ARP) and prepare documentation in support of a Milestone B Decision. MFEW: Initiate efforts on an ARP and prepare documentation in support of a Milestone A Decision.			
FY 2013 Plans: EWPMT: Conduct Milestone B Decision Review. Complete ARP development, initiate a competitive procurement, conduct source selection, and award an EMD contract. MFEW: Conduct a Milestone A Decision Review. Complete ARP development, conduct source selection and award competitive prototyping efforts as architecture, networking, and technology risk reduction activities to support the MFEW effort.			
Accomplishments/Planned Programs Subtotals	-	7.386	49.836

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VS6: <i>INTEGRATED ELECTRONIC WARFARE SYSTEMS</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Integrated Electronic Warfare Syste: K00000							130.667	265.117	269.624	0.000	766.620

D. Acquisition Strategy

FY12 IEWS efforts consist of completion of Material Solution Analysis (MSA) phase efforts to include AoAs that will inform a Technology Development strategy and initial actions towards technology development and EMD contracts. In FY13, multiple competitive contracts are anticipated for each IEWS line of effort. For EWPMT, an automated information system (software) strategy is envisioned. For MFEW, multiple competitive prototype contracts are anticipated for the Technology Development phase.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VS6: <i>INTEGRATED ELECTRONIC WARFARE SYSTEMS</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO Staff/Travel	Allot	PM Electronic Warfare:Aberdeen Proving Ground, MD	-	0.975		3.025		-		3.025	Continuing	Continuing	0.000
Program and Technical Assistance support	C/TBD	TBD:Aberdeen Proving Ground, MD	-	0.489		-		-		-	Continuing	Continuing	0.000
Source Selection Evaluation Board (SSEB) support	MIPR	TBD:Aberdeen Proving Ground, MD	-	-		4.360		-		4.360	0.000	4.360	0.000
Subtotal			-	1.464		7.385		-		7.385			0.000

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EMD Contract - EWPMT	C/TBD	TBD:TBD	-	-		11.748		-		11.748	Continuing	Continuing	0.000
IEWS Engineering and Development	MIPR	I2WD:Aberdeen MD	-	3.757		-		-		-	Continuing	Continuing	Continuing
Technology Development contract for MFEW	C/TBD	TBD:TBD	-	-		24.461		-		24.461	Continuing	Continuing	0.000
Subtotal			-	3.757		36.209		-		36.209			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical/Engineering Support - Contractor	C/TBD	TBD:TBD	-	-		2.405		-		2.405	Continuing	Continuing	Continuing
Government Engineering Support	MIPR	USACECOM:Aberdeen Proving Ground, MD	-	2.165		3.837		-		3.837	Continuing	Continuing	Continuing
Subtotal			-	2.165		6.242		-		6.242			

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VS6: <i>INTEGRATED ELECTRONIC WARFARE SYSTEMS</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Establish Product Management Offices (PMOs)	2	2012	2	2013
EW Planning & Mgmt Tool (EWPMT) - MS B	2	2013	2	2013
EWPMT EMD Contract	3	2013	4	2017
EWPMT Limited Deployment	4	2014	4	2014
Multi-Functional EW - MS A	1	2013	1	2013
MFEW TD Phase Prototyping Efforts	3	2013	4	2014
Multi-Function EW	2	2015	2	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU7: <i>COMMON MISSILE WARNING SYSTEM (CMWS)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
VU7: <i>COMMON MISSILE WARNING SYSTEM (CMWS)</i>	-	17.125	12.094	-	12.094	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

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). SIIRCM 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 is an integrated ultraviolet (UV) missile warning system, an IR Laser Jamming and Improved Countermeasure Dispenser (ICMD) serving as a subsystem to the host aircraft.

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 and Common Infrared Countermeasure (CIRCM) subprograms. On September 3, 2010, the Principal Deputy to the USD(AT&L), Acting DAE signed an ADM approving the reinstatement of MS C for CMWS. The ADM redesignated the CMWS subprogram as ACAT IC. The Principal Deputy to the USD(AT&L) also approved the new baseline for CMWS.

The CMWS subprogram is a UV missile warning system that cues both flare and laser countermeasures to defeat incoming missiles and provides a limited ability to warn aircrews of incoming unguided munitions. The B-kit consists of the components which perform the missile detection and identification, unguided munitions detection, 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 warning signal to on-board avionics (to alert crewmembers) and to the IR 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. In addition the CMWS ECU receives detections of unguided munitions which it then passes oral and visual cues to the aircrew. The aircrew then applies the appropriate Tactics Techniques and Procedures (TTPs) to break contact or engage the enemy with own ship ordnance. The CMWS Generation 3 (Gen 3) Electronic 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 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.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU7: <i>COMMON MISSILE WARNING SYSTEM (CMWS)</i>
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Justification

RDT&E
Fiscal Year 2013 Base RDT&E dollars in the amount of 12.094 million supports design and development of Tier 2/3 upgrades and CMWS enhanced sensor studies.

CMWS will continue to spend RDT&E funds on the 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 sensors compared to IR missile warning sensors 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, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: Development Effort	-	17.125	12.094
Articles:		0	
Description: -			
FY 2012 Plans: RDT&E funding supports the design and development of the CMWS Tier 2/3 enhancement and the CMWS Enhanced Sensor studies.			
FY 2013 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	-	17.125	12.094

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APA Funding: <i>APA, BA 4 AZ3517</i>		104.251	127.751		127.751		125.349	176.656	155.324	0.000	855.740

D. Acquisition Strategy

The current CMWS subprogram Acquisition Program Baseline is dated September 2010, and the subprogram is fully funded to the CAPE ICE. The acquisition strategy includes buying CMWS B-kits (2002) to support the Army Force Generation (ARFORGEN) model 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 FY10, and fielding will begin in FY12.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU7: <i>COMMON MISSILE WARNING SYSTEM (CMWS)</i>

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU7: <i>COMMON MISSILE WARNING SYSTEM (CMWS)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS System Engineering Program Management	Various	PM ASE, HSV, AL:-	-	2.670		1.984		-		1.984	Continuing	Continuing	Continuing
Subtotal			-	2.670		1.984		-		1.984			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS Modeling and Simulation	Various	CAS, HSV, AL:-	-	0.455		1.200		-		1.200	Continuing	Continuing	Continuing
CMWS Enhanced Sensor Study & Evaluation	Various	TBD:-	-	12.000		8.095		-		8.095	Continuing	Continuing	Continuing
CMWS Tier 2/3 Threat Upgrades	Various	Various:-	-	2.000		0.815		-		0.815	Continuing	Continuing	Continuing
CMWS Development Engineering	Various	Various:-	-	-		-		-		-	Continuing	Continuing	Continuing
CMWS Gen 3 ECU ETC	Various	Various:-	-	-		-		-		-	Continuing	Continuing	Continuing
CMWS Gen 3 Providence Additional Phases	Various	TBD:-	-	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			-	14.455		10.110		-		10.110			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS Contractor Support	SS/FP	Various:-	-	-		-		-		-	Continuing	Continuing	Continuing
CMWS Matrix Support	Various	Various:-	-	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			-	-		-		-		-			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>				PROJECT VU7: <i>COMMON MISSILE WARNING SYSTEM (CMWS)</i>				
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	17.125		12.094		-		12.094			

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU7: <i>COMMON MISSILE WARNING SYSTEM (CMWS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CMWS System Dev/Tier 2 and 3 Upgrades (Base)	2	2011	4	2013
CMWS Enhanced Sensor Study & Evaluation	3	2012	1	2014
Start of CMWS Gen3 Fielding to support CMWS Assets	3	2012	3	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>				PROJECT VU8: <i>COMMON INFRARED COUNTER MEASURE (CIRCM)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
VU8: <i>COMMON INFRARED COUNTER MEASURE (CIRCM)</i>	-	0.177	97.441	-	97.441	120.950	139.662	81.764	68.724	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The CIRCM (next generation Advanced Threat Infrared Countermeasure (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 Infrared (IR) threats. The December 28, 2011 Defense Acquisition Executive Acquisition Decision Memorandum (DAE ADM) authorized entry into the Technology Development (TD) phase, designated the program a pre-Major Defense Acquisition Program (MDAP), and approved the updated exit criteria. CIRCM is funded to the CAPE ICE per DAE ADM, December 28, 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. The CIRCM B-kit is the mission kit (laser, pointer tracker, and controller) to achieve near spherical coverage for an aircraft.

Due to program decrements in FY12 the program is funded primarily with FY11 carry-over funds. Army deems program affordable.

Justification

RDT&E

Fiscal Year 2013 Base RDT&E dollars in the amount of \$97.441 million continues the CIRCM Technology Development phase and continues preparation for Engineering and Manufacturing Development phase (EMD).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: Development Efforts	-	0.177	97.441
Articles:		0	
Description: RDT&E dollars begins the design and development of the CIRCM system.			
FY 2012 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU8: <i>COMMON INFRARED COUNTER MEASURE (CIRCM)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
RDT&E dollars support the CIRCM Technology Development (TD) phase.			
<i>FY 2013 Plans:</i> RDT&E dollars for the CIRCM Technology Development phase and continue preparation for the Engineering and Manufacturing Development (EMD) phase. FY13 funding adjustment based on changing from Army Cost Position to CAPE (Cost Assessment and Program Evaluation) Independent Cost Estimate (ICE).			
Accomplishments/Planned Programs Subtotals	-	0.177	97.441

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APA Funding: <i>APA, BA 4 AZ3537</i>							8.335	94.746	71.656	0.000	174.737

D. Acquisition Strategy
After a full and open competition beginning in 2QFY12, two contractors will be selected and awarded Technology Development contracts. CIRCM will continue pre-MS B activities and enter into a competition for EMD in 3QFY14. MS B approval will be followed by award of EMD contract with priced options for LRIP and for the procurement of all technical data relevant to the performance of the EMD contract or life cycle of the CIRCM 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 Countermeasures intends to pursue full and open competition for the award of 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU8: <i>COMMON INFRARED COUNTER MEASURE (CIRCM)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CIRCM System Engineering Program Management	Various	PM ASE, HSV, AL:-	-	0.177		9.133		-		9.133	Continuing	Continuing	Continuing
Subtotal			-	0.177		9.133		-		9.133			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CIRCM Non-Recurring Engineering	C/CPFF	TBD:-	-	-		42.880		-		42.880	Continuing	Continuing	Continuing
CIRCM Development Facilities	Various	Various:-	-	-		8.390		-		8.390	Continuing	Continuing	Continuing
CIRCM Other R&D	Various	Various:-	-	-		16.353		-		16.353	Continuing	Continuing	Continuing
Subtotal			-	-		67.623		-		67.623			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CIRCM Support Equipment	Various	TBD:-	-	-		3.670		-		3.670	Continuing	Continuing	Continuing
Subtotal			-	-		3.670		-		3.670			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government System Testing & Evaluation	Various	CECOM - I2WD APG MD:-	-	-		5.120		-		5.120	Continuing	Continuing	Continuing
Other Testing	Various	CECOM - I2WD APG MD:-	-	-		11.895		-		11.895	Continuing	Continuing	0.000
Subtotal			-	-		17.015		-		17.015			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>			PROJECT VU8: <i>COMMON INFRARED COUNTER MEASURE (CIRCM)</i>					
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	0.177		97.441		-		97.441			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU8: <i>COMMON INFRARED COUNTER MEASURE (CIRCM)</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
CIRCM MS A					■																							
CIRCM TD PHASE									■	■	■	■																
CIRCM TD CONTRACT AWARD									■																			
CIRCM Bridge Option																												
CIRCM MS B																												
CIRCM EMD PHASE																												
CIRCM EMD CONTRACT AWARD																												
CIRCM MS C																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU8: <i>COMMON INFRARED COUNTER MEASURE (CIRCM)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CIRCM MS A	1	2012	1	2012
CIRCM TD PHASE	2	2012	1	2014
CIRCM TD CONTRACT AWARD	2	2012	2	2012
CIRCM Bridge Option	1	2014	3	2014
CIRCM MS B	3	2014	3	2014
CIRCM EMD PHASE	3	2014	4	2016
CIRCM EMD CONTRACT AWARD	3	2014	3	2014
CIRCM MS C	4	2016	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280A: <i>Joint Tactical Radio</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	0.755	-	-	-	-	72.541	26.982	26.403	26.849	Continuing	Continuing
162: <i>Network Enterprise Domain (NED)</i>	0.755	-	-	-	-	72.541	26.982	26.403	26.849	Continuing	Continuing

Note
Change Summary Explanation: FY 2013 funding was transferred to JTRS Navy PE 0604280N.

**The JTRS budget justification will be found in the Navy FY 2013 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 2013 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, scalable, 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, United Kingdom 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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280A: <i>Joint Tactical Radio</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	0.784	-	194.171	-	194.171
Current President's Budget	0.755	-	-	-	-
Total Adjustments	-0.029	-	-194.171	-	-194.171
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-194.171	-	-194.171
• Other Adjustments 1	-0.029	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604280A: <i>Joint Tactical Radio</i>				PROJECT 162: <i>Network Enterprise Domain (NED)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
162: <i>Network Enterprise Domain (NED)</i>	0.755	-	-	-	-	72.541	26.982	26.403	26.849	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 2013 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, scalable, 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 2011	FY 2012	FY 2013
Title: JTRS Network Enterprise Domain	0.755	-	-
Articles:	0		
Description: The Joint Tactical Radio System (JTRS) budget justification will be found in the Navy FY 2013 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 Accomplishments: Delivers portable, interoperable, mobile ad-hoc networking waveforms and network enterprise services to enhance tactical warfighting capabilities.			
Accomplishments/Planned Programs Subtotals	0.755	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	PE 0604280A: <i>Joint Tactical Radio</i>	162: <i>Network Enterprise Domain (NED)</i>

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

The JTRS budget justification will be found in the Navy FY 2013 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280A: <i>Joint Tactical Radio</i>	PROJECT 162: <i>Network Enterprise Domain (NED)</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SEE FOOTNOTE	TBD	TBD:TBD	0.755	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.755	-		-		-		-			

Remarks
 **The JTRS budget justification will be found in the Navy FY 2013 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 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total		Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.755	-		-		-		-				

Remarks

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604290A: <i>Mid-tier Networking Vehicular Radio (MNVR)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	-	12.636	-	12.636	29.341	9.897	-	-	Continuing	Continuing
DW1: <i>MID-TIER WIDEBAND NETWORKING VEHICULAR RADIO MNVR</i>	-	-	12.636	-	12.636	29.341	9.897	-	-	Continuing	Continuing

Note

The 2013 budget will be used to evaluate commercial Non-Developmental Item (NDI) Mid-Tier Networking Vehicular Radio (MNVR) systems meet the standard operational requirements prior to contract award.

A. Mission Description and Budget Item Justification

MNVR encourages an industry solution for a multi-channel vehicular radio which will host JTRS networking waveforms. The MNVR will be a Non-Development Item (NDI) procurement. The MNVR represents a subset of functionality which was demonstrated in the JTRS Ground Mobile Radios (GMR) development program. The MNVR will provide networking capability using the Wideband Networking Waveform (WNW) and Soldier Radio Waveform (SRW) to connect unmanned sensors to decision makers "On-The-Move" (OTM) which will significantly reduce the decision cycle. MNVR will provide a mobile internet-like Mobile Ad-Hoc Networking (MANET) capability; interoperable with current force radios through simultaneous and secure voice, data and video communications. MNVR will support Battle Command, sensor-to-shooter, sustainment and survivability applications in a full range of military operations on vehicular platforms.

B. Program Change Summary (\$ in Millions)

	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	12.636	-	12.636
Total Adjustments	-	-	12.636	-	12.636
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	12.636	-	12.636

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604290A: <i>Mid-tier Networking Vehicular Radio (MNVR)</i>	PROJECT DW1: <i>MID-TIER WIDEBAND NETWORKING VEHICULAR RADIO MNVR</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
DW1: <i>MID-TIER WIDEBAND NETWORKING VEHICULAR RADIO MNVR</i>	-	-	12.636	-	12.636	29.341	9.897	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Joint Tactical Radio System (JTRS) is the Department of Defense (DoD) family of common radios that will form the foundation of information radio frequency transmission for Joint Vision 2020. The Mid-Tier Networking Vehicular Radio (MNVR) Program complements the JTRS family of interoperable, modular software-defined radios which operate as nodes in a network to ensure secure wireless communication and networking services for mobile and fixed forces. The MNVR is a key element of the Global Information Grid (GIG) transport segment, in that it enables net-centric warfare at the tactical level. The MNVR will allow the GIG's internet-like capabilities to reach the tactical edge of the battlespace while meeting the mobility, security, and reliability needs of the DoD.

A. Mission Description and Budget Item Justification

MNVR encourages an industry solution for a multi-channel vehicular radio which will host JTRS networking waveforms. The MNVR will be a Non-Development Item (NDI) procurement. The MNVR represents a subset of functionality which was demonstrated in the JTRS Ground Mobile Radios (GMR) development program. The MNVR will provide networking capability using the Wideband Networking Waveform (WNW) and Soldier Radio Waveform (SRW) to connect unmanned sensors to decision makers "On-The-Move" (OTM) which will significantly reduce the decision cycle. MNVR will provide a mobile internet-like Mobile Ad-Hoc Networking (MANET) capability; interoperable with current force radios through simultaneous and secure voice, data and video communications. MNVR will support Battle Command, sensor-to-shooter, sustainment and survivability applications in a full range of military operations on vehicular platforms.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013
Title: Establishment of the Mid-Tier Networking Vehicular Radio (MNVR) Program	-	-	12.636
Description: The Program Office will test and evaluate that industry solutions to a Non-Development Item (NDI) solution support Joint Tactical Radio System (JTRS) waveform and user operational requirements.			
FY 2013 Plans: Support program management and customer test activities to execute a Non-Developmental Item (NDI) strategy for a mid-tier networking vehicular capability.			
Accomplishments/Planned Programs Subtotals	-	-	12.636

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604290A: <i>Mid-tier Networking Vehicular Radio (MNVR)</i>	PROJECT DW1: <i>MID-TIER WIDEBAND NETWORKING VEHICULAR RADIO MNVR</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• B51001: <i>Mid-Tier Networking Vehicular Radio (MNVR)</i>			86.219		86.219		99.750	160.980	170.528	Continuing	Continuing

D. Acquisition Strategy

The JTRS MNVR program is a Non-Developmental Item (NDI) acquisition approach resulting in a single award, Indefinite Delivery, Indefinite Quantity (IDIQ) contract with Firm Fixed Price (FFP) with delivery incentive for HW and Cost Plus Fixed Fee (CPFF) for logistics support services. Delivery incentives along with performance based payments will be utilized in order to incentivize the Contractor for early deliveries of the MNVR systems. MNVR assets shall be used to conduct an Initial Operational Test & Evaluation (IOT&E) for a Full Rate Production In-Process Review (FRP IPR), and a follow on full and open competition FFP contract will be pursued against the tested capabilities.

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604290A: <i>Mid-tier Networking Vehicular Radio (MNVR)</i>	PROJECT DW1: <i>MID-TIER WIDEBAND NETWORKING VEHICULAR RADIO MNVR</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Source Selection Performance Demonstration																												
DAB																												
Contract Award																												
Production																												
Delivery																												
Government Validation Test																												
IOT&E																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604290A: <i>Mid-tier Networking Vehicular Radio (MNVR)</i>	PROJECT DW1: <i>MID-TIER WIDEBAND NETWORKING VEHICULAR RADIO MNVR</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Source Selection Performance Demonstration	4	2012	2	2013
DAB	1	2013	1	2013
Contract Award	2	2013	2	2013
Production	2	2013	1	2014
Delivery	2	2014	2	2015
Government Validation Test	2	2014	3	2014
IOT&E	1	2015	1	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	24.322	7.405	5.694	-	5.694	2.489	1.260	1.327	1.367	Continuing	Continuing
B41: <i>CI/HUMINT Software Products (MIP)</i>	14.227	0.102	1.319	-	1.319	1.225	1.260	1.327	1.367	Continuing	Continuing
B51: <i>SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM</i>	10.095	7.303	4.375	-	4.375	1.264	-	-	-	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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
2040: <i>Research, Development, Test & Evaluation, Army</i>	PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>
BA 5: <i>Development & Demonstration (SDD)</i>	

(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.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	30.674	17.412	3.217	-	3.217
Current President's Budget	24.322	7.405	5.694	-	5.694
Total Adjustments	-6.352	-10.007	2.477	-	2.477
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	2.477	-	2.477
• Other Adjustments 1	-6.352	-10.007	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>				PROJECT B41: <i>CI/HUMINT Software Products (MIP)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
B41: <i>CI/HUMINT Software Products (MIP)</i>	14.227	0.102	1.319	-	1.319	1.225	1.260	1.327	1.367	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 collection and reporting system. CHARCS provides automation support for information collection, reporting, investigations, source & 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 collection 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 night vision photography & video, binocular, captured materiel tracking, Document & Media Exploitation (DOMEX), Digital Media Forensics software, Document Exploitation (DOCEX) software, and will interface with a handheld biometric capability for identification.

FY2013 Base amount of \$1.319 million will fund additional tests of the CHARCS V1.4 baseline software, software enhancements, CHARCS web-based capability, service packs, IAVA and DIA security updates and compliance.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: RDTE: Continue security and accreditation, enhancement and hardware integration testing of CHARCS software.	14.227	0.102	1.319	-	1.319
Articles:	0	0			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>	PROJECT B41: <i>CI/HUMINT Software Products (MIP)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Description: Funds software testing, development and maintenance, PMO support and systems testing.</p> <p>FY 2011 Accomplishments: Funded \$5681K Base continued development of improved collection and reporting software functionality, and 446K continued test and security accreditation efforts. OCO: \$8100K funded research and development of Document and Media Exploitation (DOMEX) tools.</p> <p>FY 2012 Plans: \$102K will fund additional tests of the CHARCS V1.4 baseline software, software enhancements, service packs, IAVA and DIA security updates and compliance.</p> <p>FY 2013 Base Plans: FY2013 Base amount of \$1.319 million will fund additional tests of the CHARCS V1.4 baseline software, software enhancements, CHARCS web-based capability, service packs, IAVA and DIA security updates and compliance.</p>					
Accomplishments/Planned Programs Subtotals	14.227	0.102	1.319	-	1.319

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• BK5275: <i>CI HUMINT AUTO REPRTING AND COLL (CHARCS) (MIP)</i>	54.751	3.493	7.077	6.516	13.593		7.392	7.604	7.782	Continuing	Continuing

D. Acquisition Strategy

Program capability documentation is in the process of being updated to include Inc 2 requirements in CHARCS CPD Increment 1, Revision 1, which will support the movement of select capabilities into the revised capabilities document. PD CHARCS is a post-Milestone C program, scheduled to deliver software version v1.4 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 CHARCS CPD Increment I, Revision 1. PD is continuously evaluating and assessing existing COTS, GOTS, and QRCs that support CHARCS CPD Inc 1, Revision 1.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>	PROJECT B41: <i>CI/HUMINT Software Products (MIP)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	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	3.790	-		-		-		-	0.000	3.790	0.000
Subtotal			3.790	-		-		-		-	0.000	3.790	0.000

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CHARCS Software Development	MIPR	CECOM Software Engineering Center:Fort Huachuca, Arizona	14.988	-		1.219		-		1.219	Continuing	Continuing	Continuing
DOMEX Tools	MIPR	National Ground Intelligence Center:Charlottesville, VA	8.100	-		-		-		-	0.000	8.100	Continuing
Subtotal			23.088	-		1.219		-		1.219			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition and Engineering Services- Program Office Support	MIPR	CACI Technologies, Inc.:Chantilly, VA	0.857	-		-		-		-	Continuing	Continuing	0.000
Subtotal			0.857	-		-		-		-			0.000

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>	PROJECT B41: <i>CI/HUMINT Software Products (MIP)</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
V1.4 Government Acceptance Testing (GAT)					■																							
V1.4 ATEC Testing - Field Operating Agency (FOA)					■																							
CHARCS Interoperability Testing												■																
V1.4 Operational Testing												■																

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>	PROJECT B41: <i>CI/HUMINT Software Products (MIP)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
V1.4 Government Acceptance Testing (GAT)	2	2012	2	2012
V1.4 ATEC Testing - Field Operating Agency (FOA)	2	2012	2	2012
CHARCS Interoperability Testing	4	2012	4	2012
V1.4 Operational Testing	4	2012	4	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>	PROJECT B51: <i>SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
B51: <i>SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM</i>	10.095	7.303	4.375	-	4.375	1.264	-	-	-	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).

FY13 Base RDTE dollars in the amount of \$4.375 million will complete the Engineering and Manufacturing Development (EMD) and testing activities, providing deployable automated translation software.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Product Development (PD)	8.616	6.024	2.308	-	2.308
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 2011 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 2012 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>	PROJECT B51: <i>SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
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 2013 Base Plans: Will continue 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						
Title: Test and Evaluation of MFLTS Capabilities	Articles:	-	0.100 0	0.881	-	0.881
Description: Testing of the automated language translation capabilities using established metrics, collected standard data sets, and standardized objective validation process						
FY 2012 Plans: Testing of the automated language translation capabilities using established metrics, collected standard data sets, and standardized objective validation process						
FY 2013 Base Plans: Will continue test of the automated language translation capabilities using established metrics, collected standard data sets, and standardized objective validation process						
Title: Data Collection of Vocabulary and Test Sets	Articles:	0.308 0	-	-	-	-
Description: Development of the vocabulary collection and testing sets in the prioritized languages						
FY 2011 Accomplishments: Completion of the vocabulary collection and testing sets in the prioritized languages						
Title: PD Support and Management Services	Articles:	1.171 0	1.179 0	1.186	-	1.186
Description: Program Support and Matrixed services at other Government activities						
FY 2011 Accomplishments:						

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>	PROJECT B51: <i>SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Continued program support and matrixed services at other Government activities					
<i>FY 2012 Plans:</i> Continuing to provide program support and matrixed services at other Government activities					
<i>FY 2013 Base Plans:</i> Will continue to provide program support and matrixed services at other Government activities					
Accomplishments/Planned Programs Subtotals	10.095	7.303	4.375	-	4.375

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• B88605: <i>Machine Foreign Language Translation System - MFLTS</i>							6.900			0.000	13.943

D. Acquisition Strategy

The MFLTS acquisition strategy for the Technology Development (TD) Phase is to develop an open software architecture prototype 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.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>	PROJECT B51: <i>SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support	MIPR	Various:Ft. Belvoir, VA	1.171	1.108		1.186		-		1.186	0.000	3.465	0.000
Subtotal			1.171	1.108		1.186		-		1.186	0.000	3.465	0.000

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development Contract	MIPR	Raytheon BBN:Cambridge, MA	6.554	5.446		-		-		-	0.000	12.000	0.000
Engineering Development	MIPR	Various:Various	-	-		1.718		-		1.718	0.000	1.718	0.000
Subtotal			6.554	5.446		1.718		-		1.718	0.000	13.718	0.000

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	Various:Various	2.062	0.578		0.590		-		0.590	0.000	3.230	0.000
Subtotal			2.062	0.578		0.590		-		0.590	0.000	3.230	0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation Activities	MIPR	USA Test and Eval Command:Alexandria, VA	-	0.171		0.881		-		0.881	0.000	1.052	0.000
Data Collection	MIPR	Army Research Laboratory:Adelphi, MD	0.308	-		-		-		-	0.000	0.308	0.000
Subtotal			0.308	0.171		0.881		-		0.881	0.000	1.360	0.000

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>	PROJECT B51: <i>SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
TD Phase Contract Awards				■																								
Preliminary Design Review (PDR)								■																				
Initial Capability - MS B											■																	
Initial Capability - EMD Phase											■	■	■	■	■	■												
CDR											■																	
LUT											■																	
Initial Capability - MS C															■													
Production Contract Award															■													
Initial Capability - Limited Deployment (LD)															■	■												
IOTE															■	■												
IOC																■												
Initial Capability - Full Rate Production (FRP)																■	■	■	■	■								
Full Deployment Decision																■												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>	PROJECT B51: <i>SEQUOYAH - FOREIGN LANGUAGE TRANSLATION SYSTEM</i>

Schedule Details

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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
2040: <i>Research, Development, Test & Evaluation, Army</i>			PE 0604328A: <i>TRACTOR CAGE</i>								
BA 5: <i>Development & Demonstration (SDD)</i>											
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	17.914	26.552	32.095	-	32.095	25.630	21.205	27.046	19.850	Continuing	Continuing
C71: <i>DC71</i>	17.914	26.552	32.095	-	32.095	25.630	21.205	27.046	19.850	Continuing	Continuing

Note

Below Threshold Reprogramming due to change in requirements which did not allow for execution of funds.

A. Mission Description and Budget Item Justification

The details of this program are reported in accordance with Title 10, United States Code, Section 119(a)(1).

B. Program Change Summary (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	23.194	26.577	23.264	-	23.264
Current President's Budget	17.914	26.552	32.095	-	32.095
Total Adjustments	-5.280	-0.025	8.831	-	8.831
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-5.280	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	8.831	-	8.831
• Other Adjustments 1	-	-0.025	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604328A: <i>TRACTOR CAGE</i>	PROJECT C71: <i>DC71</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
C71: DC71	17.914	26.552	32.095	-	32.095	25.630	21.205	27.046	19.850	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not Applicable

A. Mission Description and Budget Item Justification

The details of this program are reported in accordance with Title 10, United States Code, Section 119(a)(l)

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: Not Applicable	17.914	26.552	32.095
Articles:	0	0	
Description: Not Applicable			
FY 2011 Accomplishments: Not Applicable			
FY 2012 Plans: Not Applicable			
FY 2013 Plans: Not Applicable			
Accomplishments/Planned Programs Subtotals	17.914	26.552	32.095

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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	73.008	83.395	96.478	-	96.478	59.408	50.594	47.430	39.808	Continuing	Continuing
033: <i>ADV CREW SVC WPN</i>	5.500	1.698	-	-	-	-	-	-	-	Continuing	Continuing
S58: <i>SOLDIER ENHANCEMENT PROGRAM</i>	4.677	3.272	3.278	-	3.278	4.125	4.058	4.239	4.310	Continuing	Continuing
S60: <i>CLOTHING & EQUIPMENT</i>	9.365	6.316	5.537	-	5.537	1.899	1.947	2.082	2.117	Continuing	Continuing
S61: <i>ACIS ENGINEERING DEVELOPMENT</i>	9.997	10.936	17.175	-	17.175	18.817	21.772	12.516	12.642	Continuing	Continuing
S62: <i>Counter-Defilade Target Engagement - SDD</i>	23.548	35.980	34.412	-	34.412	1.983	-	-	-	Continuing	Continuing
S63: <i>SMALL ARMS IMPROVEMENT</i>	18.705	18.150	19.617	-	19.617	18.289	14.560	14.601	14.740	Continuing	Continuing
S70: <i>PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)</i>	1.216	3.060	4.517	-	4.517	1.132	1.104	1.141	1.193	Continuing	Continuing
VS5: <i>SOLDIER PROTECTIVE EQUIPMENT</i>	-	3.983	11.942	-	11.942	13.163	7.153	12.851	4.806	Continuing	Continuing

Note

Change Summary Explanation:

Fiscal Year 2011: Congressional Reduction of \$10.000 million to Project S62, Counter Defilade Target Engagement (CDTE) effort for Milestone B Delay. Omnibus reprogramming of \$5.000 million from Weapons and Tracked Combat Vehicle, Army (WTCV,A) Standard Study Number (SSN) G12800 to project 033 for XM806 development effort.

Fiscal Year 2012: Congressional Reduction of \$8.000 million to Project S61 for high concurrency of incremental efforts. Congressional Increase of \$16.046 million to Project S62 for Army requested transfer for Engineering and Manufacturing Development Testing from WTCV,A, line 17. Congressional Increase of \$1.700 million to Project 033 for Army requested transfer for re-testing of Lightweight .50 Caliber Machine Gun following a parts failure from WTCV,A line 20.

Fiscal Year 2013: Program increase of \$33.809 million to Project S62 for Counter Defilade Target Engagment efforts, program increase of \$7.954 million to Project VS5 for Soldier Protective Equipment engineering development efforts, and program increase of \$5.256 million to Project S63 for Small Arms Improvement engineering development efforts.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY
2040: Research, Development, Test & Evaluation, Army
BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE
PE 0604601A: Infantry Support Weapons

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.

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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>
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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.

B. Program Change Summary (\$ in Millions)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	80.337	73.728	48.553	-	48.553
Current President's Budget	73.008	83.395	96.478	-	96.478
Total Adjustments	-7.329	9.667	47.925	-	47.925
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.772	-			
• Adjustments to Budget Years	-0.557	-0.079	0.906	-	0.906
• Other Adjustments 1	-5.000	9.746	47.019	-	47.019

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT 033: <i>ADV CREW SVC WPN</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
033: <i>ADV CREW SVC WPN</i>	5.500	1.698	-	-	-	-	-	-	-	Continuing	Continuing
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 results 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 increases the warfighter's lethality while significantly reducing tactical load and supportability costs. The new .50 Caliber weapon reduces weight and recoil, and eliminates manual adjustment of headspace and timing.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: Integrated Logistics Support (ILS)</p> <p align="right">Articles:</p> <p>Description: Description: Provide ILS for the Lightweight .50 Caliber Machine Gun.</p> <p>FY 2011 Accomplishments: Completed ILS technical documentation of redesigned weapon (i.e. drafted operator and maintenance technical manuals, and prepared for Logistics Demonstration).</p> <p>FY 2012 Plans: Update ILS technical documentation, conduct logistics demonstrations and provisioning conferences for the weapon. Develop ILS technical documentation for both the Blank Ammunition Firing Adapter (BFA) and the cradle. Conduct logistics demonstration for the BFA.</p>	0.250 0	0.200 0	-	-	-
<p>Title: Weapon System Design Test</p> <p align="right">Articles:</p> <p>Description: Description: Conduct weapon system design test.</p> <p>FY 2011 Accomplishments: Completed weapon redesign and build, conducted contractor testing to validate weapon redesign. Completed Government design and build of the iron sight, cradle and deflector.</p> <p>FY 2012 Plans:</p>	5.250 0	1.498 0	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT 033: <i>ADV CREW SVC WPN</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Conduct Pre-Production Qualification Test to validate weapon design parameters and reliability. Conduct Limited User Test to evaluate operational effectiveness of the XM806 weapon system. Complete BFA design, build and test.					
Accomplishments/Planned Programs Subtotals	5.500	1.698	-	-	-

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• G12800 Lightweight .50 Caliber MG: <i>Lightweight .50 Caliber Machine Gun (W&TCV G12800)</i>		19.357	19.756	5.427	25.183		33.702	32.231	32.769	0.000	179.615

D. Acquisition Strategy

The Lightweight .50 Caliber Machine Gun is developed in support of the US Army Infantry Center (USAIC) Capability Production Document (CPD) for Enhanced .50 Caliber Machine Gun (M2A1). Milestone C is scheduled for third quarter FY2012. The development contractor is General Dynamics Armament and Technical Products (GDATP) of Burlington, Vermont. Milestone B was approved by the Milestone Decision Authority (MDA) - PEO Soldier, on July 8, 2008.

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.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S58: <i>SOLDIER ENHANCEMENT PROGRAM</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
S58: <i>SOLDIER ENHANCEMENT PROGRAM</i>	4.677	3.272	3.278	-	3.278	4.125	4.058	4.239	4.310	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Soldier Enhancement Program (SEP) 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. Projects are generally completed in three years or less.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Soldier Enhancement Program (SEP).	3.595	2.130	2.104	-	2.104
Articles:	0	0			
Description: Reviews candidate capability products through market surveys and product evaluations.					
FY 2011 Accomplishments: Evaluated and procured prototypes and tested the following Soldier equipment and weapons items: M26 Modular Assessor Shotgun System (MASS); Grenade Laser Range Finder; Sniper Tripod; Compact M110 Semi-Automatic Sniper System (SASS); Sniper Weapons Collimator; Sniper Quick Fire Sight; Parachute Oxygen Mask.					
FY 2012 Plans: Evaluate and procure prototypes and/or test Soldier equipment and weapons items. Up to 30+ proposals from Soldiers, Units, Industry and Academia. Will be submitted and reviewed by TRADOC and Material Developer (Program Executive Office (PEO)). SEP criteria will be applied and then submitted to a Council of Colonels (CoC) Executive Council to see if new capability initiatives will be approved for test and evaluation.					
FY 2013 Base Plans: Evaluate and procure prototypes and/or test Soldier equipment and weapons items. Up to 30+ proposals from Soldiers, Units, Industry and Academia will be submitted and reviewed by Training and Doctrine Command (TRADOC) and Material Developer, Program Executive Office (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: Engineering Support.	0.676	0.641	0.617	-	0.617

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S58: <i>SOLDIER ENHANCEMENT PROGRAM</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p align="right">Articles:</p> <p>Description: In-house engineering support and integration services, conduct technical evaluations and program reviews.</p> <p>FY 2011 Accomplishments: Provided in-house engineering support and integration services and conducted technical evaluations/program reviews for the following systems: Medical Bag, 3D Camouflage Flotation Collar; Field Tarp Modifications; Explosive Detector; Wireless Intercom; Body Heat Battery Charger; Rifle Sling; Breeching Tool; Strobe Light; Clip-On Thermal Imager; Airborne Goggle; 7 Day Bandage; Weapons Case; Field Tarp Mods; Weapons Covers; Rebar Cutter; Insect Repellent and Leader book.</p> <p>FY 2012 Plans: Continue to provide in-house engineering support and integration services and conduct technical evaluations/program reviews. Engineering capability is maintained for up to ten (10) new initiatives from submitted Soldier capability proposals such as: Multi-Shot Handheld, Sniper Mirage Mitigating Device and Advanced Emergency Bailout Parachute.</p> <p>FY 2013 Base Plans: Will continue to provide in-house engineering support and integration services and will conduct technical evaluations/program reviews. Engineering capability will be maintained for an expected 10-12 new initiatives from submitted Soldier capability proposals.</p>	0	0			
<p>Title: Market Surveys and Evaluations.</p> <p align="right">Articles:</p> <p>Description: Conduct market surveys and/or evaluations on new items such as: Medical Bag, 3D Camouflage Flotation Collar; Field Tarp Modifications; Explosive Detector; Wireless Intercom; Body Heat Battery Charger; Rifle Sling; Breeching Tool; Strobe Light; Clip-On Thermal Imager; Airborne Goggle; 7 Day Bandage; Weapons Case; Field Tarp Mods; Weapons Covers; Rebar Cutter; Insect Repellent and Leader book to commence development and demonstration. New items initiated will continue through evaluation/procurement of new prototypes.</p> <p>FY 2011 Accomplishments: Conducted market surveys and evaluations on Medical Bag, 3D Camouflage Flotation Collar; Field Tarp Modifications; Explosive Detector; Wireless Intercom; Body Heat Battery Charger; Rifle Sling; Breeching Tool;</p>	0.406 0	0.501 0	0.557	-	0.557

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S58: <i>SOLDIER ENHANCEMENT PROGRAM</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Strobe Light; Clip-On Thermal Imager; Airborne Goggle; 7 Day Bandage; Weapons Case; Field Tarp Mods; Weapons Covers; Rebar Cutter; Insect Repellent and Leader book. FY 2012 Plans: Market survey capability is available up to ten (10) new proposals for Soldier capabilities which could include: Medical Bag, 3D Camouflage Flotation Collar; Field Tarp Modifications; Explosive Detector; Wireless Intercom; Body Heat Battery Charger; Rifle Sling; Breeching Tool; Strobe Light; Clip-On Thermal Imager; Airborne Goggle; 7 Day Bandage; Weapons Case; Field Tarp Mods; Weapons Covers; Rebar Cutter; Insect Repellent and Leader book. FY 2013 Base Plans: Market survey capability will be available for up to 10-12 new proposals for Soldier capabilities and Advanced Sniper Accessory Kit (ASAK) components.					
Accomplishments/Planned Programs Subtotals	4.677	3.272	3.278	-	3.278

C. Other Program Funding Summary (\$ in Millions)										
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete Total Cost</u>
• OPA3 MA6800: <i>Soldier Enhancement - Other Support Equipment - MA6800</i>	5.385	9.591	6.522		6.522		1.698	0.324	0.330	Continuing Continuing
• OPA2 BA5300: <i>Soldier Enhancement - Comms & Electronics Equipment - BA5300</i>	5.097	1.843	1.843		1.843		1.803	1.861	1.893	Continuing Continuing
• WTCV GC0076: <i>Soldier Enhancement - Smalls Arms Weapons - GC0076</i>	4.018	2.453	2.378		2.378		2.444	2.530	2.572	Continuing Continuing

D. Acquisition Strategy

The Soldier Enhancement Program (SEP) focuses on Commercial Off The Shelf (COTS) and Government Off The Shelf (GOTS) initiatives, Soldier capability enhancements and integration efforts that lend themselves to accelerated acquisition 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., Other Procurement Army (OPA) and Wheeled Tracked Combat Vehicles (WTCV).

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S58: <i>SOLDIER ENHANCEMENT PROGRAM</i>

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army										DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>				PROJECT S58: <i>SOLDIER ENHANCEMENT PROGRAM</i>					

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	PEO Soldier:Ft. Belvoir, VA	11.146	0.405		0.461		-		0.461	Continuing	Continuing	Continuing
Subtotal			11.146	0.405		0.461		-		0.461			

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

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	PEO Soldier:Ft. Belvoir, VA	35.887	1.610		1.588		-		1.588	Continuing	Continuing	Continuing
Subtotal			35.887	1.610		1.588		-		1.588			

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)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	PEO Soldier:Ft. Belvoir, VA	6.424	0.466		0.420		-		0.420	Continuing	Continuing	Continuing
Subtotal			6.424	0.466		0.420		-		0.420			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	PEO Soldier:Ft. Belvoir, VA	11.806	0.791		0.809		-		0.809	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S58: <i>SOLDIER ENHANCEMENT PROGRAM</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal			11.806	0.791		0.809		-		0.809				

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

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	65.263	3.272		3.278		-		3.278			

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S60: <i>CLOTHING & EQUIPMENT</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
S60: <i>CLOTHING & EQUIPMENT</i>	9.365	6.316	5.537	-	5.537	1.899	1.947	2.082	2.117	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 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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: Individual Soldier Ballistic Protection Moves to Program Element PE 0604601 VS5 in FY12</p> <p align="right">Articles:</p> <p>Description: Increase the Warfighter lethality and mobility, by optimizing Soldier protection while effectively managing all life cycle aspects of Personal Protective Equipment (PPE).</p> <p>FY 2011 Accomplishments: Completed incremental improvements and design work to the soft armor component (IOTV) of IBA system. Improvements transitioned to production in FY12 include the quick-release technology for improved functionality and other design features that improve mobility and functionality. Continued design efforts to improve functionality for small statured Soldiers and transferred through engineering changes into production in FY12. Entered into a Milestone B for the Family of Concealable Body Armor in 3Q FY11 and awarded prototype and test contracts in 4Q FY11. Continued to leverage, analyze and apply lessons-learned from emerging blast-testing data to new pelvic protection systems in support of Joint Urgent Operational Need (JUON CC-0457) for Pelvic Protection for Dismounted Warfighter. Completed system reliability study for the Non-Destructive Test Equipment (NDTE). Continued Enhanced Combat Helmet (ECH) First Article Testing through 4Q FY11 resulting in projected production and fielding decision by 1Q FY12. Completed development of test apparatus and procedures for improved scratch and fog resistant coatings for ballistic eyewear. Continued to assess emerging laser protection technologies.</p>	5.199 0	-	-	-	-
<p>Title: Soldier Uniforms and Clothing</p> <p align="right">Articles:</p>	2.107 0	3.331 0	3.537	-	3.537

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S60: <i>CLOTHING & EQUIPMENT</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
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Description: Develop and provide superior and sustainable integrated clothing for the Soldier in a rapidly changing global environment.

FY 2011 Accomplishments:
Tested Flame Resistant (FR) materials for Fuel Handler Coveralls and alternate FR fabrics for FR Army Combat Uniform (FR ACUs). Conducted user evaluation of clothing bag items including an improved duffel bag and Army Combat Uniform - Alternate (ACU-A) to improve fit for small statured Soldiers. Qualified new duffel bag, washcloth, towel, and Army Service Uniform (ASU) shirt for clothing bag. Completed Army Combat Glove standardized product description. Processed system Engineering Change Proposals and technology insertion to update components of Generation III Extended Cold Weather Clothing System (ECWCS) to provide FR protection in cold weather clothing for deployers. Evaluated improved Physical Fitness Uniform (IPFU) trunks and T-shirts.

FY 2012 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. Update Key Performance Parameters (KPPs) and conduct user evaluation of FREE program of record materiel solution with transition into 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 FY13. Down select the program of record material solution for the Mountain Combat Boot with MS C and transition to sustainment in FY13. Conduct materiel change efforts to improve the durability and comfort of tactical and environmental gloves.

FY 2013 Base Plans:
Will continue to refine designs and incorporate new materials/technology into clothing bag items, including the Improved Physical Fitness Uniform (IPFU) ensemble and the All-weather coat. Will conduct user evaluation and complete testing of the Glove Enhancement Initiative to improve functionality of Army gloves and consolidate task-specific handwear. Will initiate improvement to the women's Maternity Camouflage Uniforms to correct identified fit deficiencies. Will complete technical development of printing and color shade standards required for all uniform fabrics and findings to implement the Phase IV effort for a family of global camouflage pattern.

Title: Individual Equipment	2.059	2.985	2.000	-	2.000
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S60: <i>CLOTHING & EQUIPMENT</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Articles:	0	0			
Description: Develop and provide superior and sustainable integrated individual equipment, for the Soldier, in a rapidly changing global environment.					
FY 2011 Accomplishments: Continued to refine design and incorporate new material/technology that pertains to form, fit, and function of the load bearing equipment. Initiated product improvement of the Modular Lightweight Load-carrying Equipment (MOLLE) medical bag. Continued to serve the Airborne community by developing equipment that is tailorable to Airborne operations. Completed Operational Test of the Advanced Emergency Bailout Parachute (AEBP). Purchased Advanced Ram Air Parachute (ARAPS) test items and conducted and completed Design Validation (DV) testing.					
FY 2012 Plans: 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 FY13.					
FY 2013 Base Plans: Will continue to refine design and incorporate new material/technologies that pertain to form, fit and function of load bearing equipment with intent to lighten Soldier load. Will complete technical development of printing and color shade standards required for all equipment fabrics and findings to implement the Phase IV effort for a family of global camouflage. Will conduct user evaluation of the chemical/biological functionality of the On-The-Move Hydration System. Will complete Limited User Evaluation for Cold Weather Stove and Mountaineering Kits with MS C planned for FY14.					
Accomplishments/Planned Programs Subtotals	9.365	6.316	5.537	-	5.537

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• Clothing and Individual Eqp S53: <i>RDTE, 0603827.S53, Clothing and Equipment</i>	7.106	6.985	7.163		7.163		6.657	5.376	5.467	Continuing	Continuing

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S60: <i>CLOTHING & EQUIPMENT</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Central Funding and Fielding: <i>OMA, 121017, Central Funding and Fielding</i>	71.429	72.171	75.961		75.961		124.365	125.670	127.008	Continuing	Continuing
• Advanced Tactical Parachute System: <i>OPA, MA7801, Advanced Tactical Parachute System</i>	41.591	52.185	45.497		45.497		44.234	42.016	40.234	Continuing	Continuing

D. Acquisition Strategy

Acquisition strategies for these programs 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 are completed in more than 24-48 months from inception to Type Classification; and (3) fully integrated development that requires substantial RDT&E funding and is 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S60: <i>CLOTHING & EQUIPMENT</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
In-House Support	Various	PM SPIE:Various	6.825	0.750		0.478		-		0.478	Continuing	Continuing	Continuing
Subtotal			6.825	0.750		0.478		-		0.478			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	Various	NSRDEC:Natick, MA	12.169	1.075		1.000		-		1.000	Continuing	Continuing	Continuing
Development Contracts	Various	Various:Various	34.814	2.098		2.000		-		2.000	Continuing	Continuing	Continuing
Subtotal			46.983	3.173		3.000		-		3.000			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Misc Support Costs	Various	Various:Various	13.723	0.973		0.859		-		0.859	Continuing	Continuing	Continuing
Subtotal			13.723	0.973		0.859		-		0.859			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	Various	Various:Various	13.638	1.420		1.200		-		1.200	Continuing	Continuing	Continuing
Subtotal			13.638	1.420		1.200		-		1.200			

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			81.169	6.316		5.537		-		5.537			

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S60: <i>CLOTHING & EQUIPMENT</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
FoCBA transitioned to EMD			■																									
Award FoCBA Prototype & Test Contract				■																								
ECH FAT Testing		■	■																									
Alternate Camo Pattern OT (Phase IV)						■	■	■																				
Transition GEN III ECWCS Product Improvement to Sustainment											■																	
Moisture wicking IPFU T Shirt / Trunk Product Improvement						■	■	■	■	■	■	■																
Conduct FREE User Eval						■	■	■																				
Transition FREE to Production											■																	
Modular Boot User Eval						■	■	■																				
Modular Boot transition to Production											■																	
ARAPS DV Testing			■	■																								
Cold Weather Stove User Eval											■	■																
Cold Weather Stove MS-C															■													
Mountaineering Kit User Eval											■	■																
Mountaineering Kit MS-C															■													

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S60: <i>CLOTHING & EQUIPMENT</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FoCBA transitioned to EMD	3	2011	3	2011
Award FoCBA Prototype & Test Contract	4	2011	4	2011
ECH FAT Testing	2	2011	4	2011
Alternate Camo Pattern OT (Phase IV)	1	2012	4	2012
Transition GEN III ECWCS Product Improvement to Sustainment	1	2013	1	2013
Moisture wicking IPFU T Shirt / Trunk Product Improvement	1	2012	4	2013
Conduct FREE User Eval	1	2012	4	2012
Transition FREE to Production	1	2013	1	2013
Modular Boot User Eval	1	2012	4	2012
Modular Boot transition to Production	1	2013	1	2013
ARAPS DV Testing	4	2011	4	2012
Cold Weather Stove User Eval	1	2013	4	2013
Cold Weather Stove MS-C	1	2014	1	2014
Mountaineering Kit User Eval	1	2013	4	2013
Mountaineering Kit MS-C	1	2014	1	2014

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>				PROJECT S61: <i>ACIS ENGINEERING DEVELOPMENT</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
S61: <i>ACIS ENGINEERING DEVELOPMENT</i>	9.997	10.936	17.175	-	17.175	18.817	21.772	12.516	12.642	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project conducts Engineering Manufacturing Development (EMD) for Army aircrew safety, survivability, and human performance. These funds completed the Air Warrior Encrypted Aircraft Wireless Intercom System qualification testing and resource the integration and qualification of the Air Soldier System (Air SS) program. The Air SS addresses capability gaps identified during combat operations in Iraq and Afghanistan including the effects of weight and bulk, limited situational awareness, and lack of functionally integrated aircrew 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 addresses these and other gaps defined in the Air SS CDD using a Soldier as a System approach to provide improved situational awareness; provide terrain, weather, threat, and obstacle avoidance information to reduce aircraft mishaps and fatalities; resolve the lack of a common aircrew helmet with modern heads-up display technologies; increase the Soldier's ability to operate safely in degraded visual environments and extreme environmental conditions; and provide the capability to perform missions up to 11.0 hours in hot/humid environments and under chemical/biological threat conditions. The Air SS follows an evolutionary acquisition approach with two sub-increments that build to the full capability. Sub-increment 1a provides optimized survival equipment and integrated lightweight body armor reducing bulk and increasing mobility and crew member performance; layered clothing ensemble with active thermal regulation and chemical/biological protection for aviation Soldiers in all aircraft platforms; an integrated Soldier-worn electronics suite with integrated portable power that combines the functionality of bulky and separate situational/spatial awareness and life support systems and their separate batteries. Sub-increment 1b is the final and full Air SS capability 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 1b provides improved safety and Soldier survivability, increased situational awareness, and reduced pilot/crew member workload through an integrated gear carriage and extraction system that builds upon the Air SS capabilities developed under sub-increment 1a. Sub-increment 1b also enhances the previous Air SS integrated electronics suite by adding an integrated wireless aircraft and survival communications capability to reduce weight and bulk; a wide field of view high resolution day/night helmet mounted display for the AH-64 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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Aircrew Integrated Systems (ACIS) Engineering Development	9.997	10.936	17.175	-	17.175
Articles:	0	0			
Description: Integration, evaluation, testing, and qualification of Air Soldier System multi-phased improvements as technologies mature.					
FY 2011 Accomplishments:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S61: <i>ACIS ENGINEERING DEVELOPMENT</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Transitioned Air Soldier System sub-increment 1a advanced development improvements into engineering manufacturing development integration, maturation, and evaluation of improved cooling and integrated wearable power supply system, and other sub-increment 1a capabilities. Completed Encrypted Aircraft Wireless Intercom System testing and qualification.</p> <p>FY 2012 Plans: Air Soldier System sub-increment 1a. Integration and evaluation of improved cooling and integrated wearable power supply system. Begin head tracking, Soldier display, aircraft-mounted mission display, Soldier computer module integration and evaluation, integrated layered clothing system, and aircraft integration.</p> <p>FY 2013 Base Plans: Will continue Air Soldier System improvements, integration, evaluation, testing, and qualification including head tracking, Soldier display, aircraft mounted mission display, Soldier computer module, integrated layered clothing system, and aircraft integration.</p>					
Accomplishments/Planned Programs Subtotals	9.997	10.936	17.175	-	17.175

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• Aircrew Integrated Sys Adv Dev: <i>RDTE, A PE 0603827A, PROJ S51 - Adv Dev</i>	0.156	0.136	0.141		0.141		0.164	0.157	0.160	Continuing	Continuing
• Aircrew Integrated Systems: <i>Aircraft Procurement, Army SSN AZ3110 - ACIS</i>	52.125	62.746	77.381		77.381		16.347	14.080	0.008	Continuing	Continuing

D. Acquisition Strategy

The Engineering Manufacturing Development (EMD) phase efforts for Aircrew Integrated Systems program include completion of the Air Warrior Encrypted Aircraft Wireless Intercom System (EAWIS) testing and qualification and continuation of the Air Soldier System integration, evaluation, testing, and qualification as technologies mature. The EAWIS is a hands-free communication device using radio signals for aircrew communication and interface with aircraft intercom and radios. The Air Soldier System follows an evolutionary acquisition approach with two sub-increments that build to the full capability. Through the two sub-increments, the Air Soldier System program focuses on reducing weight and bulk while integrating capabilities tailorable for aircrew on all Army aircraft platforms including optimized survival equipment, suite of integrated Soldier-worn electronics, integrated wireless aircraft and survival communications capability, and reduced clothing layers. A day and night heads-up display, external audio, don in flight CB protection and enhanced laser eye protection against multiple wavelengths of laser threats will be integrated

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	PE 0604601A: <i>Infantry Support Weapons</i>	S61: <i>ACIS ENGINEERING DEVELOPMENT</i>

onto the common HGU-56/P helmet. Integration, testing, and qualification efforts are accomplished through a combination of contracts with industry and 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S61: <i>ACIS ENGINEERING DEVELOPMENT</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Administration	Allot	Various Government:Huntsville, Alabama	1.503	0.359		0.278		-		0.278	Continuing	Continuing	Continuing
Subtotal			1.503	0.359		0.278		-		0.278			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Warrior and Air Soldier System Development	C/CPFF	Various Government:Various Locations	29.983	9.630		14.329		-		14.329	Continuing	Continuing	Continuing
Subtotal			29.983	9.630		14.329		-		14.329			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	RO	Various Government:Various Locations	1.137	0.947		0.754		-		0.754	Continuing	Continuing	Continuing
Subtotal			1.137	0.947		0.754		-		0.754			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	RO	Various Activities:Various Locations	6.035	-		1.814		-		1.814	Continuing	Continuing	Continuing
Subtotal			6.035	-		1.814		-		1.814			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>				PROJECT S61: <i>ACIS ENGINEERING DEVELOPMENT</i>				
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	38.658	10.936		17.175		-		17.175			

Remarks

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S61: <i>ACIS ENGINEERING DEVELOPMENT</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Air Soldier System System Dev and Dem and Qualification Testing	1	2012	4	2017
Air Soldier System Milestone B	1	2012	1	2012
Air Soldier System Preliminary Design Review (PDR), Sub-increment 1a	4	2012	4	2012
Air Soldier System Critical Design Review (CDR), Sub-increment 1a	3	2013	3	2013
Air Soldier System Developmental Testing (DT), Sub-increment 1a	2	2014	2	2014
Air Soldier System Preliminary Design Review (PDR), Sub-increment 1b	2	2014	2	2014
Air Soldier System Initial Operational Test & Evaluation(IOT&E),Sub-increment 1a	2	2014	3	2014
Air Soldier System Milestone C/Full Rate Production (FRP), Sub-increment 1a	4	2014	4	2014
Air Soldier System Critical Design Review (CDR), Sub-increment 1b	3	2015	3	2015
Air Soldier System Developmental Testing Sub-increment 1b	4	2015	1	2016
Air Soldier System Milestone C/Low Rate Initial Production, Sub-increment 1b	3	2016	3	2016
Air Soldier System Initial Operational Test & Evaluation, Sub-increment 1b	2	2017	3	2017

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>				PROJECT S62: <i>Counter-Defilade Target Engagement - SDD</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
S62: <i>Counter-Defilade Target Engagement - SDD</i>	23.548	35.980	34.412	-	34.412	1.983	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

The XM25 Counter Defilade Target Engagement System (CDTE) program title changed to the XM25 Individual Semi-Automatic Airburst System (ISAAS).

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 a critical capability gap for our Soldiers in combat. The number one materiel solution to mitigate the critical capability gap (defeating defilade targets from 15-500m) is the XM25 Individual Semi-Automatic Airburst System (ISAAS). The XM25 ISAAS provides the Infantry Soldier with a leap-ahead overmatch capability that dramatically increases lethality, range, and capability through the use of a family of low-velocity programmable 25mm ammunition and allows the Soldier to engage defilade targets with a high degree of accuracy while posing minimal burden, in terms of weight and size. The XM25 ISAAS 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 defeating defilade (hidden) targets.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Engineering and Manufacturing Development/Fabricate	13.534	26.769	23.120	-	23.120
Articles:	0	0			
Description: Description: Engineering Development and Fabrication					
FY 2011 Accomplishments: Implemented technical and producible design improvements to the weapon system such as reduction in weight and increased weapon reliability/safety; the target acquisition/fire control (TA/FC) specific to power reduction/electronics obsolescence, housing, display module and menu; and ammunition (ammo) improvements to optimize fragmentation and lethality. Implemented contractor facility improvements to ramp up manufacturing process developments and provided for the acquisition of long lead items. Also completed the final packaging design for TA/FC and ammo.					
FY 2012 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S62: <i>Counter-Defilade Target Engagement - SDD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Continue producible design improvements specific to weight reduction, reliability and survivability of the weapons system, the weapon system battery, target acquisition/fire control (TA/FC), and the ammunition magazine based on user feedback of the five (5) prototypes in Afghanistan's Forward Operational Assessment (FOA) 1B. Initiate prototype manufacturing tooling. Build 10 weapon prototypes to support contractor weapon system assessments and verification testing. Initiate build of 25 additional weapon prototypes for government qualification testing.</p> <p>FY 2013 Base Plans: Will fabricate and integrate design enhancements to the weapons systems and subsystems, target acquisition/fire control (TA/FC) and ammunition identified through contractor subsystem testing and FOA 1B. Will assemble prototype systems to include weapon, TA/FC and ammunition for government testing. Will finalize weapon system design for Critical Design Review (CDR). Will complete build of 36 weapon systems for the second Forward Operational Assessment (FOA) 2.</p>					
<p>Title: Engineering and Training Development</p> <p align="right">Articles:</p> <p>Description: Description: Engineering and Training Development</p> <p>FY 2011 Accomplishments: Provided engineering/training support and oversight of technical design improvements and testing of the weapon system, target acquisition/fire control (TA/FC) and ammunition both within contractor and government facilities as well as in the field for FOA 1B. Completed event based technical reviews including the System Requirement Review, System Functional Reviews, evaluations and verifications of subsystem performance requirements. Performed engineering oversight required for contractor inspections, development and implementation of training solutions required for successful field demonstration and assessment.</p> <p>FY 2012 Plans: Continue engineering support required for producible design improvements specific to reliability and survivability of the weapon system battery, target acquisition/fire control (TA/FC) and ammunition magazine. Engineering support is necessary for all testing to meet army performance objectives. Preparation of documentation to perform technical design, performance and safety reviews.</p> <p>FY 2013 Base Plans: Will provide engineering support for weapons systems, subsystems, target acquisition/fire control (TA/FC) and software design enhancements required to perform technical design reviews to include, combined system</p>	2.530 0	2.300 0	2.500	-	2.500

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S62: <i>Counter-Defilade Target Engagement - SDD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
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verification reviews, and production readiness review to update system engineering master plans and integrate technical design efforts. Will conduct training efforts for Limited User Test (LUT).

<p>Title: Development Test and Evaluation</p> <p align="right">Articles:</p> <p>Description: Description: Test and Evaluate</p> <p>FY 2011 Accomplishments: Conducted initial developmental testing and evaluation of weapon systems, target acquisition/fire control (TA/FC) and ammunition prototypes. Selected weapon systems, TA/FC and ammo design for Preliminary Design Review (PDR) and conducted performance evaluation and structural integrity tests. Specific ammunition testing conducted for the high explosive airbursting (HEAB) and all variants included spin/penetration, velocity, fragment patterns and fragment size.</p> <p>FY 2012 Plans: Contractor conducts weapon system and subsystem performance testing for, reliability, simulated natural environments (hot, cold, sand rain etc.), electromagnetic environmental effects (E3) testing, human factors and rough handling tests. Weapon also sustains various prequalification testing. The target acquisition/fire control (TA/FC) and all ammunition variants complete developmental and safety testing and evaluation.</p> <p>FY 2013 Base Plans: Will conduct Government and contractor test efforts of weapon systems including the target acquisition/fire control (TA/FC) and ammunition that include the following: Pre-Production Qualification tests, Electromagnetic Environmental Effects (E3) testing, Simulated Natural Environment Test, Limited User Testing (LUT).</p>	6.454 0	6.000 0	8.000	-	8.000
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<p>Title: Program Management</p> <p align="right">Articles:</p> <p>Description: Description: Program Management</p> <p>FY 2011 Accomplishments: Prepared and staffed Acquisition Strategy, Acquisition Program Baseline, Systems Engineering Plan, Acquisition Plan, Program Protection Plan, Test & Evaluation Master Plan and the Life Cycle Sustainment Plan. Assembled</p>	1.030 0	0.911 0	0.792	-	0.792
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S62: <i>Counter-Defilade Target Engagement - SDD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
and conducted Integrated Product Team meetings and Integrated Baseline Reviews. Awarded Engineering and Manufacturing Development contract.					
<i>FY 2012 Plans:</i> The Program Management office provides oversight of all engineering support and test activities throughout the fiscal year. Manage the life cycle mission of the program to include future acquisition and sustainment plans. Provide oversight of design improvements, weapon system assessments, developmental, verification and prequalification testing. Prepare documentation to perform technical design, performance and safety reviews.					
<i>FY 2013 Base Plans:</i> Will continue Program Management oversight to achieve Milestone C and transition to Low Rate Initial Production (LRIP).					
Accomplishments/Planned Programs Subtotals	23.548	35.980	34.412	-	34.412

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• G16101: <i>(G16101) Integrated Air Burst Weapon System Family</i>			0.506		0.506		71.208	71.196	72.387	Continuing	Continuing
• E92500: <i>(E92500) CTG, 25MM, XM1083 High Explosive Air Burst (HEAB)</i>			4.506		4.506		15.892	32.608	33.163	Continuing	Continuing

D. Acquisition Strategy
The XM25 ISAAS transitioned from the Technology and Development phase to Engineering and Manufacturing Development (EMD) phase by achieving Milestone B in December 2010. The EMD phase completes development of the XM25 ISAAS and verifies training solutions for the Milestone C approval in FY 2013. 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S62: <i>Counter-Defilade Target Engagement - SDD</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	Performed by Government:Various Activities	1.906	0.911		0.792		-		0.792	Continuing	Continuing	Continuing
Subtotal			1.906	0.911		0.792		-		0.792			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Design, Develop & Fabricate	SS/CPFF	ATK:Plymouth, MN	38.566	26.769		23.120		-		23.120	Continuing	Continuing	Continuing
Subtotal			38.566	26.769		23.120		-		23.120			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	Various	Various:Multiple	4.130	2.100		2.300		-		2.300	Continuing	Continuing	Continuing
Training Development Support	MIPR	PEO STRI:PEO STRI	0.400	0.200		0.200		-		0.200	Continuing	Continuing	Continuing
Subtotal			4.530	2.300		2.500		-		2.500			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental/System Tests and Articles	SS/CPFF	Performed by Contractor:ATK, Plymouth, MN	14.854	-		-		-		-	0.000	14.854	0.000
Developmental/ Operational Tests	Various	Performed by Government:Various Activities	-	6.000		8.000		-		8.000	Continuing	Continuing	Continuing
Subtotal			14.854	6.000		8.000		-		8.000			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S62: <i>Counter-Defilade Target Engagement - SDD</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				

Remarks

Contractor Tests - The contractors will finalize the system design and build prototypes to conduct pre-qualification test. A total of 8 weapon systems, including TA/FC along with 11,000 TP rounds, 1,000 HEAB rounds will be built for contractors pre-qualification tests. There will not be any investment made by the government in contractors test facilities for this program. Tests that require facilities the contractors do not have will be performed at government owned facilities or other third party vendors.

Government Tests - In FY 2013, 10 weapon systems, including the TA/FC along with 45,000 TP rounds, 10,000 HEAB rounds will be delivered to the Government for Pre-Production Qualification Tests (PPQT) and simulated Natural Environment Test at Government facilities. Results from this and other tests will be used to support MS C scheduled for 4th Qtr FY 2013. During the Production & Deployment Phase (starting in FY 2014), up to 16 systems and a yet to be determined number of rounds (depending on the outcome of the PPQT) will be subjected to Production Qualification Tests (PQT) at Government facilities. Prior to Full-Rate Production (FRP), up to 10 systems will be subjected to First Article Tests (FAT). All the capabilities to conduct Developmental Tests already exist at Army Proving Grounds with no new facility investment anticipated.

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	59.856	35.980		34.412		-		34.412			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S62: <i>Counter-Defilade Target Engagement - SDD</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
MS C/Type Classification-Limited Procurement																												
Production Qualification Test (PQT)																												
Initial Operational Test & Evaluation (IOT&E)																												
Low Rate Initial Production (LRIP)																												
Type Classification - Standard																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S62: <i>Counter-Defilade Target Engagement - SDD</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MS C/Type Classification-Limited Procurement	4	2013	4	2013
Production Qualification Test (PQT)	1	2014	2	2014
Initial Operational Test & Evaluation (IOT&E)	2	2014	1	2015
Low Rate Initial Production (LRIP)	4	2013	1	2015
Type Classification - Standard	1	2015	1	2015

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>				PROJECT S63: <i>SMALL ARMS IMPROVEMENT</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
S63: <i>SMALL ARMS IMPROVEMENT</i>	18.705	18.150	19.617	-	19.617	18.289	14.560	14.601	14.740	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Small Arms Improvement Engineering and Manufacturing Development (EMD) program provides funds to transition components or prototypes from Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4) and other domestic and foreign sources of small arms weapons to demonstrate, test and evaluate capability near or at planned operational requirements. Small arms systems include weapons ranging up to 40 millimeter in caliber. Current and future efforts focus on system improvements designed to enhance lethality, target acquisition, fire control, training effectiveness and reliability of weapons to include ammunition when developing and/or evaluating standard and non-standard weapons. Focus areas include system development, integration, demonstration, test and evaluate components, prototypes and operational system prototypes of small arms weapons and/or enhancements. Benefits include continuous improvements to small arms weapons, fire control equipment, optics, gun barrels, ancillary equipment, training devices, component mounts, weapon mounts, and weapon/ammunition interface of current small arms fleet or new weapon systems. New starts in FY 2013 include the transition of barrel twist optimization for weapon enhancement, Squad Common Optic (SCO) for combat optics, and Integrated Fire Control from Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4). New initiatives in FY 2013 include the evaluation of the Army's M9 Bayonet and enhancements to the Common Remotely Operated Weapon Station (CROWS).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: New Weapons	9.148	10.687	9.545	-	9.545
Articles:	0	0			
Description: Description: Development of new weapons					
FY 2011 Accomplishments: Individual Carbine Competition: Based on Milestone B decision, completed all required acquisition documentation and approvals to release a request for proposal. Initiated Source Selection Evaluation Board. Performed systems requirements and test readiness reviews. Coordinated an ammunition compatibility shoot for interested vendors with the M855A1 ammunition. Conducted an Industry Day Conference that attracted over thirty interested vendors. Developed test plans product evaluation. Provided engineering and cost analysis support to Maneuver Center of Excellence for the Modular Handgun requirement.					
FY 2012 Plans: Individual Carbine Competition: Complete Phases I and II of competitive test and inspection program. Conduct a live fire test and evaluation for weapons non-standard caliber ammunition. Conduct scoring conferences					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>		PROJECT S63: <i>SMALL ARMS IMPROVEMENT</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
for data generated by testing. Perform down-selection of most qualified vendors and award three competitive contracts. New starts: Initiate the Precision Sniper Rifle program.					
FY 2013 Base Plans: Will down select individual carbine competitors from competitive evaluation/testing phase to conduct system testing and user evaluation of remaining weapons. Will evaluate on-going initiative of the Precision Sniper Rifle. Will initiate development and engineering testing efforts to support new Capability Development Documents.					
Title: Small Arms Weapons Enhancements					
Articles:					
Description: Description: Enhancement developments of small arms weapons					
FY 2011 Accomplishments: M4 Carbine Product Improvement Program: Completed request for proposal to upgrade bolt and bolt carrier. Initiated testing and inspection of bolt/carrier bid samples. Released the request for proposal to upgrade rail system. Sniper Upgrades: Continued system testing and evaluation of production-representative articles to improve felt recoil and fire control solutions. XM205 Tripod: Completed Operational Test. New start: Initiated suppressors evaluation in support of Maneuver Center of Excellence requirement generation.					
FY 2012 Plans: M4 Carbine Product Improvement Program: Continue evaluation and down selection process. Initiate technical testing evaluations of the rail system hardware. Sniper Upgrades: Continue system testing and evaluation of components enhancements. Transition sub-components to sniper rifle modification production. Close Quarter Battle Kit: Re-compete and separate cleaning kits into two smaller kits and a separate multipurpose tool. XM205 Tripod: Submit final report for Milestone C. Continue suppressors evaluation.					
FY 2013 Base Plans: Will transition M4 Carbine Product Improvements initiatives to M4 Carbine Modification procurement program. Will perform, evaluate and analyze engineering, development and testing of sniper upgrades, suppressors, studies to evaluate upgrades to the Common Remotely Operated Weapon Station (CROWS), and Close Quarter Battle Kit re-competition. Will asses M4 reliability testing of functional impact with the introduction of enhanced performance ammunition on current small caliber weapon designs. Areas of potential impact include weapon					
	6.097	5.013	9.229	-	9.229
	0	0			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S63: <i>SMALL ARMS IMPROVEMENT</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
system reliability, durability, and maintainability. Will continue suppressors evaluation. Transition barrel twist optimization from Small Arms Improvement, Project S54, Program Element 0603827A (Budget Activity 4).						
Title: Ammunition		2.265	1.600	-	-	-
		Articles: 0	0			
Description: Description: Improvement of small arms ammunition						
FY 2011 Accomplishments: Tested and evaluated prototype XM1112 Airburst Non-Lethal Cartridges. Awarded contract to incorporate Micro Electro-Mechanical System (MEMS) equipment and provide safe and arm assemblies for fuze and cartridge testing. Initiated effort to implement insensitive munitions technology for the air bursting fuze for low velocity high explosive airbursting (HEAB) cartridge. Initiated the transition of small arms ammunition Research, Development, Test and Evaluation (RDT&E) initiatives to Program Executive Office Ammunition.						
FY 2012 Plans: Continue engineering, test and evaluation of the XM1112 40mm Low Velocity Airburst Non-Lethal Munitions (ANLM). Conduct prototype testing of Micro Electro-Mechanical System (MEMS) safe and arm mechanisms. Complete the transition of small arms ammunition Research, Development, Test and Evaluation (RDT&E) initiatives to Program Executive Office Ammunition.						
Title: Combat Optics		-	0.100	0.100	-	0.100
			Articles: 0			
Description: Description: Improvement of combat optics						
FY 2012 Plans: Continue market research of optics industry. Initiate engineering support and evaluation of weapon optics performance requirements..						
FY 2013 Base Plans: Will continue engineering support and services to include engineering evaluations, verification and validation of weapon optics performance requirements to include the Squad Common Optic (SCO) and the Power Rail. Transition SCO from Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4).						
Title: Fire Control		1.195	0.750	0.743	-	0.743
		Articles: 0	0			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S63: <i>SMALL ARMS IMPROVEMENT</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Description: Description: Improvement of small arms fire control.</p> <p>FY 2011 Accomplishments: XM320 Grenade Launcher: Conducted Developmental Test (DT) Phase II to verify all defect fixes identified during DT Phase I on candidate Grenadier Laser Range Finders (GLRFs) with integrated fire control/sights from two different vendors.</p> <p>FY 2012 Plans: XM320 Grenade Launcher: Award competitive contract to provide Grenadier Sight Systems (GSSs) for technical testing and the Limited User Test (LUT).</p> <p>FY 2013 Base Plans: XM320 Grenade Launcher: Will transition upgraded Fire Control to M320 production. Integrated Fire Control for Small Arms: Will transition the integrated fire control for small arms program from Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4) and initiate engineering manufacturing development phase.</p>					
Accomplishments/Planned Programs Subtotals	18.705	18.150	19.617	-	19.617

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• Small Arms Improvement: <i>RDTE S54, Program Element 0603827A - Soldier Systems - Advanced Development</i>	4.805	4.577	4.690		4.690		5.469	5.100	5.186	Continuing	Continuing
• M249 SAW MODS: <i>WTCV, GZ1290, M24 Squad Automatic Weapon (SAW) MODS</i>	5.888	8.480	4.996		4.996		5.155	5.245	5.333	Continuing	Continuing
• M16 Rifle Mods: <i>WTCV, GZ2800, M16 Rifle MODS</i>	3.832	3.476	3.306	15.422	18.728		3.283	3.338	3.394	Continuing	Continuing
• M240 Medium Machine Gun MODS: <i>WTCV, GZ1300, M240 Medium Machine Gun MODS</i>	15.762	15.718	6.806		6.806		4.685	4.768	4.847	Continuing	Continuing

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S63: <i>SMALL ARMS IMPROVEMENT</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• M4 Carbine MODS: <i>WTCV, GB3007, M4 Carbine MODS</i>	56.864	41.892	27.243		27.243		32.170	36.195	23.265	Continuing	Continuing
• M2 .50 CAL Heavy Machine Gun MODS: <i>WTCV, GB4000, M2 .50 CAL Heavy Machine Gun MODS</i>	60.000	48.856	39.974		39.974		38.041	29.690	50.176	Continuing	Continuing
• Sniper Rifle MODS: <i>WTCV, GZ1500, Sniper Rifle MODS</i>	20.900	1.994	14.113		14.113		2.018	2.019	2.053	Continuing	Continuing
• Modification Less Than \$5.0M: <i>WTCV, GC0925, Modifications Less Than \$5.0M</i>	6.048	2.973	3.072		3.072		3.122	3.179	3.232	Continuing	Continuing

D. Acquisition Strategy

Primary strategy is to mature and finalize design efforts, award Research, Development, Test and Evaluation (RDT&E) hardware contracts, and test and evaluate systems that 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S63: <i>SMALL ARMS IMPROVEMENT</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Allot	PM Soldier Weapons,:Picatinny Arsenal	4.042	2.475		2.904		-		2.904	Continuing	Continuing	Continuing
Travel	MIPR	PM Soldier Weapons,:Picatinny Arsenal	0.579	0.205		0.250		-		0.250	Continuing	Continuing	Continuing
Subtotal			4.621	2.680		3.154		-		3.154			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Fabrication	C/CPFF	Various,:Multiple	-	-		0.300		-		0.300	Continuing	Continuing	Continuing
Hardware Development	MIPR	Army Research Development Engineering Centers,:Multiple	6.741	0.388		0.100		-		0.100	Continuing	Continuing	Continuing
Subtotal			6.741	0.388		0.400		-		0.400			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering	MIPR	Army Research Development Engineering Centers,:Multiple	18.934	8.279		8.380		-		8.380	Continuing	Continuing	Continuing
Logistics	MIPR	TACOM,:Warren	1.304	1.291		1.383		-		1.383	Continuing	Continuing	Continuing
Human Research and Engineering	MIPR	Army Research Laboratory,:Aberdeen Proving Ground	1.724	0.598		0.600		-		0.600	Continuing	Continuing	Continuing
Subtotal			21.962	10.168		10.363		-		10.363			

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S63: <i>SMALL ARMS IMPROVEMENT</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Precision Sniper Rifle					[REDACTED]																							
Sub-Compact Weapon													[REDACTED]															
Lightweight Machine Gun													[REDACTED]															
Integrated Fire Control for Small Arms													[REDACTED]															

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S63: <i>SMALL ARMS IMPROVEMENT</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Precision Sniper Rifle	1	2012	4	2014
Sub-Compact Weapon	1	2014	4	2017
Lightweight Machine Gun	1	2014	4	2017
Integrated Fire Control for Small Arms	2	2013	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S70: <i>PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
S70: <i>PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)</i>	1.216	3.060	4.517	-	4.517	1.132	1.104	1.141	1.193	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project provides the continued maturation of PRSS products that enable 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 operations, and the demonstration of a prototype Personal Reporting Device (PRD) that operates over a secure architecture.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Development of Personnel Recovery Support System (PRSS)	1.216	3.060	4.517	-	4.517
Articles:	0	0			
Description: Integration, evaluation, testing, and qualification of PRSS products to ensure continued successful interoperability within the relevant theater of operation, and development of a PRD that operates over a secure architecture.					
FY 2011 Accomplishments: Validated performance enhancements of the classified PRSS products to improve effectiveness within theater of operation.					
FY 2012 Plans: Integrate enhanced classified PRSS products and conduct OCONUS performance testing. Mature PRD architecture and begin evaluation of prototype PRDs.					
FY 2013 Base Plans: Will conduct system test and evaluation, inclusive of PRD and receiver acceptance testing, system integration testing, and end-to-end network testing.					
Accomplishments/Planned Programs Subtotals	1.216	3.060	4.517	-	4.517

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S70: <i>PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Personnel Recovery Support Sys OPA: <i>Other Procurement, Army, G01101-Personnel Recovery Support System (PRSS)</i>	7.769	8.509	11.222		11.222		25.938	17.369	9.187	Continuing	Continuing
• Aircrew Integrated Systems APA: <i>Aircraft Procurement, Army AZ3110-ACIS includes funding of Personnel Recovery Support Equipment aircraft mods</i>	52.125	62.746	77.381		77.381		16.347	14.080	0.008	Continuing	Continuing

D. Acquisition Strategy

Execute PRSS program development effort for performance optimization through contracts with industry and Military Interdepartmental Purchase Requests to other Governmental agencies. Conduct Personal Reporting Device (PRD) development using full and open competition 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S70: <i>PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Administration	Allot	Various Government:Huntsville, Alabama	0.243	0.338		0.343		-		0.343	Continuing	Continuing	Continuing
Subtotal			0.243	0.338		0.343		-		0.343			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Personnel Recovery Support System Development Systems Engineering	SS/FP	Various:Product Development	1.451	1.939		3.347		-		3.347	Continuing	Continuing	Continuing
Subtotal			1.451	1.939		3.347		-		3.347			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	RO	Various Organizations:Various Locations	0.389	0.583		0.452		-		0.452	Continuing	Continuing	Continuing
Subtotal			0.389	0.583		0.452		-		0.452			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	RO	Various Organizations:Various Locations	0.400	0.200		0.375		-		0.375	Continuing	Continuing	Continuing
Subtotal			0.400	0.200		0.375		-		0.375			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>				PROJECT S70: <i>PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)</i>				
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.483	3.060		4.517		-		4.517			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S70: <i>PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)</i>

FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
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

PRSS Upgrades & Adaptations to New Platforms	[REDACTED]																											
	[REDACTED]																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S70: <i>PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
PRSS Upgrades & Adaptations to New Platforms	1	2014	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>				PROJECT VS5: <i>SOLDIER PROTECTIVE EQUIPMENT</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
VS5: <i>SOLDIER PROTECTIVE EQUIPMENT</i>	-	3.983	11.942	-	11.942	13.163	7.153	12.851	4.806	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This funding supports System Capability and Manufacturing Process Demonstration (SC&MPD) phase of Engineering and Manufacturing Development (EMD) 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 the transition of new technologies into production 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, continue to increase eyewear ballistic/blast protection, and transition to production.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Soldier Protective Equipment	-	3.983	11.942	-	11.942
Articles:		0			
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 Plans: Complete stab and ballistic protection integration efforts for the Family of Concealable Body Armor & transition to production in FY13. Initiate System Capability & Manufacturing Process Demonstration (SC&MPD) of Soldier Protection System (SPS) Increment 1a. SPS is a Mission Tailorable Body Armor (MTBA) suite to provide integrated protection to Soldiers' Vital Torso, Head & Face & Extremities and transitions 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.					
FY 2013 Base Plans: Will initiate Engineering and Manufacturing Development (EMD) of Soldier Protection System (SPS). Will award SPS development contracts & conduct initial design reviews, Limited User Assessments and initial down select of proposed solutions. Will continue efforts to develop Lightweight Enhanced Small Arms Protective Inserts (ESAPI), to include a self-diagnostic Smart Sensor and the integration/testing of key technologies supporting					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT VS5: <i>SOLDIER PROTECTIVE EQUIPMENT</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
subsystems. Will leverage capabilities from the Family of Concealable Body Armor (FoCBA) Increment 1 (separate stab & ballistic vests) towards the development of FoCBA Increment 2 with increased vest capability integration towards achieving a single vest that is both stab and ballistic resistant.					
Accomplishments/Planned Programs Subtotals	-	3.983	11.942	-	11.942

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• VS4 6.4 RDTE: <i>RDTE, 0603827A. VS4, Soldier Protective Equipment</i>		1.846	14.823		14.823		11.800	4.550	10.150	0.000	53.517
• OMA: <i>OMA, 121017, Central Funding & Fielding</i>	71.429	72.171	75.961		75.961	124.365	125.670	127.008		0.000	671.965

D. Acquisition Strategy
Acquisition strategies vary in methods: (1) Low Risk Enhancements in 12-24 months or less to integrate, validate and make a production decision; (2) modernization (through spares) improvements which require limited RDT&E funding and are completed in 24-48 months and inserted as engineering changes to existing or pending production contracts; and (3) fully integrated development that requires substantial RDT&E funding and is 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army											DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT					
2040: Research, Development, Test & Evaluation, Army BA 5: Development & Demonstration (SDD)				PE 0604601A: Infantry Support Weapons				VS5: SOLDIER PROTECTIVE EQUIPMENT					
Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SETA Support	Various	PM SPE:various	-	0.200		0.300		-		0.300	Continuing	Continuing	0.000
Subtotal			-	0.200		0.300		-		0.300			0.000
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Dev/Integ Contracts	Various	Various:Various	-	1.400		8.714		-		8.714	Continuing	Continuing	0.000
Prod Sys Engineering Spt	MIPR	various:various	-	0.669		0.928		-		0.928	Continuing	Continuing	0.000
Subtotal			-	2.069		9.642		-		9.642			0.000
Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Misc Support Costs	MIPR	Various:Various	-	0.600		0.600		-		0.600	0.000	1.200	0.000
Subtotal			-	0.600		0.600		-		0.600	0.000	1.200	0.000
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DT/Ballistic & OT Test Costs	MIPR	Various DTC & OTC:Various DTC & OTC	-	1.114		1.400		-		1.400	Continuing	Continuing	0.000
Subtotal			-	1.114		1.400		-		1.400			0.000
Project Cost Totals			-	3.983		11.942		-		11.942			0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army						DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>			PROJECT VS5: <i>SOLDIER PROTECTIVE EQUIPMENT</i>		
	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT VS5: <i>SOLDIER PROTECTIVE EQUIPMENT</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Complete integration of stab & ballistic protection for FoCBA Incr 1									■																			
FoCBA Incr 1 MS C											■																	
Initiate and complete dev of FoCBA Incr 2									■	■	■	■	■	■	■	■												
FoCBA Incr 2 MS C																			■									
Soldier Protection System (SPS) Incr 1 MS B											■																	
Initiate & Complete Development (i/c Test & Evaluation) of SPS (Incr 1)									■	■	■	■	■	■	■	■												
SPS Incr 1 MS C																			■									
SPS RDTE Funded Low Rate Initial Production (LRIP)																			■									
SPS Initial Operational Test & Evaluation (IOT&E)																							■					
SPS Full Rate Production Decision																									■			
Complete Dev (i/c Test & Evaluation) of Lightweight ESAPI & Smart Sensor											■	■	■	■	■	■												
Transition Lightweight ESAPI & Smart Sensor technology to sustainment contracts																			■									
SPS Incr 2 MS B																			■									
Initiate & Complete Development (i/c Test & Evaluation) of SPS (Incr 2)																							■	■	■	■	■	■
SPS Incr 2 MS C																												■

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT VS5: <i>SOLDIER PROTECTIVE EQUIPMENT</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Complete integration of stab & ballistic protection for FoCBA Incr 1	1	2013	1	2013
FoCBA Incr 1 MS C	2	2013	2	2013
Initiate and complete dev of FoCBA Incr 2	1	2013	4	2014
FoCBA Incr 2 MS C	2	2015	2	2015
Soldier Protection System (SPS) Incr 1 MS B	2	2013	2	2013
Initiate & Complete Development (i/c Test & Evaluation) of SPS (Incr 1)	2	2013	4	2014
SPS Incr 1 MS C	1	2015	1	2015
SPS RDTE Funded Low Rate Initial Production (LRIP)	2	2015	2	2015
SPS Initial Operational Test & Evaluation (IOT&E)	3	2015	3	2015
SPS Full Rate Production Decision	4	2015	4	2015
Complete Dev (i/c Test & Evaluation) of Lightweight ESAPI & Smart Sensor	3	2013	4	2014
Transition Lightweight ESAPI & Smart Sensor technology to sustainment contracts	1	2015	1	2015
SPS Incr 2 MS B	1	2015	1	2015
Initiate & Complete Development (i/c Test & Evaluation) of SPS (Incr 2)	2	2015	3	2017
SPS Incr 2 MS C	4	2017	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE										
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	PE 0604604A: <i>MEDIUM TACTICAL VEHICLES</i>										
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	3.578	3.957	3.006	-	3.006	2.854	2.871	3.751	3.832	Continuing	Continuing
H07: <i>FAMILY OF MED TAC VEH</i>	3.578	3.957	3.006	-	3.006	2.854	2.871	3.751	3.832	Continuing	Continuing

Note

FY13 is a Congressional budget year adjustment.

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 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. FY13-17 funding will be used to continue Technology Insertion, Fuel Economy 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.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	3.710	3.961	3.974	-	3.974
Current President's Budget	3.578	3.957	3.006	-	3.006
Total Adjustments	-0.132	-0.004	-0.968	-	-0.968
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.132	-0.004	-0.968	-	-0.968

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604604A: <i>MEDIUM TACTICAL VEHICLES</i>	PROJECT H07: <i>FAMILY OF MED TAC VEH</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
H07: <i>FAMILY OF MED TAC VEH</i>	3.578	3.957	3.006	-	3.006	2.854	2.871	3.751	3.832	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 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. FY13-17 funding will be used to continue Technology Insertion, Fuel Economy 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.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Automotive Technological Evaluation, Testing & Insertion	2.712	1.056	1.044	-	1.044
Articles:	0	0			
Description: Funding is provided for the following effort					
FY 2011 Accomplishments: Continued with FMTV Automotive Technological Evaluation, Testing & Insertion					
FY 2012 Plans: Will continue to fund FMTV Automotive Technological Evaluation, Testing & Insertion					
FY 2013 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604604A: <i>MEDIUM TACTICAL VEHICLES</i>	PROJECT H07: <i>FAMILY OF MED TAC VEH</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Continuation with FMTV Automotive Technological Evaluation, Testing & Insertion					
<p>Title: Armor Spiral Development</p> <p style="text-align: right;">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2012 Plans: Continued Armor Spiral Development</p> <p>FY 2013 Base Plans: Improvements to occupant survivability.</p>	-	0.956 0	0.960	-	0.960
<p>Title: Fuel Economy</p> <p style="text-align: right;">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2012 Plans: Will provide funding for FMTV Fuel Economy research</p> <p>FY 2013 Base Plans: Continued Fuel Economy Improvements.</p>	-	0.956 0	1.002	-	1.002
<p>Title: Government System Test and Evaluation</p> <p style="text-align: right;">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2012 Plans: Will fund Government System Test and Evaluation</p>	-	0.989 0	-	-	-
<p>Title: ASV Military Police Non-Lethal Mission Enhancement Package</p> <p style="text-align: right;">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments:</p>	0.866 0	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604604A: <i>MEDIUM TACTICAL VEHICLES</i>	PROJECT H07: <i>FAMILY OF MED TAC VEH</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Will continue to fund ASV Military Police Non-Lethal Mission Enhancement Package					
Accomplishments/Planned Programs Subtotals	3.578	3.957	3.006	-	3.006

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• OPA 1 (D15500): <i>Family of Medium Tactical Vehicles</i>	1,088.525	434.030	346.115	42.370	388.485		2.193	5.421	7.262	Continuing	Continuing
• OPA 1 (D02800): <i>Armored Security Vehicle</i>	86.615									0.000	86.615

D. Acquisition Strategy
FMTV - Technological insertion, Armor Spiral Development and Fuel Economy efforts will be accomplished by a Cost Plus Fixed Fee (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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604604A: <i>MEDIUM TACTICAL VEHICLES</i>	PROJECT H07: <i>FAMILY OF MED TAC VEH</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FMTV Automotive Technological Evaluation and Insertion	C/CPFF	Oshkosh Truck Corporation:Oshkosh, WI	8.518	1.056		1.044		-		1.044	Continuing	Continuing	Continuing
FMTV Armor Spiral Development	C/CPFF	Oshkosh Truck Corporation:Oshkosh, WI	2.965	0.956		0.960		-		0.960	Continuing	Continuing	Continuing
FMTV Fuel Economy	C/CPFF	Oshkosh Truck Corporation:Oshkosh, WI	-	0.956		1.002		-		1.002	Continuing	Continuing	Continuing
ASV Mission Enhancement Package (MEP)	TBD	TBD:TBD	1.844	-		-		-		-	0.000	1.844	0.000
Subtotal			13.327	2.968		3.006		-		3.006			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FMTV Automotive Technological Evaluation and Insertion	Various	Various:Various	-	0.351		-		-		-	Continuing	Continuing	Continuing
FMTV Armor Spiral Development Testing	MIPR	TARDEC:Warren, MI	-	0.319		-		-		-	Continuing	Continuing	Continuing
FMTV Fuel Economy Testing	MIPR	TARDEC:Warren, MI	-	0.319		-		-		-	Continuing	Continuing	Continuing
Subtotal			-	0.989		-		-		-			

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		13.327	3.957	3.006	-	3.006		

Remarks

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				PE 0604609A: <i>Smoke, Obscurant and Target Defeating Sys - Eng Dev</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	5.146	-	-	-	-	-	-	-	-	Continuing	Continuing
198: <i>Target Defeating System</i>	2.339	-	-	-	-	-	-	-	-	Continuing	Continuing
200: <i>SMOKE/OBSCURANT SYSTEM</i>	2.807	-	-	-	-	-	-	-	-	Continuing	Continuing

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

A. Mission Description and Budget Item Justification

Project 0604609A supported the integration of obscurant systems to improve survivability of the combined armed forces, complement combined weapon systems, and enhance force effectiveness and combat power.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	5.335	-	-	-	-
Current President's Budget	5.146	-	-	-	-
Total Adjustments	-0.189	-	-	-	-
• Congressional General Reductions	-	-	-	-	-
• Congressional Directed Reductions	-	-	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	-	-	-	-	-
• Congressional Directed Transfers	-	-	-	-	-
• Reprogrammings	-	-	-	-	-
• SBIR/STTR Transfer	-	-	-	-	-
• Adjustments to Budget Years	-0.189	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604609A: <i>Smoke, Obscurant and Target Defeating Sys - Eng Dev</i>	PROJECT 198: <i>Target Defeating System</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
198: <i>Target Defeating System</i>	2.339	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note
Not applicable for this item.

A. Mission Description and Budget Item Justification

Project 0604609A supported the integration of obscurant systems to improve survivability of the combined armed forces, complement combined weapon systems, and enhance force effectiveness and combat power.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: Modeling, simulation, and toxicology effort.	0.539	-	-
Articles:	0		
Description: Modeling, simulation, and toxicology effort.			
FY 2011 Accomplishments: Modeling, simulation, and toxicology effort.			
Title: PGOC development.	1.800	-	-
Articles:	0		
Description: PGOC development.			
FY 2011 Accomplishments: PGOC development.			
Accomplishments/Planned Programs Subtotals	2.339	-	-

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• SMOKE/OBSCURANT SYSTEM: <i>RDT&E, BA4, PE 0603627A, Project E79 Smoke, Obscurant and Target Defeating Sys - Adv Dev</i>	2.337	4.572	2.725		2.725		5.168	0.173		0.000	19.260

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604609A: <i>Smoke, Obscurant and Target Defeating Sys - Eng Dev</i>	PROJECT 198: <i>Target Defeating System</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• SMOKE/ OBSCURANT SYSTEM: <i>RDT&E, BA5, PE</i> <i>0604609A, Project 200 Smoke,</i> <i>Obscurant and Target Defeating</i> <i>Sys - Eng Dev</i>	2.807									0.000	2.807

D. Acquisition Strategy

Acquisition Strategy:

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.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604609A: <i>Smoke, Obscurant and Target Defeating Sys - Eng Dev</i>	PROJECT 200: <i>SMOKE/OBSCURANT SYSTEM</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
200: <i>SMOKE/OBSCURANT SYSTEM</i>	2.807	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note
Not applicable for this item.

A. Mission Description and Budget Item Justification

Project 0604609A supported the integration of obscurant systems to improve survivability of the combined armed forces, complement combined weapon systems, and enhance force effectiveness and combat power.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: Projected/Generated Obscuration Capability (PGOC)	2.807	-	-
Articles:	0		
Description: PGOC development.			
FY 2011 Accomplishments: Development of PGOC systems.			
Accomplishments/Planned Programs Subtotals	2.807	-	-

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• Project E79: <i>BA4, PE 0603627A, Project E79 Smoke, Obscurant and Target Defeating Sys - Adv Dev</i>	2.337	4.572	2.696		2.696		5.168	0.173		0.000	19.231
• Project 198: <i>BA5, PE 0064609A, Project 198, Smoke, Obscurant and Target Defeating Sys - Eng Dev</i>	2.339									0.000	2.339

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604609A: <i>Smoke, Obscurant and Target Defeating Sys - Eng Dev</i>	PROJECT 200: <i>SMOKE/OBSCURANT SYSTEM</i>

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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				PE 0604611A: <i>JAVELIN (AAWS-M)</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	9.930	5.040	-	5.040	5.026	-	-	-	Continuing	Continuing
499: <i>JAVELIN (AAWS-M)</i>	-	9.930	5.040	-	5.040	5.026	-	-	-	Continuing	Continuing

Note

FY13 funds (\$44408) realigned to higher priority requirements.

A. Mission Description and Budget Item Justification

FY13 RDTE funding will support qualification testing of the multi-purpose warhead (MPWH), software modifications and upgrades, and Javelin Block I missile range verification testing. The MPWH and software modifications will be integrated into the current Javelin Block I missile resulting in an improved capability against a range of military operations of non-armored targets while maintaining current lethality against traditional armored threats. Additional efforts supported by FY13 RDTE funding include CLU far target locator (FTL) demonstrations and preparation to participate in Network Integration Exercises (NIE). These improvements are a direct result of lessons learned from firing 1,959 Javelin missiles in Iraq and Afghanistan through October 2011.

B. Program Change Summary (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	9.999	17.340	49.408	-	49.408
Current President's Budget	-	9.930	5.040	-	5.040
Total Adjustments	-9.999	-7.410	-44.368	-	-44.368
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-9.999	-7.410	-44.368	-	-44.368

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604611A: <i>JAVELIN (AAWS-M)</i>	PROJECT 499: <i>JAVELIN (AAWS-M)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
499: <i>JAVELIN (AAWS-M)</i>	-	9.930	5.040	-	5.040	5.026	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

FY13 RDTE funding will support qualification testing of the multi-purpose warhead (MPWH), software modifications and upgrades, and Javelin Block I missile range verification testing. The MPWH and software modifications will be integrated into the current Javelin Block I missile resulting in an improved capability against a range of military operations of non-armored targets while maintaining current lethality against traditional armored threats. Additional efforts supported by FY13 RDTE funding include CLU far target locator (FTL) demonstrations and preparation to participate in Network Integration Exercises (NIE). These improvements are a direct result of lessons learned from firing 1,959 Javelin missiles in Iraq and Afghanistan through October 2011.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: Javelin Block I System Improvements	-	9.930	5.040
Articles:		0	
Description: Improve the current Javelin missile with multi-purpose warhead (MPWH), software modifications and upgrade and Javelin Block I missile range verification testing.			
FY 2012 Plans: Continue development of Javelin MPWH modernization technologies.			
FY 2013 Plans: Javelin MPWH qualification testing to prepare for integration into Javelin missile. Modify system software to improve system effectiveness. Perform range verification testing of the Javelin Block I missile with MPWH.			
Accomplishments/Planned Programs Subtotals	-	9.930	5.040

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• SSN CC0007: <i>Javelin (AAWS-M)</i> <i>Procurement</i>	163.009	160.767	81.121		81.121		115.812	113.214	116.285	0.000	841.085

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604611A: <i>JAVELIN (AAWS-M)</i>	PROJECT 499: <i>JAVELIN (AAWS-M)</i>

D. Acquisition Strategy

Javelin Block I missile is procured via sole source to the Javelin Joint Venture. FY13 RDTE funds continue development of improvements to the Javelin Block I missile. The Javelin MPWH and software modifications are planned to be integrated into FY14 Javelin missile procurement via Engineering Change Proposal, enabling improved capability across range of military operations.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604611A: <i>JAVELIN (AAWS-M)</i>	PROJECT 499: <i>JAVELIN (AAWS-M)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering/Program Management, Govt	Allot	Close Combat Weapon Systems Project Office:Redstone Arsenal, AL	-	0.400		0.400		-		0.400	0.407	1.207	0.000
Subtotal			-	0.400		0.400		-		0.400	0.407	1.207	0.000

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Multi-purpose Warhead Development	SS/CPFF	JV/Raytheon/Lockheed Martin:Orlando, FL/ Tucson, AZ	-	9.530		1.250		-		1.250	0.000	10.780	0.000
Trade Studies and Demonstrations	MIPR	AMRDEC Test & Evaluation:Redstone Arsenal, AL	-	-		0.250		-		0.250	0.000	0.250	0.000
Subtotal			-	9.530		1.500		-		1.500	0.000	11.030	0.000

Remarks
JV - Joint Venture; SS CPFF - Sole Source Cost Plus Fixed Fee; CLU Command Launch Unit; AMRDEC - Aviation & Missile Research, Development and Engineering Center

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Multi-purpose Warhead Qualification Testing, Govt	MIPR	Redstone Test Center:Redstone Arsenal, AL	-	-		3.140		-		3.140	0.000	3.140	0.000
Multi-Purpose Warhead Live Fire Test, Govt	MIPR	Redstone Test Center:Redstone Arsenal, AL	-	-		-		-		-	4.619	4.619	0.000
Subtotal			-	-		3.140		-		3.140	4.619	7.759	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604611A: <i>JAVELIN (AAWS-M)</i>	PROJECT 499: <i>JAVELIN (AAWS-M)</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				

Remarks
MIPR - Military Interdepartmental Purchase Request

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	9.930		5.040		-		5.040	5.026	19.996	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604611A: <i>JAVELIN (AAWS-M)</i>	PROJECT 499: <i>JAVELIN (AAWS-M)</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Exercise FY12 Contract Options					■																							
MWPH Development, Component Qualification					■	■	■	■																				
Exercise FY13 Contract Options									■																			
Systems Integration and Test, Engineering Change Proposal Approval									■	■	■	■																
Exercise FY14 Contract Options													■															
System Qualification/ Live Fire													■	■	■	■												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604611A: <i>JAVELIN (AAWS-M)</i>	PROJECT 499: <i>JAVELIN (AAWS-M)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Exercise FY12 Contract Options	2	2012	2	2012
MWPH Development, Component Qualification	2	2012	1	2013
Exercise FY13 Contract Options	2	2013	2	2013
Systems Integration and Test, Engineering Change Proposal Approval	2	2013	1	2014
Exercise FY14 Contract Options	2	2014	2	2014
System Qualification/ Live Fire	2	2014	4	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
2040: <i>Research, Development, Test & Evaluation, Army</i>			PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>								
BA 5: <i>Development & Demonstration (SDD)</i>											
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	2.838	5.477	3.077	-	3.077	22.373	7.411	3.984	4.034	Continuing	Continuing
659: <i>FAMILY OF HVY TAC VEH</i>	1.494	-	0.050	-	0.050	18.431	3.500	-	-	Continuing	Continuing
65A: <i>MOVEMENT TRACKING SYSTEM (MTS)</i>	1.092	1.489	-	-	-	-	-	-	-	Continuing	Continuing
E50: <i>TRAILER DEVELOPMENT</i>	0.252	1.994	-	-	-	-	-	-	-	Continuing	Continuing
VR5: <i>TWV PROTECTION KITS</i>	-	1.994	3.027	-	3.027	3.942	3.911	3.984	4.034	Continuing	Continuing

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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	3.519	5.478	3.591	-	3.591
Current President's Budget	2.838	5.477	3.077	-	3.077
Total Adjustments	-0.681	-0.001	-0.514	-	-0.514
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.548	-	-0.548
• Other Adjustments 1	-0.681	-0.001	0.034	-	0.034

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT 659: <i>FAMILY OF HVY TAC VEH</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
659: <i>FAMILY OF HVY TAC VEH</i>	1.494	-	0.050	-	0.050	18.431	3.500	-	-	Continuing	Continuing
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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: FHTV Technology Insertion	1.494	-	-	-	-
Articles:	0				
Description: FHTV Technology Insertion					
FY 2011 Accomplishments: 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.					
Title: Program Support	-	-	0.050	-	0.050
Description: Program support.					
FY 2013 Base Plans: Funds will provide program support to the Heavy Tactical Vehicles family.					
Accomplishments/Planned Programs Subtotals	1.494	-	0.050	-	0.050

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• Family of Heavy Tactical Vehicles: <i>Family of Heavy Tactical Vehicles (FHTV) DA0500</i>	549.741	645.008	52.933	2.050	54.983		13.847	28.069	30.998	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT 659: <i>FAMILY OF HVY TAC VEH</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Truck, Dump: <i>Truck, Dump, 20T D16001</i>							0.014	24.177	49.194	Continuing	Continuing

D. Acquisition Strategy

Funds will provide program management support to the Family of Heavy Tactical 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.

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT 659: <i>FAMILY OF HVY TAC VEH</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FHTV Technology Insertion	3	2011	4	2012
Program Management	1	2013	4	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>				PROJECT 65A: <i>MOVEMENT TRACKING SYSTEM (MTS)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
65A: <i>MOVEMENT TRACKING SYSTEM (MTS)</i>	1.092	1.489	-	-	-	-	-	-	-	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 interfaces to the Transportation Coordinator's Automated Information for Movement System (TC AIMS II) and Global Combat Support System-Army (GCCS-Army). FY12 funding continues interface development & testing.

There is no FY13 Base or OCO funding for this project. The MTS program is being converged into the PM FBCB2 Joint Battle Command-Platform (JBC-P), as 'JBC-P Log'.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Movement Tracking System (MTS)	0.942	0.879	-	-	-
Articles:	0	0			
Description: Funding is provided for the following effort					
FY 2011 Accomplishments: Continuous improvements to system.					
FY 2012 Plans: Will continue to provide improvements to the system					
Title: System Testing	0.150	0.610	-	-	-
Articles:	0	0			
Description: Funding is provided for the following effort					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT 65A: <i>MOVEMENT TRACKING SYSTEM (MTS)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<i>FY 2011 Accomplishments:</i> Continued System Testing					
<i>FY 2012 Plans:</i> Testing includes Information Assurance (IAVA) testing, penetration testing, etc.					
Accomplishments/Planned Programs Subtotals	1.092	1.489	-	-	-

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• D16103: <i>Movement Tracking System (MTS)</i>	93.736	52.554								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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT 65A: <i>MOVEMENT TRACKING SYSTEM (MTS)</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software development, engineering, testing, program management	C/FP	Comtech Mobile Datacom Corp:Germantown, MD	14.751	1.339		-		-		-	Continuing	Continuing	Continuing
Subtotal			14.751	1.339		-		-		-			

Remarks
Due to transfer of Movement Tracking System (MTS) from Program Executive Office Enterprise Information Systems (PEO EIS) to Program Executive Office for Command, Control and Communications - Tactical (PEO C3T), there was a change in the acquisition strategy. In lieu of a planned full and open competition, remaining hardware components and services will be purchased from DRS Tactical Systems, Inc.(under a GSA contract), Comtech Mobile Datacom Corporation (CMDC) and Engineering Solutions and Products, Inc. (ESP), under Force XXI Battle Command-Brigade-and-Below (FBCB2) contract.

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Testing	TBD	TBD:TBD	3.238	0.150		-		-		-	Continuing	Continuing	Continuing
Subtotal			3.238	0.150		-		-		-			

Remarks
Prototype testing.

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			17.989	1.489		-		-		-			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT 65A: <i>MOVEMENT TRACKING SYSTEM (MTS)</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
MTS Full Deployment																												
Sustainment																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT 65A: <i>MOVEMENT TRACKING SYSTEM (MTS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MTS Full Deployment	4	2013	4	2013
Sustainment	2	2011	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT E50: <i>TRAILER DEVELOPMENT</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
E50: <i>TRAILER DEVELOPMENT</i>	0.252	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 tire improvement efforts intended to extend the life of the tire. FY 2012 funding will compare capabilities of the current M1000 Trailer to Objective Requirements, perform capability gap analysis, market surveys and propose concept trailers to meet future objective requirements. 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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: Program Management</p> <p align="right">Articles:</p> <p>Description: Program Management</p> <p>FY 2011 Accomplishments: Funds will provide Program Management to support the system</p>	0.252 0	-	-	-	-
<p>Title: Tire Improvement and Next Generation Trailer Study.</p> <p align="right">Articles:</p> <p>Description: Funding is provided for the following efforts.</p> <p>FY 2012 Plans: The tire improvement effort is to improve wear and identify aging characteristics will be used to improve future tires. The Next Generation Heavy Trailer Study will compare capabilities of the current M1000 Trailer to Objective Requirements, perform capability gap analysis, market surveys and propose concept trailers to meet future objective requirements. Modernized trailers are better able to match the capabilities of today's improved tactical wheeled vehicles and tractors.</p>	-	1.994 0	-	-	-
Accomplishments/Planned Programs Subtotals	0.252	1.994	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT E50: <i>TRAILER DEVELOPMENT</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Semi-Trailer Flatbed 40T M870A1: <i>Semi-Trailer Flatbed 40T</i> M870A1 SSN D00700		0.596	7.097		7.097					Continuing	Continuing

D. Acquisition Strategy

Research, development, test, and evaluation efforts to support design, development and build of system trailer improvements.

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT E50: <i>TRAILER DEVELOPMENT</i>
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	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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

Tire Improvement	████████████████████	
Next Generation Heavy Trailer Study	████████████████████	

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT E50: <i>TRAILER DEVELOPMENT</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Tire Improvement	3	2012	4	2013
Next Generation Heavy Trailer Study	3	2012	1	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT VR5: <i>TWV PROTECTION KITS</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
VR5: <i>TWV PROTECTION KITS</i>	-	1.994	3.027	-	3.027	3.942	3.911	3.984	4.034	Continuing	Continuing
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 (HTV) 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, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: Armor Analysis of Alternatives</p> <p align="right">Articles:</p> <p>Description: Armor Analysis of Alternatives</p> <p>FY 2012 Plans: Perform engineering analysis and present design concepts for an armor solution.</p>	-	0.157 0	-	-	-
<p>Title: Design and Build Armor Kits.</p> <p align="right">Articles:</p> <p>Description: Design and build prototype kits for the Heavy Tactical Vehicle systems.</p> <p>FY 2012 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 kit interface to the vehicle platform.</p>	-	1.080 0	-	-	-
<p>Title: Vulnerability Modeling and Simulation</p> <p align="right">Articles:</p> <p>Description: Vulnerability Modeling and Simulation</p> <p>FY 2012 Plans:</p>	-	0.107 0	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT VR5: <i>TWV PROTECTION KITS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Vulnerability analysis will provide the AEC evaluator with potential vulnerabilities in armor design. Will support a safety confirmation and materiel release.					
<p>Title: Survivability Modeling and Simulation</p> <p align="right">Articles:</p> <p>Description: Modeling and Simulation to predict survivability performance of the armor design.</p> <p>FY 2012 Plans: Modeling and Simulation to predict survivability performance of the armor design.</p>	-	0.250 0	-	-	-
<p>Title: Test and Evaluation.</p> <p>Description: Funding is provided for the following effort.</p> <p>FY 2013 Base Plans: Continuation of test and evaluation of Tactical Wheel Vehicle protection kits. It consists 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 integration onto the vehicle platform.</p>	-	-	2.427	-	2.427
<p>Title: Program Management</p> <p align="right">Articles:</p> <p>Description: Funding is provided for program management heavy tactical office support.</p> <p>FY 2012 Plans: Program Management support</p> <p>FY 2013 Base Plans: Program Management support</p>	-	0.400 0	0.600	-	0.600
Accomplishments/Planned Programs Subtotals	-	1.994	3.027	-	3.027

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT VR5: <i>TWV PROTECTION KITS</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 005: <i>Family of Heavy Tactical Vehicles (FHTV) (DA0500)</i>	738.418	674.508	52.207	2.050	54.257		39.554	27.648	30.523	Continuing	Continuing
• 003: <i>Family of Medium Tactical Vehicles (FMTV) (D15500)</i>	1,434.545	444.030	425.941	28.247	454.188		410.123	508.327	539.275	Continuing	Continuing
• 000: <i>Tactical Wheeled Protection Kits - D04003</i>		39.908	69.163		69.163		126.264	149.768	145.431	Continuing	Continuing

D. Acquisition Strategy

FY12 funds are expected to be executed via Military Interdepartmental Purchase Request (MIPR) to Army Research Laboratory (ARL). Armor kit design will use a pre-existing contract with Oshkosh Truck Corporation.

FY13 funds are expected to be executed via Military Interdepartmental Purchase Requests (MIPRs) to TARDEC, and government test centers, such as, Army Evaluation Center (AEC), Operational Test Center (OTC), and Army Test Eval Center (ATEC). Live Fire testing, Automotive, Operational and Shaker testing are planned.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT VR5: <i>TWV PROTECTION KITS</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Analysis of Alternatives/ Design and Build Armor Kits	SS/CPFF	OshKosh Truck Corporation:OshKosh, WI	-	1.237		-		-		-	Continuing	Continuing	Continuing
Vulnerability Modeling and Simulation	MIPR	Army Research Lab:Adelphi, MD	-	0.107		-		-		-	Continuing	Continuing	Continuing
Survivability Modeling & Simulation	MIPR	TARDEC:Warren, MI	-	0.250		-		-		-	0.000	0.250	0.000
Subtotal			-	1.594		-		-		-			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support	MIPR	TACOM:Warren, MI	-	0.400		0.600		-		0.600	0.000	1.000	0.000
Subtotal			-	0.400		0.600		-		0.600	0.000	1.000	0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	Various Locations:Various Locations	-	-		2.427		-		2.427	Continuing	Continuing	Continuing
Subtotal			-	-		2.427		-		2.427			

			Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	1.994	3.027	-	3.027			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT VR5: <i>TWV PROTECTION KITS</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Armor Analysis of Alternatives																												
Design and Build Armor Kits																												
Vulnerability Model & Simulation																												
Survivability Model & Simulation																												
Test and Evaluation																												
Program Support																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	PROJECT VR5: <i>TWV PROTECTION KITS</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Armor Analysis of Alternatives	2	2012	3	2012
Design and Build Armor Kits	2	2012	2	2013
Vulnerability Model & Simulation	4	2012	1	2013
Survivability Model & Simulation	2	2012	2	2013
Test and Evaluation	1	2013	4	2013
Program Support	2	2012	4	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>			PE 0604633A: <i>AIR TRAFFIC CONTROL</i>								
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	9.559	22.900	9.769	-	9.769	9.913	6.593	6.812	5.244	Continuing	Continuing
586: <i>AIR TRAFFIC CONTROL</i>	9.559	22.900	9.769	-	9.769	9.913	6.593	6.812	5.244	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element 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) Up-Armor Non-Recurring Engineering (NRE), and Fixed Base Precision Approach Radar (FBPAR) PrePlanned Product Improvements (P3I). 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.

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 integrates 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 starting with TAIS. TAIS, the Army's Program of Record for Enhanced Flight Traffic Management Services and Airspace Command and Control (AC2), requires the development and testing of web-based services. TAIS P3I include, but are not limited to, developing and testing improvements to the air picture including the addition of Blue Force Tracker (BFT) correlation and radar fusion capability. To facilitate increased maintenance and system support, a remote maintenance capability will be developed for robust maintenance and troubleshooting. TTCS Up-Armor NRE includes approval of the final Analysis of Alternative (AoA) concept design, award of a design contract based on this design, and production of an Up-Armor TTCS prototype.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604633A: <i>AIR TRAFFIC CONTROL</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	9.892	22.922	10.023	-	10.023
Current President's Budget	9.559	22.900	9.769	-	9.769
Total Adjustments	-0.333	-0.022	-0.254	-	-0.254
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.254	-	-0.254
• Other Adjustments 1	-0.333	-0.022	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604633A: <i>AIR TRAFFIC CONTROL</i>	PROJECT 586: <i>AIR TRAFFIC CONTROL</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
586: <i>AIR TRAFFIC CONTROL</i>	9.559	22.900	9.769	-	9.769	9.913	6.593	6.812	5.244	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) Up-Armor Non-Recurring Engineering (NRE), and Fixed Base Precision Approach Radar (FBPAR) PrePlanned Product Improvements (P3I). 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.

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 integrates 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 starting with TAIS. 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 P3I include, but are not limited to, developing and testing improvements to the air picture including the addition of Blue Force Tracker (BFT) correlation and radar fusion capability. To facilitate increased

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604633A: <i>AIR TRAFFIC CONTROL</i>	PROJECT 586: <i>AIR TRAFFIC CONTROL</i>
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maintenance and system support, a remote maintenance capability will be developed for robust maintenance and troubleshooting. TTCS Up-Armor NRE includes approval of the final Analysis of Alternative (AoA) concept design, award of a design contract based on this design, and production of an Up-Armor TTCS prototype.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>Title: Tactical Airspace Integration System (TAIS)</p> <p align="right">Articles:</p> <p>Description: TAIS Block Upgrade: NRE for Block Upgrade will address requirements stemming from new Joint Capabilities Integration Development System (JCIDS) documents. Airspace Information Center (AIC) and Airspace Integration Improvements Initiatives (AI3) enhancements will be addressed through upgrades to the communications suite through new components such as 117G radios, BFT2/KGV-72, and ADS-B. TAIS Software Enhancements: 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.</p> <p>FY 2012 Plans: Design and develop TAIS service oriented architecture and web services in support of Airspace Command and Control (AC2) and AIC missions. Continue development of airspace deconfliction, flight information/advisory, situational awareness, and rapid clearance of fires capabilities. Continue development of Airspace Integration Improvements Initiative (AI3) initiatives to support dynamic AC2 capabilities and real-time situational awareness. Continue development of TAIS system interfaces to external data sources. Productize Phase III of Air Ground Modernization web services. 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.</p> <p>FY 2013 Plans: Continue to design and develop TAIS service oriented architecture and web services in support of AC2 and AIC missions. Specifically, provide services to generate, display, and disseminate flight advisories. Display and disseminate High and Low altitude Instrument Flight Rules (IFR) route structures, helicopter route structures, navigation information, communications information, refueling information, and terminal area information. Continue development of airspace deconfliction, flight information/advisory, situational awareness, and rapid clearance of fires capabilities. Continue development of AI3 initiatives to support dynamic AC2 capabilities and real-time situational awareness. Continue development of TAIS system interfaces to external data sources.</p>	-	7.065 0	6.758
<p>Title: Air Traffic Navigation Integration and Coordination System (ATNAVICS) Modernization</p> <p align="right">Articles:</p>	0.500 0	13.000 0	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604633A: <i>AIR TRAFFIC CONTROL</i>	PROJECT 586: <i>AIR TRAFFIC CONTROL</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>Description: ATNAVICS is a highly mobile tactical area surveillance and precision approach air traffic control radar 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. Product modernizations include Radar interrogator modernization, and radio upgrades.</p> <p>FY 2011 Accomplishments: The US Army Communications-Electronics Command Engineering Center (CECOM CERDEC) conducted a Mode S Study Support that determined the required operation of the AN/TPX-57 Interrogator for Mode S.</p> <p>FY 2012 Plans: Begin integration of the TPX-57 transponder permitting international standard Mode 5 and Mode S compatibility of the ATNAVICS system</p>				
<p>Title: TAIS Native New Web Services Dev</p> <p align="right">Articles:</p> <p>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.</p> <p>FY 2011 Accomplishments: Designed and developed TAIS web services in support of AC2 and AIC missions. Developed airspace deconflict and flight information/advisory capabilities. Developed improved situational awareness and rapid clearance of fires capabilities. Developed capability to associate Air Tasking Order (ATO) data with Air Tracks on the TAIS display. Developed prototype web services for Air Ground Modernization initiative. Developed capability to receive and display MayDay Messages generated by aircraft in flight.</p>		4.035 0	-	-
<p>Title: TAIS P3I</p> <p align="right">Articles:</p> <p>Description: TAIS P3I include, but are not limited to, developing and providing TAIS dynamic airspace updates to the air picture including the addition of BFT correlation and radar capability.</p> <p>FY 2011 Accomplishments: Began improvement 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. Executed Dynamic Airspace Updates to the Cockpit.</p>		0.844 0	-	-
Title: Advanced Surveillance		0.621	1.428	1.750

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604633A: <i>AIR TRAFFIC CONTROL</i>	PROJECT 586: <i>AIR TRAFFIC CONTROL</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p align="right">Articles:</p> <p>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 (ADS-B), as well as, Mode 5 Level 2, Mode S and similar self reporting technologies.</p> <p>FY 2011 Accomplishments: Integrated passive reception devices into a single engineering and development asset; developed engineering release software to utilize these technologies; and tested these integrated technologies in a live fly field experiment. The associated documentation, analysis and integration data developed will accelerate the technology maturation process leveraged to support future block upgrade activities.</p> <p>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 technologies include ADS-B, as well as, Mode 5 Level 2, Mode S and similar self reporting technologies. Support the continued software development to utilize these technologies. Test these related technologies in a live fly field experiment. The associated documentation, analysis and integration data developed will accelerate the technology maturation process leveraged to support future block upgrade activities.</p> <p>FY 2013 Plans: Supports continued evaluation and down select of commercially available Advanced Surveillance receivers, and integration of receivers into PM Air Traffic Control programs of record, to allow reception of aircraft self reported positional data. Formal testing, including Bold Quest 13 and Network Integration Experimentation (NIE), will include ATC systems where the technology will be proven.</p>		0	0	
<p>Title: TAIS Battle Command (BC) Collapse</p> <p align="right">Articles:</p> <p>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.</p> <p>FY 2011 Accomplishments: Completed second phase of the Dynamic Airspace Collaboration Tool (DACT) to operate on the BC Thin Client and developed airspace control means and conflict detection services on the BC Central Repository.</p>		0.708 0	-	-
<p>Title: Common Tactical Simulator</p> <p align="right">Articles:</p>		-	0.275 0	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604633A: <i>AIR TRAFFIC CONTROL</i>	PROJECT 586: <i>AIR TRAFFIC CONTROL</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>Description: The ATC simulator can simulate a start to finish control effort, meaning MOTS simulation at the airfield for take-off/landing under Visual Flight Rules (VFR), radar simulation for surveillance and precision approach (ATNAVICs), and flight following and airspace deconfliction (TAIS). This will address the 3 primary tactical ATC systems. The system will respond to voice commands and allow for controller error that can be captured and provide corrective actions to the operator. Position of the virtual aircraft must be consistent across each platform. The simulator will support aircraft at slow and fast approaches, hovering aircraft, fast climbing and slow climbing aircraft and even some commercial aircraft.</p> <p>FY 2012 Plans: Prepare the System Specification for the development of an initial prototype ATC Common Simulator.</p>				
<p>Title: Tactical Terminal Control System (TTCS) Up-armor</p> <p>Description: TTCS Up-Armor includes Non-recurring Engineering (NRE) to perform an Analysis of Alternative (AoA) concept design, award a design contract based on this concept, and produce an Up-Armor TTCS prototype.</p> <p>FY 2011 Accomplishments: Completed closeout of the Up-Armor Non-Recurring Engineering (NRE) efforts. Performed Analysis of Alternatives (AoA)/Trade Study to determine how best to meet the DA survivability requirement for the future TTCS NRE effort. Produced Statement of Work (SOW) as AoA deliverable to support follow-on design effort. Approved final AoA concept design and complete concept model.</p>		0.195 0	-	-
<p>Title: Mobile Tower System (MOTS)</p> <p>Description: MOTS System Development, Demonstration (SDD) and Testing</p> <p>FY 2011 Accomplishments: Completed Developmental Testing and Initial Operational Test and Evaluation (IOTE). Extended SDD contract period of performance to (1) address IOTE Human Factors and Safety deficiencies and (2) modify system design to mitigate production cost, performance, and schedule risks. Issued Low Rate Initial Production Contract solicitation and evaluated contractor proposal.</p>		1.777 0	-	-
<p>Title: Tech and Log Support</p> <p>Description: Technical and logistics services in support of PM ATC.</p> <p>FY 2011 Accomplishments:</p>		0.763 0	1.019 0	1.154

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604633A: <i>AIR TRAFFIC CONTROL</i>	PROJECT 586: <i>AIR TRAFFIC CONTROL</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Continued technical and logistic services in support of PM ATC. FY 2012 Plans: Continue technical and logistic services in support of PM ATC. FY 2013 Plans: Continue technical and logistic services in support of PM ATC.			
Title: Program Management Support Description: Program Management Support of PM ATC. FY 2011 Accomplishments: Continued program management in support of PM ATC. FY 2012 Plans: Continue program management in support of PM ATC. FY 2013 Plans: Continue program management in support of PM ATC.	Articles: 0.116 0	0.113 0	0.107
Accomplishments/Planned Programs Subtotals	9.559	22.900	9.769

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Air Traffic Control (AA0050): <i>Air Traffic Control</i>	82.374	114.844	47.235		47.235		114.165	100.999	101.629	Continuing	Continuing

D. Acquisition Strategy
This project is comprised of multiple systems supporting ATC development and test efforts. While the detailed acquisition strategy varies by program, the general strategy for each program is to complete development testing efforts through contract modifications, engineering service tasks, and new/follow-on contracts. 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, as well as current aircraft self-reporting transponders.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604633A: <i>AIR TRAFFIC CONTROL</i>	PROJECT 586: <i>AIR TRAFFIC CONTROL</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	PM ATC:Redstone Arsenal, AL	0.116	0.113		0.107		-		0.107	Continuing	Continuing	Continuing
Subtotal			0.116	0.113		0.107		-		0.107			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TAIS (Includes P3I/Native New Web Services Dev)	SS/T&M	General Dynamics C4S:Huntsville, AL	-	7.065		6.758		-		6.758	Continuing	Continuing	Continuing
TAIS P3I	SS/CPFF	General Dynamics C4S:Huntsville, AL	0.844	-		-		-		-	0.000	0.844	0.000
Advanced Surveillance	Various	Various:Various	0.621	1.428		1.750		-		1.750	Continuing	Continuing	Continuing
ATNAVICS Modernization	SS/CPFF	Raytheon:Marlboro, Mass	0.500	13.000		-		-		-	0.000	13.500	0.000
TAIS Native New Web Services Dev	SS/CPFF	General Dynamics C4S:Huntsville, AL	4.035	-		-		-		-	0.000	4.035	0.000
Common Tactical Simulator	Various	RDEC and:Various	-	0.275		-		-		-	0.000	0.275	0.000
Tech and Log Development Support	Various	PM ATC:Huntsville, AL	0.763	1.019		1.154		-		1.154	Continuing	Continuing	Continuing
TAIS Battle Command Collapse	SS/CPFF	General Dynamics C4S:Huntsville, AL	0.708	-		-		-		-	0.000	0.708	0.000
Tactical Terminal Control System (TTCS)	Various	Various:Various	0.195	-		-		-		-	0.000	0.195	0.000
MOTS System Development and Demo	C/CPFF	Sierra Nevada Corp:Sierra, NV	1.372	-		-		-		-	0.000	1.372	0.000
MOTS	Various	RDEC and Various:Various	0.405	-		-		-		-	0.000	0.405	0.000
Subtotal			9.443	22.787		9.662		-		9.662			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604633A: <i>AIR TRAFFIC CONTROL</i>				PROJECT 586: <i>AIR TRAFFIC CONTROL</i>				
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	9.559	22.900		9.769		-		9.769			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604633A: <i>AIR TRAFFIC CONTROL</i>	PROJECT 586: <i>AIR TRAFFIC CONTROL</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
MOTS Milestone C																												
Advanced Surveillance																												
Common Tactical Simulator																												
TTCS																												
ATNAVICS																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604633A: <i>AIR TRAFFIC CONTROL</i>	PROJECT 586: <i>AIR TRAFFIC CONTROL</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MOTS Milestone C	2	2012	2	2012
Advanced Surveillance	2	2011	4	2017
Common Tactical Simulator	2	2012	4	2012
TTCS	2	2011	4	2011
ATNAVICS	3	2011	4	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604641A: <i>TACTICAL UNMANNED GROUND VEHICLE</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	-	13.141	-	13.141	-	-	-	-	Continuing	Continuing
DV7: <i>Small Unmanned Ground Vehicle</i>	-	-	13.141	-	13.141	-	-	-	-	Continuing	Continuing

Note

The Small Unmanned Ground Vehicle (SUGV) EMD effort will continue under an alternate contract. Funding in FY13 will continue under Tactical Unmanned Ground Vehicle (Small Unmanned Ground Vehicle) Program Element 0604641A Project DV7.

A. Mission Description and Budget Item Justification

One program is covered by the Tactical Unmanned Ground Vehicle Program Element 0604641A: The Small Unmanned Ground Vehicle (SUGV) platform.

The 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 Increment 1 XM1216: The INC 1 SUGV is based on the IBCT Capability Production Document (CPD) threshold requirements. The SUGV 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 Independent Verification Test (IVT) 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 Initial Qualification Test (IQT). Enhancements included improved seals on the drive motors, design changes to the drive motor themselves, Electromagnetic Interference (EMI) improvements to reduce the emissions and susceptibility of the SUGV platform and operator control unit enhancements. The XM1216 is currently conducting missions in support of units in OEF.

SUGV Planned Product Improvements (Increment 1 Follow on) designated as the XM1216E1: The SUGV configuration for Low Rate Initial Production (LRIP) moving to Full Rate Production (FRP) is based on the SUGV IBCT CPD Threshold Requirements. It will weigh 35 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 National Security Agency (NSA) compliant radio from the Joint Tactical Radio system program, improved hand controller, the capability to provide grid location of the enemy, and the following capability to mount payloads: tether spooler, manipulator arm, Chemical, Biological, Radiological, Nuclear (CBRN) suite and Embedded-Tactical Engagement Simulation System (E-TESS).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604641A: <i>TACTICAL UNMANNED GROUND VEHICLE</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	13.141	-	13.141
Total Adjustments	-	-	13.141	-	13.141
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	13.141	-	13.141

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604641A: <i>TACTICAL UNMANNED GROUND VEHICLE</i>	PROJECT DV7: <i>Small Unmanned Ground Vehicle</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
DV7: <i>Small Unmanned Ground Vehicle</i>	-	-	13.141	-	13.141	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

The Small Unmanned Ground Vehicle (SUGV) EMD effort will continue under an alternate contract. Funding in FY13 will continue under Tactical Unmanned Ground Vehicle (Small Unmanned Ground Vehicle) Program Element 0604641A Project DV7.

A. Mission Description and Budget Item Justification

One program is covered by the Tactical Unmanned Ground Vehicle Program Element 0604641A: The Small Unmanned Ground Vehicle (SUGV) platform.

The Small Unmanned Ground Vehicle (SUGV), designated as the XM1216, 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 Increment 1 XM1216: The INC 1 SUGV is based on the EIBCT Capability Production Document (CPD) threshold requirements. The SUGV 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 Independent Verification Test (IVT) 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 Initial Qualification Test (IQT). Enhancements included improved seals on the drive motors, design changes to the drive motor themselves, Electromagnetic Interference (EMI) improvements to reduce the emissions and susceptibility of the SUGV platform and operator control unit enhancements. The XM1216 is currently conducting missions in support of units in OEF.

SUGV Planned Product Improvements (Increment 1 Follow on) designated as the XM1216E1: The SUGV configuration for Low Rate Initial Production (LRIP) moving to Full Rate Production (FRP) is based on the SUGV IBCT CPD Threshold Requirements. It will weigh 35 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 National Security Agency (NSA) compliant radio from the joint tactical radio system program, improved hand controller, the capability to provide grid location of the enemy, and the capability to mount the following payloads: tether spooler: manipulator arm: Chemical, Biological, Radiological, Nuclear (CBRN) suite and Embedded-Tactical Engagement Simulation System (E-TESS).

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013
Title: SUGV Product Improvement	-	-	13.141

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604641A: <i>TACTICAL UNMANNED GROUND VEHICLE</i>	PROJECT DV7: <i>Small Unmanned Ground Vehicle</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Description: Funding is provided for the following effort</p> <p>FY 2013 Plans: Complete government IQT testing in the November 2012-April 2013 timeframe. TT/FDTE/LUT will be conducted in the April-August 2013 timeframe leading up to a Milestone C LRIP Decision in 4Q13. 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 data link capability, manipulator arm, and ETESS. Conduct Contractor and Government testing on SUGV Pre-Production prototypes to evaluate performance: environments, platform mobility, radio performance for Latency and range, EO/IR performance for personnel detection, payloads, shock/vibration, RAM, Logistics and Training. Conduct LUT to assess operational utility and performance of the SUGV. The IQT and LUT testing will provide data to support the Production Decision that the fully integrated SUGV meets CDD requirements for mobility, payloads, EO/IR detection and National Security Agency/Information Assurance (NSA/IAS) compliance. Develop and provide all documentation, technical manuals and training products to support logistics, supportability and training requirements required to field the SUGV.</p>			
Accomplishments/Planned Programs Subtotals	-	-	13.141

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>						
• F00001: <i>OPA BCT Unmanned Ground Vehicle</i>	27.433	24.805	83.937		83.937		122.731	149.748	67.266	Continuing	Continuing
• 0604641A Project FC4: <i>RDTE FCS Unmanned Ground Vehicles</i>	200.000	35.966								0.000	235.966

D. Acquisition Strategy
Funding continues engineering, manufacturing development follow-on ECP efforts leading to seven pre-production prototypes. End state leads to a Full Rate Production(FRP) decision. The FRP award will be accomplished through full and open competition.

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604641A: <i>TACTICAL UNMANNED GROUND VEHICLE</i>	PROJECT DV7: <i>Small Unmanned Ground Vehicle</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Incr 1 Production Delivery (Brigades 2-5)								■																				
Incr 1 Production Delivery (LRIP Brigades 6-7)												■																
Follow On Production																												
Milestone C Low Rate Initial Production Review (MSC/LRIP REV)																■												
SUGV Follow On Initial Operational Capability																												
SUGV Prototype Build/Delivery								■																				
SUGV Testing (IQT)												■																
SUGV Testing (LUT)																■												
SUGV Follow On CDR				■																								
SUGV EMD Bridging Effort Contract Award								■																				
SUGV EMD Follow on Contract Award												■																

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604641A: <i>TACTICAL UNMANNED GROUND VEHICLE</i>	PROJECT DV7: <i>Small Unmanned Ground Vehicle</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Incr 1 Production Delivery (Brigades 2-5)	4	2012	1	2013
Incr 1 Production Delivery (LRIP Brigades 6-7)	2	2013	3	2013
Follow On Production	2	2014	4	2017
Milestone C Low Rate Initial Production Review (MSC/LRIP REV)	4	2013	4	2013
SUGV Follow On Initial Operational Capability	2	2015	2	2015
SUGV Prototype Build/Delivery	4	2012	4	2012
SUGV Testing (IQT)	1	2013	3	2013
SUGV Testing (LUT)	3	2013	4	2013
SUGV Follow On CDR	4	2011	4	2011
SUGV EMD Bridging Effort Contract Award	1	2012	1	2012
SUGV EMD Follow on Contract Award	4	2012	4	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>			PE 0604642A: <i>LIGHT TACTICAL WHEELED VEHICLES</i>								
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	1.918	69.981	-	-	-	-	-	-	-	Continuing	Continuing
E40: <i>LTV Prototype</i>	1.918	69.981	-	-	-	-	-	-	-	Continuing	Continuing

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 are to resolve current known safety issues/restrictions, comply with 2004 HMMWV ORD requirements and obtain Full Material Release for vehicles fielded with Fragmentation armor under Urgent Material Release (threshold ~16,500lbs Gross Vehicle Weight). FY12 funding supports the Army initiative for an Up Armored HMMWV (UAH) Program which will integrate enhanced capabilities into the Expanded Capacity Vehicle (ECV) chassis. The intent of the program is to develop solutions to resolve safety restrictions, enhance fuel economy, restore automotive/mobility performance lost with the addition of armor, provide a chassis that could potentially accept future survivability improvements and provide a long term sustainment alternative based on current production obsolescence.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	1.990	-	-	-	-
Current President's Budget	1.918	69.981	-	-	-
Total Adjustments	-0.072	69.981	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.072	69.981	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604642A: <i>LIGHT TACTICAL WHEELED VEHICLES</i>	PROJECT E40: <i>LTV Prototype</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
E40: <i>LTV Prototype</i>	1.918	69.981	-	-	-	-	-	-	-	Continuing	Continuing
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 are to resolve current known safety issues/restrictions, comply with 2004 HMMWV ORD requirements and obtain Full Material Release for vehicles fielded with Fragmentation armor under Urgent Material Release (threshold ~16,500lbs Gross Vehicle Weight). FY12 funding supports the Army initiative for an Up Armored HMMWV (UAH) Program which will integrate enhanced capabilities into the Expanded Capacity Vehicle (ECV) chassis. The intent of the program is to develop solutions to resolve safety restrictions, enhance fuel economy, restore automotive/mobility performance lost with the addition of armor, provide a chassis that could potentially accept future survivability improvements and provide a long term sustainment alternative based on current production obsolescence.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: MECV Program</p> <p align="right">Articles:</p> <p>Description: Funding was provided for MECV Phase I planning and development.</p> <p>FY 2011 Accomplishments: MECV program in-house support and test planning were provided. Engineering support will be funded in the second quarter of FY 2012.</p>	1.918 0	-	-	-	-
<p>Title: Enhanced Powertrain Suspension Improvement Program (EPSI)</p> <p align="right">Articles:</p> <p>Description: EPSI Program Management and Source Selection Evaluation Board (SSEB)</p> <p>FY 2012 Plans: Program and Source Selection support.</p>	-	23.564 0	-	-	-
<p>Title: EPSI Contract Award</p> <p align="right">Articles:</p> <p>Description: Single vendor contract award.</p>	-	28.692 0	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604642A: <i>LIGHT TACTICAL WHEELED VEHICLES</i>	PROJECT E40: <i>LTV Prototype</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<i>FY 2012 Plans:</i> Single vendor contract award will be selected to produce and test EPSI solution. Estimated contract planned award is 3Q FY13.					
<i>Title:</i> EPSI Testing <i>Description:</i> Multiple test efforts. Planned test efforts include automotive, endurance and log demo.	-	17.725 0	-	-	-
<i>FY 2012 Plans:</i> Planned test efforts include automotive, endurance and log demo. Planned contract award date is 3Q FY13.					
Accomplishments/Planned Programs Subtotals	1.918	69.981	-	-	-

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• DV0230: <i>HMMWV RECAPITALIZATION PROGRAM DV0230</i>	989.067	4.313	0.000	271.000	271.000					0.000	1,264.380

D. Acquisition Strategy
The HMMWV Enhanced Powertrain Suspension Improvement (EPSI) Program strategy involves best value acquisition and will evaluate proposals and test vehicles under a full and open competition Request for Proposal (RFP), resulting in one Cost Plus Fixed Fee (CPFF) contracts. It is recommended that the system will enter into the acquisition life-cycle at pre-Milestone C. The new HMMWV EPSI systems are anticipated to be full materiel released as an upgrade on the current M1151 series UAHs. Performance Qualification testing will occur in a relevant environment at Government test facilities. The main goal of testing for this program is to ensure that the EPSI meets all threshold requirements of the performance specification, to include validation of Up-Armored HMMWV (UAH) automotive performance through Production Qualification Testing (PQT) and Reliability and Maintainability (RAM).

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604642A: <i>LIGHT TACTICAL WHEELED VEHICLES</i>	PROJECT E40: <i>LTV Prototype</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EPSI Contract Award	C/CPFF	TBS:TBS	-	28.692		-		-		-	0.000	28.692	0.000
Subtotal			-	28.692		-		-		-	0.000	28.692	0.000

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MECV Program Support	MIPR	PM LTV:TACOM Warren, MI	0.334	-		-		-		-	0.000	0.334	0.000
EPSI Program Management and SSEB	MIPR	PM LTV, TACOM:Warren, MI	-	23.444		-		-		-	0.000	23.444	0.000
EPSI Program Support	MIPR	AEC:Aberdeen Proving Ground, MD	-	0.120		-		-		-	0.000	0.120	0.000
MECV Program Engineering Support	MIPR	TARDEC and PM LTV:TACOM Warren, MI	1.525	-		-		-		-	0.000	1.525	0.000
Subtotal			1.859	23.564		-		-		-	0.000	25.423	0.000

Remarks
Not applicable

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EPSI Testing	C/CPFF	TBS:TBS	-	17.725		-		-		-	0.000	17.725	0.000
MECV Test Planning	MIPR	ATC:Aberdeen Proving Grounds, MD	0.059	-		-		-		-	0.000	0.059	0.000
Subtotal			0.059	17.725		-		-		-	0.000	17.784	0.000

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604642A: <i>LIGHT TACTICAL WHEELED VEHICLES</i>	PROJECT E40: <i>LTV Prototype</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
RFP / Source Selection Evaluation Board (SSEB)	4	2012	3	2013
Contract Award	3	2013	3	2013
Auto, Endurance and Production Qualification Testing (PQT),	4	2013	2	2014
Log Demo	1	2014	2	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	471.559	298.589	-	-	-	-	-	-	-	Continuing	Continuing
FC2: <i>BCT Equipping Evaluation</i>	471.559	298.589	-	-	-	-	-	-	-	Continuing	Continuing

Note

FY13: Program was restructured to meet emerging requirements.

A. Mission Description and Budget Item Justification

This program has no FY 2013 Base or OCO request.

B. Program Change Summary (\$ in Millions)

	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	568.711	383.872	490.045	-	490.045
Current President's Budget	471.559	298.589	-	-	-
Total Adjustments	-97.152	-85.283	-490.045	-	-490.045
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-8.433	-			
• SBIR/STTR Transfer	-13.746	-			
• Other Adjustments 1	-73.406	-85.283	-	-	-
• Other Adjustments 2	-	-	-158.672	-	-158.672
• Other Adjustments 3	-1.567	-	-331.373	-	-331.373

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
FC2: <i>BCT Equipping Evaluation</i>	471.559	298.589	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note
The ADM, dated February 2011, officially terminated the Boeing portion of this PE in April 2011.

A. Mission Description and Budget Item Justification
This program has no FY 2013 Base or OCO request.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Title: Special Termination Cost for Boeing</p> <p style="text-align: right;">Articles:</p> <p>Description: These funds are provided for the termination of the Boeing contract.</p> <p>FY 2011 Accomplishments: Special Termination Costs for Boeing. 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 will be dispositioned IAW NSA requirements.</p>	33.349 0	-	-
<p>Title: Special Termination Cost for Networks</p> <p style="text-align: right;">Articles:</p> <p>Description: These funds are provided for the termination of the Network contracts.</p> <p>FY 2011 Accomplishments: Special Termination Costs for Networks 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 will be dispositioned IAW NSA requirements.</p>	21.566 0	-	-
<p>Title: Special Termination of SUGV</p> <p style="text-align: right;">Articles:</p>	38.511 0	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>Description: These funds are provided for termination of SUGV</p> <p>FY 2011 Accomplishments: Special Termination Costs for Small Unmanned Ground Vehicle. 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 will be dispositioned IAW NSA requirements.</p>				
<p>Title: GOVERNMENT: (SYSTEMS ENGI & PM - INC 1) & (BCT Tech Integration Support & Facility - WSMR)</p> <p>Description: Funding was provided for systems engineering and project management for Increment 1 activities for Network Integration Evaluation 11.1</p> <p>FY 2011 Accomplishments: Ensured the government and soldiers best interest/values were considered during the following: System of System (SoS) review, 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. In support of NIE 11.1 this effort included system engineering and analysis effort required to support integration and testing.</p>		<p>9.101 0</p>	-	-
<p>Title: GOVERNMENT: (SYS TEST & EVAL -STE- & M&S - IBCT INC 1) & (NK Integration M&S)</p> <p>Description: Funding was provided for NIK and SUGV government support.</p> <p>FY 2011 Accomplishments: :: These funds supported the Network Integration Kit (NIK) and Small Unmanned Ground Vehicle (SUGV) production verification and testing at ATEC test centers. They provided for the high level planning and execution of the Government Technical Tests, Increment 1 Initial Operational Test and Comparative Test to include range support, threat, data collection and analysis. Conducted detailed planning for range support for production verification testing of the NIK and SUGV during the Limited User Test (LUT) conducted in conjunction with NIE 11-2. It provided for the overarching Modeling & Simulation (M&S) integration activity within the Government, to include responsibility for integration of M&S and Verification, Validation, and Accreditation (VV&A) in support of the Army-led Increment 1 comparative LUT. Provided for a realistic, operationally relevant warfighter</p>		<p>17.958 0</p>	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
environment, at the brigade level and higher to allow a single live Combined Arms Battalion (CAB) conduct LUT operations. This was done with soldiers controlling two additional CABs, with the Brigade headquarters, and elements of the addition Brigade force represented in simulated environment.				
<p>Title: GOVERNMENT OTHER -</p> <p>Description: Funding was provided to support both PM and Non-PM government offices.</p> <p>FY 2011 Accomplishments: These funds proved support to both PM and non-PM government support offices that provide technical expertise (PEO C3T, TRADOC, UMS, CTO, ARL, FFID, etc) This also included other technical support contracts like the Sandia Labs, MITRE, Software Steering Committee from University South California and University of Maryland which also reviewed software performance, logistics products, network requirements and capabilities.</p>		<p>Articles:</p> <p>3.146 0</p>	-	-
<p>Title: Government Contract Close Out</p> <p>Description: Government's efforts to terminate the Boeing contract.</p> <p>FY 2011 Accomplishments: Approximately 26 man years of government personnel positions to begin Contract Close-Out and Termination of Boeing and other SETA contracts.</p> <p>FY 2012 Plans: Approximately 45 man years of government personnel positions to continue Contract Close-Out and Termination of Boeing and other SETA contracts.</p>		<p>Articles:</p> <p>5.302 0</p>	9.000 0	-
<p>Title: Government - SyS Engin an PM - NIE</p> <p>Description: Provided for SoSI staff and facilities that support the following three main operations: Capability Package (CP) Future which provided planning for future NIE 11.2 and 12.1. PM Current which provided detail planning and execution of NIE 11.2 and 11.1, Headquarters management and oversight of the complete Agile process. Funding for FY11 supported NIE 11.2 and 12.1.</p> <p>FY 2011 Accomplishments:</p>		<p>Articles:</p> <p>99.031 0</p>	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>NIE 11.2 was the initial NIE in the Army's Agile process. During NIE 11.2 SoSI evaluated six (6) Systems Under Test (SUE)s which included; Blue Force Tracker, Joint Capability Release (JCR), Joint Tactical Radio Systems (JTRS)'s Handheld, Manpack, System (HMS) and Ground Mobile Radio (GMR), Increment 1 Network Integration Kit (NIK), Mounted Soldier System (MSS) and SPIDER Network Munitions; and 21 Systems Under Evaluation (SUE)s, which included; company command post (CoCP), connecting Soldiers to Digital Applications (CSDA), Chalcogenide-Ramon Access Memory (C-RAM), Current Force Unattended Ground Sensors (CF UGS), Expendable Unattended Ground Sensors (E-UGS), Medical Comm. For Combat Casualty Care (MC4), Nett Warrior Surrogate (NWS), Puma Unmanned Aerial System, RITE 3G, Wireless Network After Next (WNAN), Battle Command Collapse (BCC), Company Intelligence support Teams (CoIST), Combat Outpost Survival Force Protection System (COSFPS), Fires Threads ? (PFED, M1200 Knight, FOS, AC2), Intelligent Power, JCR LOG (MTS), LRAS3 Streaming Video, Network Lethality, Real World Convoy Mission Rehearsal System (RWCMRS), Solar Stik, and Transformation Applications.</p> <p>During NIE 12.1 the SoSI evaluated two (2) SUTs which included: Rifleman's Radio IOTE, SRWNM and 46 SUEs which included; 3 under ?Upper TI/HCLOS/SATCOM?, 8 under ?Aerial Tier?, 6 under ?Soldier Connectivity?, 2 under ?Gateway/Bridge/Router?, 4 under ?Mission Command/Fusion/Intelligence?, 9 under ?Non-Network?, 2 under ?NETOPS?, 4 under ?Cellular/Soldier Radio?, 1 under ?Other? and 7 SUEs which were re-evaluated from 11.2.</p> <p>In support of these systems being evaluated SoSI elements completed the following activities:</p> <p>CP Future: Conducted planning with government and contract personnel who developed the overarching plans for Network Integration Evaluation (NIE) events 11.1 and 11.2. CP Future the Capability Package (CP) which included; defining what was affordable and defining what could be realistically accomplished within the Network Integration Evaluation (NIE) window. They conducted requirements traces across the NIE portfolio by conducting current requirements analysis, identifying gaps and overlaps, and identifying solution sets. They conducted Network Analysis for NIE by completing initial and high level fidelity reviews. In support of the NIE; they conducted sources sought procedures, completed evaluations of submissions, planned vignettes, completed architecture analysis, developed and published which systems will participate in NIE 11.1 and 11.2 as either a System Under Test (SUT) or a System Under Evaluation (SUE) and defined what the Tech Base capabilities will be. They developed and manage an tier 1 Integrated Master Schedule (IMS).</p> <p>CP Current conducted current operations with government and contract personnel in order to execute the plans developed by CP Future for NIE11.1 and 11.2. Conducted daily operations and the execution of the plans by; maintaining a daily battle rhythm, synchronized calendar, conducting operational meetings, developing and submitting reports, tracking and maintaining accountability of all assets and the operational scheduling of assets and personnel. They developed the brigade level architecture from the top level plan provided by CP Future which included; the development of detailed network designs for the Systems Under Test (SUTs) and Systems Under Evaluation (SUEs) which were assigned to the maneuver brigades during the NIE 11.1 and 11.2, conducted detailed planning and development of the architecture and vignettes, and information assurance. They established</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
metrics and measurement requirements across the SUTs/SUEs, and identified and implemented tools, data points and data collection measures for both of the NIEs. They conducted test planning and management which included, conducting coordination of requirements with Army Evaluation Command (AEC), Operational Test Center (OTC), and Developmental Test Command (DTC). This coordination included; the development and procurement of modeling and simulation tools, instrumentation for data collection, facilities required to store and maintain equipment, facilities required to integrate capabilities, other test equipment, for REDFORCE systems.				
<p>Title: NIE TEST 11.2/12.1</p> <p align="right">Articles:</p> <p>Description: Funding was provided for the following effort: Planned for and conduct detailed experiments, tests, and evaluations of potential Network, Software and Hardware systems for procurement and integration into the Army's Warfighter system.</p> <p>FY 2011 Accomplishments: Government personnel developed test plans and supported test execution. Government engineering staff and assessment personnel completed analysis and assessments of all experiments and test which future improved the Army's network capability. They finalized the preparation, planning and coordination of all experiments and test events with ATEC, OTC, DTC, BMC and PM. Conducted all experiments and tests which included procurement of range time and government and contract experimentation and test support. Developed all reports for test engineering support. Prepared and procured test infrastructure to support all experiments and tests. Procured test instrumentation and code or procure M&S models to support brigade testing and simulation. AEC, OTC, and DTC costs for test support at APG, EPG, and WSMR. Included costs for instrumentation and data collection on all platforms/systems required to support Army analysis of the brigade's military effectiveness. Included costs of facilities required to store and maintain equipment, integrate capabilities, management of the test/experiment and support all demonstrations experiments and tests. Included costs for DREN capability and other electronic infrastructure data transfer medias between APG, EPG, FT Bliss and White Sands Missile Range. . They conducted experimentations, tests, and evaluations by coordinating and procuring range resources which included range time, range personnel, test engineering support, operators and subject matter experts on systems under evaluation. These funds included the costs of managing the test/experiment and the support of all demonstrations experiments and tests. Included costs for distributed networking capability (i.e. DREN, I/O Range, circuits, etc) and other electronic infrastructure data transfer medias between APG, EPG, FT Bliss and White Sands Missile Range. Conduct coordination with AEC on the development of System Evaluation Plans (SEP) and Operational Milestone Assessment Reports (OMAR) and maintain all data bases of evaluation analysis.</p>		46.808 0	-	-
<p>Title: NIE SUE - 11.2</p> <p align="right">Articles:</p>		14.140 0	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>Description: Funds were provided to support integration of both industry and DOD emerging and existing technologies into the current Army force structure. This includes Field Service Representative support for integration and test efforts for 11.2. These events included LOADEXs, COMMEs, PILOTs and execution of the Network Integration Evaluation (NIE) event.</p> <p>FY 2011 Accomplishments: Provided funding to support integration and evaluation of SUTs and SUES during the Army's Network Integration Evaluation (NIE). These funds covered the NIE participant's (Emerging and existing technologies PMs and contractors) costs for; travel, and shipment of equipment, Contractor Field Service Representatives (CFSRs) and Government Subject Matter Experts (GSMEs) required to support integration activities, integration kit development, and the purchase of additional prototypes that were needed to effectively complete detailed evaluations of the current brigade. It included costs for the development and fabrication of integration hardware and software. The NIE onsite preparation period began with a Load-Exercise (LOADEX) followed by a Communication Exercise (COMME) conducted at FT Bliss TX (FTBX). The participating units then deployed to the tactical training/evaluation area (White Sands Missile Range, NM (WSMR) to complete their comprehensive rehearsal (4 weeks) in preparation for the detailed Network Integration Evaluation (2 weeks) event.</p>				
<p>Title: NIE SUE 12.1</p> <p align="right">Articles:</p> <p>Description: Funds were provided to support integration of both industry and DOD emerging and existing technologies into the current Army force structure. This includes Field Service Representative support for integration and test efforts for 12.1. These events included LOADEXs, COMMEs, PILOTs and execution of the Network Integration Evaluation (NIE) event.</p> <p>FY 2011 Accomplishments: Provided funding to support integration and evaluation of SUTs and SUES during the Army's Network Integration Evaluation (NIE). These funds covered the NIE participant's (Emerging and existing technologies PMs and contractors) costs for; travel, and shipment of equipment, Contractor Field Service Representatives (CFSRs) and Government Subject Matter Experts (GSMEs) required to support integration activities, integration kit development, and the purchase of additional prototypes that were needed to effectively complete detailed evaluations of the current brigade. It included costs for the development and fabrication of integration hardware and software. The NIE onsite preparation period began with a Load-Exercise (LOADEX) followed by a Communication Exercise (COMME) conducted at FT Bliss TX (FTBX). The participating units then deployed to the tactical training/evaluation area (White Sands Missile Range, NM (WSMR) to complete their comprehensive rehearsal (4 weeks) in preparation for the detailed Network Integration Evaluation (2 weeks) event.</p>		34.298 0	-	-
<p>Title: NIE SUE - 12.2</p> <p align="right">Articles:</p>		6.543 0	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>		PROJECT FC2: <i>BCT Equipping Evaluation</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2011
<p>Description: Funds were provided to support integration of both industry and DOD emerging and existing technologies into the current Army force structure. This includes all integration and test efforts for 12-2. These events included the Network Integration Rehearsals (NIR)s, LOADEXs, COMMEXs, PILOTs and execution of the Network Integration Evaluation (NIE) event.</p> <p>FY 2011 Accomplishments: Provided funding to support integration and evaluation of SUTs and SUEs during the Army's Network Integration Evaluation (NIE). These funds covered the NIE participant's (Emerging and existing technologies PMs and contractors) costs for; travel, and shipment of equipment, Contractor Field Service Representatives (CFSRs) and Government Subject Matter Experts (GSMEs) required to support integration activities, integration kit development, and the purchase of additional prototypes that were needed to effectively complete detailed evaluations of the current brigade. It included costs for the development and fabrication of integration hardware and software. The NIE onsite preparation period began with a Load-Exercise (LOADEX) followed by a Communication Exercise (COMMEX) conducted at FT Bliss TX (FTBX). The participating units then deployed to the tactical training/evaluation area (White Sands Missile Range, NM (WSMR) to complete their comprehensive rehearsal (4 weeks) in preparation for the detailed Network Integration Evaluation (2 weeks) event.</p>				FY 2012
				FY 2013
<p>Title: NIE Infrastructure</p> <p align="right">Articles:</p> <p>Description: Provided for Infrastructure, (facilities, IT support, computers, Black Berries, program IA, etc.) at all SoSI locations.</p> <p>FY 2011 Accomplishments: Provided for setup, utilities, furniture, equipment and maintenance, of all facilities at Fort Bliss TX, (FTB), White Sands Missile Range NM (WSMR) , Warren MI, Picatinny NJ, Aberdeen Proving Ground, MD (APG), Included lease and maintenance of GSA/ GFX vehicles that supported NIR/NIE 11.2 and 12.1at FTB/WSMR. Included costs of facilities required to store/ maintain/ integrate capabilities on to the platforms which participated in NIE 11-2 and 12-1.</p>				16.900 0
				-
				-
<p>Title: Government Other - CIO</p> <p align="right">Articles:</p> <p>Description: These funds provided for CIO support</p> <p>FY 2011 Accomplishments: These funds provided for Information and technology support in Warren MI (WM), Aberdeen Proving Ground, (APG), Fort Bliss Texas (FTBX), and White Sands Missile Range, NM (WSMR) a long with local contractor fabrication support, material and movement of equipment, monthly services of Black Berries / Air cards, and SIPRNET service. It also provided for computer</p>				11.521 0
				-
				-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
hardware and software and software licenses for the 350+ assigned to the organization. It also provided funds to Setup and maintain the SoSI?s knowledge management system, ?SharePoint?.				
<p>Title: Government Other - PAO/SP30</p> <p align="right">Articles:</p> <p>Description: These funds provided for Strategic Plans, Programs, Policy, & Operations (SP3O) and Public Affairs Office.</p> <p>FY 2011 Accomplishments: These funds provided for oversight of the strategic planning for SoSI, the development, execution and sustainment of the daily plans, programs and policies, and conducting the day-to-day operations. It provided for the establishment and management effort for the SoSI website, general supplies and facility contract management. At SoSI?s four major operating locations: Warren MI, Aberdeen Proving Ground, (APG), Fort Bliss Texas (FTBX), and White Sands Missile Range, NM (WSMR); these funds provided for general operating supplies, copiers/printers and their maintenance/service agreements, shredding services, Video Teleconferencing (VTC) services, learning center training and its associated travel costs, SoSI?s fair share for the connectivity and maintenance of the Total Employee Training (TED) system, Master Black Belt support, Black Belt training and execution and FEDEX & general mailing costs. At Warren it provided for rent, all utilities, and yearly custodial services, maintaining the gate and key entry systems. At APG it provided for the upgrades required to the BRAC facility. It funded Capability Demonstrations Logistics Support, and other event support for PAO.</p>		4.068 0	-	-
<p>Title: GOV Received Boeing SOSCOE and other Software for Storage</p> <p align="right">Articles:</p> <p>Description: The government received Boeing SOSCOE and other software for storage and potential future usage.</p> <p>FY 2011 Accomplishments: These funds were used for the government to receive Boeing SOSCOE and other software for storage and potential future usage. The government at AMRDEC, in conjunction with the COE effort, is relocating government systems, such as FBCB2 and JCR, and contractor systems, such as SOSCOE, to determine the best algorithm and capability from all available software for future COE applications.</p>		7.022 0	-	-
<p>Title: Title: CONTRACTOR SYSTEM OF SYSTEM ENGINEERING & PROGRAM MANAGEMENT - IBCT INCREMENT1</p> <p align="right">Articles:</p> <p>Description: Funding provided for execution management prior to contract termination.</p> <p>FY 2011 Accomplishments:</p>		0.095 0	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
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. Conducted and completed Earned Value Management, briefings, technology reviews, reports, program risk analysis, subcontract, data, and operations 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.				
<p>Title: Title: CONTRACTOR SUPPORTABILITY/LOGISTICS - IBCT INCREMENT 1</p> <p>Articles:</p> <p>Description: Funding provided for execution management prior to contract termination.</p> <p>FY 2011 Accomplishments: Provided test support for equipment testing and demonstrations for Increment 1 systems supportability performance verification. Validated Maneuver Sustainment and other applicable support concepts during testing, demonstrations, and validations. Ensured sensor collection of data for logistics decision support system software is adequate to support logistics modeling verification and validation efforts. Continued integration of logistics requirements for the IBCT Increment 1 systems. Continued 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. Continued to work 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. Worked ILS assessments to ensure that requirements for RAM-T and supportability were met. Provided support for Logistics Demonstration Planning and readiness reviews, 4QFY10.</p>		1.132 0	-	-
<p>Title: CONTRACTOR FEE - IBCT INCREMENT 1</p> <p>Articles:</p> <p>Description: Funding provided for execution management prior to contract termination.</p> <p>FY 2011 Accomplishments: 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.</p>		0.123 0	-	-
<p>Title: CONTRACTOR SYSTEM OF SYSTEM ENGINEERING & PROGRAM MANAGEMENT - CP 13/14</p> <p>Articles:</p> <p>Description: Funding provided for execution management prior to contract termination.</p> <p>FY 2011 Accomplishments:</p>		42.437 0	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>		PROJECT FC2: <i>BCT Equipping Evaluation</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2011
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, 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 2012
				FY 2013
Title: CONTRACTOR - SUPPORTABILITY/LOGISTICS - CP13/14		Articles:	8.581	-
Description: Funding provided for execution management prior to contract termination			0	-
FY 2011 Accomplishments: Defined, developed & integrated requirements for the CP 13/14 platforms and systems. Continued to ensure Supportability architectures and requirements were implemented during design, development, fabrication and test of CP 13/14 platforms/ systems to achieve Transportability, Deployability and Operational Availability. Planned for, review and provided 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. Continued to 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. Planned, prepared for and completed CDR and IQT ILS assessments to ensure that requirements for RAM-T and supportability were met. Provided Logistics Demonstration Plan.				
Title: CONTRACTOR SOS INTEGRATION - CP 13/14		Articles:	15.165	-
Description: Funding provided for execution management prior to contract termination.			0	-
FY 2011 Accomplishments: Continued systems engineering architecture/decomposition of TRADOC's requirements currently being staffed at system level CDD and development of CP 13/14 Performance Specification: Managed 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.				
Title: CONTRACTOR TRAINING SPECS & PRODUCTS - CP 13/14		Articles:	10.535	-
			0	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>		PROJECT FC2: <i>BCT Equipping Evaluation</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
Description: Funding provided for execution management prior to contract termination.		FY 2011	FY 2012	FY 2013
FY 2011 Accomplishments: Continued 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.				
Title: CONTRACTOR SOS TEST AND M&S - CP 13/14		15.050	-	-
		Articles: 0		
Description: Funding provided for execution management prior to contract termination.				
FY 2011 Accomplishments: Continued 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). Continued development of Brigade Combat Team synthetic environment for use in NMSA and software integration.				
Title: CONTRACTOR FEE - CP 13/14		9.177	-	-
		Articles: 0		
Description: Funding provided for execution management prior to contract termination.				
FY 2011 Accomplishments: 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.				
Title: Systems Under Evaluation (SUE) Integration 12.2 / 13.1		-	109.839	-
			Articles: 0	
Description: Funds were provided to support integration of both industry and DOD emerging and existing technologies into the current Army force structure. This includes Field Service Representative support for integration and test efforts for 12.2 & 13.1 These events included LOADEXs, COMMEEXs, PILOTs and execution of the Network Integration Evaluation (NIE) event.				
FY 2012 Plans: Provided funding to support integration and evaluation of SUTs and SUEs during the Army's Network Integration Evaluation (NIE). These funds covered the NIE participant's (Emerging and existing technologies PMs and contractors) costs for; travel, and shipment of equipment, Contractor Field Service Representatives (CFSRs) and Government Subject Matter Experts (GSMEs) required to support integration activities, integration kit development, and the purchase of additional prototypes that were needed				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
to effectively complete detailed evaluations of the current brigade. It included costs for the development and fabrication of integration hardware and software. The NIE onsite preparation period began with a Load-Exercise (LOADEX) followed by a Communication Exercise (COMMEX) conducted at FT Bliss TX (FTBX). The participating units then deployed to the tactical training/evaluation area (White Sands Missile Range, NM (WSMR) to complete their comprehensive rehearsal (4 weeks) in preparation for the detailed Network Integration Evaluation (2 weeks) event.				
<p>Title: TEST/EXPERIMENTATION for NIE 12.2 / 13.1</p> <p>Articles:</p> <p>Description: Funding is provided for the following effort: Plan for and conduct detailed experiments, tests, and evaluations of potential Network, Software and Hardware systems for procurement and integration into the Army's Warfighter system.</p> <p>FY 2012 Plans: Plan and conduct detailed experiments, tests and evaluations of potential Network, Software and Hardware systems for procurement and integration into the Army's Warfighter system. Complete test planning, coordination of requirements, assets planning, range planning and soldier planning. Conduct test planning and management which includes, conduct coordination of requirements with Army Evaluation Command (AEC), Operational Test Center (OTC), and Developmental Test Command (DTC). This coordination includes; development and procurement of modeling and simulation (M&S) tools, instrumentation for data collection, facilities required to store and maintain equipment, facilities required to integrate capabilities, other test equipment, REDFORCE systems. Conduct experimentation, tests, and evaluation by coordinating and procuring range resources to include range time, range personnel, test engineering support, operators and subject matter experts on systems under evaluation. Includes costs of management of the test/experiment and support all demonstrations experiments and tests. Includes costs for distributed networking capability (i.e. Defense Research and Engineering Network (DREN), I/O Range, circuits, etc) and other electronic infrastructure data transfer medias between APG, Electronic Proving Ground (EPG), FT Bliss and White Sands Missile Range. Conduct coordination with Army Evaluation command (AEC) on the development of System Evaluation Plans (SEP) and Operational Milestone Assessment Reports (OMAR) and maintain all data bases of evaluation analysis</p>		-	45.600 0	-
<p>Title: INTEGRATION : Dir SoS Integration</p> <p>Articles:</p> <p>Description: Provides for Dir SoS Integration staff and facilities that support the following three main operations: Capability Package Future: planning for future NIE events. Capability Package Current: planning and execution of current NIE events. Headquarters management and oversight of the complete Agile process. Funding for FY12 supports two NIE events of approximately 50 SUEs per event.</p>		-	76.200 0	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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FY 2012 Plans:
 Conduct planning with government and contract personnel to develop the overarching plans for Network Integration Evaluation (NIE). Complete Capability Package (CP) development which includes; defining what is affordable and defining what can be realistically accomplished within the NIE window. Conduct requirements traces across the NIE portfolio by conducting current requirements analysis, identifying gaps and overlaps, and identifying solution sets. Conduct Network Analysis for NIE by completing initial and high level fidelity reviews. In support of the NIE; conduct sources sought procedures, Request for Proposal (RFP), complete evaluation of submissions, plan vignettes, complete architecture analysis, develop and publish what systems will participate in NIE as either a System Under Test (SUT) or a System Under Evaluation (SUE) and define what the Tech Base capabilities will be will also be included in the evaluation. Conduct data and configuration management. Conduct vehicle integration and Size, Weight, and Power (SWaP) analysis in support of NIE. Complete development of standardization of hardware and software to optimize integration and interoperability. Develop Network Operations (NETOPS) by defining communications settings, interfaces, and configuration which includes; Traffic Engineering (Shared Networks) for Software Services & Communications in order to maximize the use of bandwidth. Develop and manage an Integrated Master Schedule (IMS). Develop budget and manage budget execution. Develop Knowledge Management plans and procedures in to the NIE. Conduct security planning and technology services. Conduct logistics development and planning in support of the NIE. Coordinate with ASAALT as they assign PMs to be Non-Program of Record (POR) SUE sponsors and as they determine which POR/SUEs are in each NIE. Conduct daily operations and the execution of the NIE plan by; maintaining a daily battle rhythm, synchronized calendar, conducting operational meetings, developing and submitting reports, tracking and maintaining accountability of all assets and the operational scheduling of assets and personnel. Develop brigade level architecture from the top level plan provided by CP Future which includes; the development of detailed network designs for the Systems Under Test (SUTs) and Systems Under Evaluation (SUEs) which are assigned to the maneuver brigades during the NIE, conduct detailed planning and development of the architecture and vignettes, and information assurance. Establish metrics and measures across the SUTs/SUEs, and identify and implement tools, data points and data collection measures for the NIE.. Complete analysis and assessment of integrated experimental systems to determine optimal brigade configuration and best solutions to fill the known requirements gaps. Conducted Information Assurance (IA) which includes; plan/execute C4ISR/vehicle/platform integration, system checkout, and the coordination of system support between training and logistics assets. Coordinate Contractor Field Support Representatives (CFSRs) and Government Subject Matter Experts (GSME), to integrate hardware and software in support of the NIE events. Conducted infrastructure and facilities management which includes; establish/maintain & track communications during NIE within a 7,600 square mile footprint, maintain IT and equipment support within buildings disbursed over 7,600 square miles. Setup and maintain security access for over an estimated 7,000 soldiers, government, contracted and industry personnel during the NIE. Coordinate with ASAALT as they assign PMs to be Non-Program of Record (POR) SUE sponsors. Conduct international, integration and interoperability procedures. Conduct Information Assurance (IA), accreditation and certification which includes; test but verify, coordinating for DAA approvals, and all technology services. Conduct After Action

FY 2011	FY 2012	FY 2013

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Review (AAR) to provide Army leadership recommendation for improving operational requirements and enhancing technical specifications. Conduct command and control and staff support for the complete agile process to include: Program Management, Administrative, Tech Services, IT, Graphics, Defense Travel System (DTS) support, Facilities Execution, Knowledge Management Execution, Security Execution, Business Management, and Acquisition Management. Develop and support budget submittals and all program inquiries. Conduct personnel management support for the SoSI. Coordinate all higher headquarters, congressional, and media inquiries, questions and audits.				
<p>Title: Architecture Development and System Engineering</p> <p align="right">Articles:</p> <p>Description: Funding is provided for the following effort: Provides government and contractor support staff to Dir SoS Integration to support their technological specialty in completing the Agile Process, NIE Architecture, NIE System Engineering, and NIE Systems Integration.</p> <p>FY 2012 Plans: Subject Matter Expertise from other Army PEOs and PMs that support the Dir SoS Integration in conducting the following: Assists in developing and defining what is affordable and can be realistically accomplished within the integration and test NIE window to support future Capability Packages. Conduct requirements traces across the various BCT portfolios by conducting current requirements analysis, identifying gaps and overlaps, and identifying solution sets. In support of the Agile processes, participate in sources sought procedures, completing evaluation of submissions, planning vignettes, and completing architecture analysis. Assists in the development of the Network Operations (NETOPS) by defining communications settings, interfaces, and configuration which includes; Traffic Engineering (Shared Networks) for Software Services & Communications in order to maximize the use of bandwidth. Support Information Assurance (IA) coordination. Participates in System Under Test/System Under Evaluation (SUT/SUE) network integration assessments and analysis for NIE. Support the development of the brigade level network architecture for the NIE events. Support the detailed planning of the architecture and vignettes, and information assurance plan. Support the establishment of metrics and measures across the SUTs/SUEs, and identify and implement tools, data points and data collection measures for the NIE. Assist in integrating hardware and software from different systems into existing platforms. Support the development of test tools and instrumentation to support data analysis, Army force structure and recommendations. Support Information Assurance (IA) which includes; plan/execute C4ISR/vehicle/platform integration, system checkout, and the coordination of system support between training and logistics assets. Coordinate Contractor Field Support Representatives (CFSRs) and Government Subject Matter Experts (GSME), to integrate hardware and software in support of the NIE events. Conduct Information Assurance (IA) accreditation and certification which includes; test but verify, coordinating for Detailed Accreditation Authority (DAA) approvals, and all technology services. Apply lessons learned from the previous test cycle to improve tools, processes and procedures, while informing the Requirements, Budgeting and Acquisition processes.</p>		-	23.500 0	-
Title: Infrastructure		-	20.000	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>		PROJECT FC2: <i>BCT Equipping Evaluation</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p align="right">Articles:</p> <p>Description: Provides for Infrastructure, (facilities, IT support, computers, Black Berries, program IA, etc.) at all SOSI locations.</p> <p>FY 2012 Plans: Provides for setup, utilities, furniture, equipment and maintenance, of all facilities at Fort Bliss TX, (FTB), White Sands Missile Range NM (WSMR) , Warren MI, Picatinny NJ, Aberdeen Proving Ground, MD (APG), and Washington Capital Region. Includes lease and support maintenance of General Services Administration (GSA)/Government Furnished equipment (GFX) vehicles that support the /NIE mission at FTB/WSMR Purchase or lease, integrate, and maintain telecommunications, routers, network management software, blackberries and PDAs, computers, Antennas, display screens, radios, and associated mounting hardware and cables to support NIE mission. Purchases and integrates computer software to support scheduling, Agile RFI selection and evaluation process, budget process, integration analysis, modeling and simulation, network analysis, data collection, and analyzing test results. Includes costs of facilities required to store/maintain/integrate capabilities on to platforms.</p> <p>Title: Common Operating Environment (COE): Dir SoS Integration SYSTEMS ENGINEERING</p> <p>Description: Provides technical support and coordination between Dir SoS Integration and Chief System Engineering Directorate for Common Operating Environment (COE).</p> <p>FY 2012 Plans: 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 System Integration Labs (SILs) across the Army Material Command (AMC) Software (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</p> <p>Title: SoS ENGINEERING: System of Systems INTEGRATION (SoSI)</p>		-	0	-
		-	8.750 0	-
		-	5.700 0	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Description: To provide technical support and coordination between System of Systems Integration (SoSI) and Chief System Engineering Directorate for common operating environment.</p> <p>FY 2012 Plans: Finalize the Army'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. 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)</p> <p>Refine and finalize Network Analysis Tools. Integrated Performance & Analysis Center (IPAC) 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 Live Virtual and Constructive (LVC) End to End (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.</p>			
Accomplishments/Planned Programs Subtotals	471.559	298.589	-

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• FC3: <i>FCS Reconnaissance (UAV)</i> <i>Platforms FC3</i>	18.792									0.000	18.792
• FC5: <i>FCS Reconnaissance (UAV)</i> <i>Platforms FC5</i>	1.451									0.000	1.451
• FC6: <i>Network Hardware & Software (FCS Sustainment & Training R&D) FC6</i>	598.673									0.000	598.673
• B00002: <i>BCT Network (P 40) Inc</i> <i>1 B00002</i>	46.176									0.000	46.176

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• G80001: <i>BCT Training/Logistics/Management Inc 1 G80001</i>	31.404	26.008								0.000	57.412

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Not Used	Various	var:var	0.001	-		-		-		-	0.000	0.001	0.000
Subtotal			0.001	-		-		-		-	0.000	0.001	0.000

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Sys Eng and PM - Inc 1 & BCT Tech Integration Support & Facility - WSMR	Various	various:various	9.101	-		-		-		-	0.000	9.101	0.000
Government - Sys Eng and PM-NIE	Various	various:various	99.031	-		-		-		-	0.000	99.031	0.000
NIE SUE 12.1	Various	various:various	34.298	-		-		-		-	0.000	34.298	0.000
Nle SUE 11.2	Various	various:various	14.140	-		-		-		-	0.000	14.140	0.000
NIE SUE 12.2	Various	various:various	6.543	-		-		-		-	0.000	6.543	0.000
Contractor SOS Eng & Program Mgt - IBCT Inc 1	Various	various:various	0.095	-		-		-		-	0.000	0.095	0.000
Contractor Fee - IBCT Inc 1	Various	various:various	0.123	-		-		-		-	0.000	0.123	0.000
Contractor Supportability/ Logistics IBCT Inc 1	Various	various:various	1.132	-		-		-		-	0.000	1.132	0.000
Contractor SEPM - CP 13/14	Various	various:various	42.437	-		-		-		-	0.000	42.437	0.000
Contractor Supportability/ Logistics - CP 13/14	Various	various:various	8.581	-		-		-		-	0.000	8.581	0.000
Contractor SOS Integration - CP 13/14	Various	various:various	15.165	-		-		-		-	0.000	15.165	0.000
Contractor Training Specs & Products CP 13/14	Various	various:various	10.535	-		-		-		-	0.000	10.535	0.000
Contractor Fee - CP 13/14	Various	various:various	9.177	-		-		-		-	0.000	9.177	0.000
Systems Under Evaluation (SUE) Integration 12.2 / 13.1	Various	various:various	-	109.839		-		-		-	0.000	109.839	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integration - Dir SoS Integration	Various	various:various	-	76.200		-		-		-	0.000	76.200	0.000
SoS Engineering: SoS Integration (SOSI)	Various	various:various	-	5.700		-		-		-	0.000	5.700	0.000
Common Operating Environment (COE): Dir SoS Integration Sys Eng	Various	various:various	-	8.750		-		-		-	0.000	8.750	0.000
Infrastructure	Various	various:various	-	20.000		-		-		-	0.000	20.000	0.000
Architecture Development and Sys Eng	Various	various:various	-	23.500		-		-		-	0.000	23.500	0.000
Subtotal			250.358	243.989		-		-		-	0.000	494.347	0.000

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Other - Support to PM and Non PM Government Offices	MIPR	various:various	3.146	-		-		-		-	0.000	3.146	0.000
Special Termination Costs for Boeing	Various	various:various	33.349	-		-		-		-	0.000	33.349	0.000
Special Termination Costs for Networks	Various	various:various	21.566	-		-		-		-	0.000	21.566	0.000
Special Termination for SUGV	Various	various:various	38.511	-		-		-		-	0.000	38.511	0.000
Government Contract Close Out	Various	various:various	5.302	9.000		-		-		-	0.000	14.302	0.000
NIE Infrastructure	Various	various:various	16.900	-		-		-		-	0.000	16.900	0.000
Government Other - CIO	Various	various:VARIOUS	11.521	-		-		-		-	0.000	11.521	0.000
Government Othr PAO/SP3O	Various	various:various	4.068	-		-		-		-	0.000	4.068	0.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				PE 0604662A: <i>FCS Reconnaissance (UAV) Platforms</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	18.792	-	-	-	-	-	-	-	-	Continuing	Continuing
FC3: <i>BCT RECONNAISSANCE (UAV) PLATFORMS</i>	18.792	-	-	-	-	-	-	-	-	Continuing	Continuing

Note

Beginning in FY12 the program was terminated to meet the Army's emerging requirements and the fund for this project was used for higher priority requirements. The ADM dated 3 February 2011 officially terminated the Class I program in April 2011 and all remaining FY11 funding will be required to fund Special Termination Cost for Class I.

A. Mission Description and Budget Item Justification

The Class IV Program was terminated in January 2010. The Class I Program was terminated in April 2011 in accordance with the DAB Review on 12 January and the 3 February 2011 Early-Infantry Brigade Combat Team Acquisition Decision Memorandum (ADM).

The XM 156 Class I system for System Development and Demonstration (SDD) provides the dismounted soldier Reconnaissance, Surveillance, and Target Acquisition (RSTA). It has the ability to hover in place 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 consists 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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604662A: <i>FCS Reconnaissance (UAV) Platforms</i>
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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.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	50.304	-	-	-	-
Current President's Budget	18.792	-	-	-	-
Total Adjustments	-31.512	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.732	-			
• SBIR/STTR Transfer	-1.760	-			
• Other Adjustments 1	-0.293	-	-	-	-
• Other Adjustments 2	-24.700	-	-	-	-
• Other Adjustments 3	-2.027	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604662A: <i>FCS Reconnaissance (UAV)</i> <i>Platforms</i>				PROJECT FC3: <i>BCT RECONNAISSANCE (UAV)</i> <i>PLATFORMS</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
FC3: <i>BCT RECONNAISSANCE (UAV) PLATFORMS</i>	18.792	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Beginning in FY12 the program was terminated to meet the Army's emerging requirements. Funds for this project were used for higher priority requirements. The ADM dated 3 February 2011 officially terminated the Class I program in April 2011 and all remaining FY11 funding will be required to fund Special Termination Cost for Class I.

A. Mission Description and Budget Item Justification

The Class IV Program was terminated in January 2010. The Class I Program was terminated in April 2011 in accordance with the DAB review on 12 January and the 3 February 2011 Early-Infantry Brigade Combat Team Acquisition Decision Memorandum (ADM).

The XM 156 Class I system for System Development and Demonstration (SDD) provides the dismounted soldier Reconnaissance, Surveillance, Target Acquisition (RSTA). It has the ability to hover in place 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 consists 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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604662A: <i>FCS Reconnaissance (UAV)</i> <i>Platforms</i>	PROJECT FC3: <i>BCT RECONNAISSANCE (UAV)</i> <i>PLATFORMS</i>
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recent determination by the Army the Class IV program was terminated in January of 2010. Future incremental development will incorporate Class IV 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.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>Title: Government NIE SUE 11.2 / 12.1</p> <p style="text-align: right;">Articles:</p> <p>Description: Funding is provided for the following support effort</p> <p>FY 2011 Accomplishments: These funds provide for government personnel labor, travel, training, supplies, other support costs (support contractors, Automated Data Processing (ADP), communications, supplies, and equipment), and platform unique testing. They also funded aviation related costs associated with the NIE 11.2 /12.1. This includes blade time and government SUEs. Blade time covers the Medevac (Blackhawk), UH-60, OH-58, and HH-60. Government SUEs include Fixed Wing Aerial Tier (C-12), Shadow, Aerostat, Apache, Raven, and Blackhawk.</p>	7.233 0	-	-
<p>Title: Funds for Army's Higher Priority Programs</p> <p style="text-align: right;">Articles:</p> <p>Description: These funds are excess to the program.</p> <p>FY 2011 Accomplishments: As a result of the program's cancellation these funds are not required and are available for higher priorities within the Army.</p>	2.584 0	-	-
<p>Title: Contractor: Costs for Efforts Prior to Termination</p> <p style="text-align: right;">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: Provided Class I UAVs to support software development for Optical Infra-Red Laser Designator Laser Range Finder (EO/IR/LD/LRF) sensor control and air vehicle flight controls. Integrated and assembled air frame and heavy fuel engine to support risk reduction testing of Engineering Development Assets (EDAs) in order to meet CPD requirements. Performed test-fix-test in the lab for EO/IR/LD/LRF sensor control and air vehicle flight control software. Delivered 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. Conducted and</p>	4.822 0	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604662A: <i>FCS Reconnaissance (UAV)</i> <i>Platforms</i>	PROJECT FC3: <i>BCT RECONNAISSANCE (UAV)</i> <i>PLATFORMS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
supported early risk reduction flight testing and environmental testing. Provided engineering support for integration activities for air vehicle equipment for IQT.			
Title: Special Termination Costs	4.153	-	-
Articles:	0		
Description: Funding provided for the following effort			
FY 2011 Accomplishments: Costs were 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.			
Accomplishments/Planned Programs Subtotals	18.792	-	-

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• FC2: <i>FCS System of Systems Engr & Program Management</i>	471.559	298.589								0.000	770.148
• FC5: <i>FCS Unattended Ground Sensors</i>	1.451									0.000	1.451
• FC6: <i>Network Hardware & Software (FCS Sustainment & Training R&D)</i>	598.673									0.000	598.673
• B00002: <i>BCT Network (P 40) Inc 1</i>	46.176									0.000	46.176
• G80001: <i>BCT Training/Logistics/ Management Inc 1</i>	31.404	26.008								0.000	57.412

D. Acquisition Strategy

The Army's Class IV program was terminated in January of 2010.

The ADM dated 3 February 2011 officially terminated the Class I program in April 2011 and all remaining FY11 funding will be required to fund Special Termination Cost for Class I.

This program was Terminated in April 2011.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604662A: <i>FCS Reconnaissance (UAV)</i> <i>Platforms</i>	PROJECT FC3: <i>BCT RECONNAISSANCE (UAV)</i> <i>PLATFORMS</i>

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604662A: <i>FCS Reconnaissance (UAV) Platforms</i>	PROJECT FC3: <i>BCT RECONNAISSANCE (UAV) PLATFORMS</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Special Termination Costs	Various	The Boeing Company:TBD	14.389	-		-		-		-	Continuing	Continuing	0.000
Funds for Army's Higher Priorities	Various	SOSI:Warren, MI	2.584	-		-		-		-	0.000	2.584	0.000
Subtotal			16.973	-		-		-		-			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)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development Costs Prior to Termination	SS/FP	Boeing Co.:TBD	40.349	-		-		-		-	0.000	40.349	0.000
Government NIE SUE 11.2 / 12.1	SS/FP	various:various	7.233	-		-		-		-	0.000	7.233	0.000
Product Development - Digital Data Link Capability	SS/FP	Aerovironment:TBD	25.926	-		-		-		-	0.000	25.926	0.000
Subtotal			73.508	-		-		-		-	0.000	73.508	0.000

Remarks
 Remark 1: Subcontractor: Honeywell International, Inc - Albuquerque, New Mexico
 Remark 2: Subcontractor: Northrup 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604662A: <i>FCS Reconnaissance (UAV)</i> <i>Platforms</i>	PROJECT FC3: <i>BCT RECONNAISSANCE (UAV)</i> <i>PLATFORMS</i>
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	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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

Termination	<div style="background-color: black; width: 100px; height: 15px; margin: 0 auto;"></div>
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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604662A: <i>FCS Reconnaissance (UAV) Platforms</i>	PROJECT FC3: <i>BCT RECONNAISSANCE (UAV) PLATFORMS</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Termination	3	2011	3	2011

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				PE 0604663A: <i>FCS Unmanned Ground Vehicles</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	200.000	35.966	-	-	-	-	-	-	-	Continuing	Continuing
<i>FC4: BCT UNMANNED GROUND VEHICLES</i>	200.000	35.966	-	-	-	-	-	-	-	Continuing	Continuing

Note

Change Summary Explanation: Funding: FY13: Funding (\$13.141 million) will continue under Program Element 0604641A Project DV7.

A. Mission Description and Budget Item Justification

This PE has no FY 2013 Base or OCO request. The FY2013 funding continues under Tactical Unmanned Ground Vehicle (Small Unmanned Ground Vehicle) Program Element 0604641A Project DV7.

The 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 Increment 1 XM1216: The INC 1 SUGV is based on the IBCT Capability Production Document (CPD) threshold requirements. The SUGV 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 Independent Verification Test (IVT) 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 Initial Qualification Test (IQT). Enhancements included improved seals on the drive motors, design changes to the drive motor themselves, Electromagnetic Interference (EMI) improvements to reduce the emissions and susceptibility of the SUGV platform and operator control unit enhancements. The XM1216 is currently conducting missions in support of units in OEF.

SUGV Planned Product Improvements (Increment 1 Follow on) designated as the XM1216E1: The SUGV configuration for Low Rate Initial Production (LRIP) moving to Full Rate Production (FRP) is based on the SUGV IBCT CPD Threshold Requirements. It will weigh 35 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 National Security Agency (NSA) compliant radio from the Joint Tactical Radio system program, improved hand controller, the capability to provide grid location of the enemy, and the following capability to mount payloads: tether spooler, manipulator arm, Chemical, Biological, Radiological, Nuclear (CBRN) suite and Embedded-Tactical Engagement Simulation System (E-TESS).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
2040: <i>Research, Development, Test & Evaluation, Army</i>	PE 0604663A: <i>FCS Unmanned Ground Vehicles</i>
BA 5: <i>Development & Demonstration (SDD)</i>	

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	249.948	143.840	124.472	-	124.472
Current President's Budget	200.000	35.966	-	-	-
Total Adjustments	-49.948	-107.874	-124.472	-	-124.472
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-124.472	-	-124.472
• Other Adjustments 1	-49.948	-107.874	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604663A: <i>FCS Unmanned Ground Vehicles</i>				PROJECT FC4: <i>BCT UNMANNED GROUND VEHICLES</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
FC4: <i>BCT UNMANNED GROUND VEHICLES</i>	200.000	35.966	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This PE has no FY 2013 Base or OCO request. The FY2013 funding continues under Tactical Unmanned Ground Vehicle (Small Unmanned Ground Vehicle) Program Element 0604641A Project DV7.

The 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 Increment 1 XM1216: The INC 1 SUGV is based on the IBCT Capability Production Document (CPD) threshold requirements. The SUGV 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 Independent Verification Test (IVT) 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 Initial Qualification Test (IQT). Enhancements included improved seals on the drive motors, design changes to the drive motor themselves, Electromagnetic Interference (EMI) improvements to reduce the emissions and susceptibility of the SUGV platform and operator control unit enhancements. The XM1216 is currently conducting missions in support of units in OEF.

SUGV Planned Product Improvements (Increment 1 Follow on) designated as the XM1216E1: The SUGV configuration for Low Rate Initial Production (LRIP) moving to Full Rate Production (FRP) is based on the SUGV IBCT CPD Threshold Requirements. It will weigh 35 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 National Security Agency (NSA) compliant radio from the Joint Tactical Radio system program, improved hand controller, the capability to provide grid location of the enemy, and the following capability to mount payloads: tether spooler, manipulator arm, Chemical, Biological, Radiological, Nuclear (CBRN) suite and Embedded-Tactical Engagement Simulation System (E-TESS).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: SUGV Product Improvement	9.429	27.200	-
Articles:	0	0	
Description: Funding is provided for the following effort			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604663A: <i>FCS Unmanned Ground Vehicles</i>	PROJECT FC4: <i>BCT UNMANNED GROUND VEHICLES</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012
<p><i>FY 2011 Accomplishments:</i> Conducted SUGV Critical Design Review 25-27 July 2011. 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 IQT. Complete integration, build and checkout of the EO/IR sensor, Handheld Manpack & Small form fit (HMS) radio, Operator Control Unit (OCU) and payloads. Began assessments of an NSA approved radio, improved detection capability for the EO/IR sensor and integration of the SUGV with OCU. Conduct an early assessment of the SUGV, HMS radio, Soldier Radio Waveform (SRW) and improved Hand Controller to support the development and build of SUGV prototypes for IQT/LUT in FY12/FY13. Continue work and development of payloads to support IQT: Tether, manipulator arm, CBRN, and Embedded training. Build five SUGV prototypes for delivery in FY12.</p> <p><i>FY 2012 Plans:</i> FY 2012 Description: Complete the build, integration and delivery of five prototypes and payloads in the September 2011-August 2012 timeframe. Conduct termination of Prime SUGV contractor. Award a follow-on SUGV contract to complete development of SUGV Engineering Manufacturing Demonstration (EMD) to include a bridging effort to continue SUGV development between termination with the Prime and award of the follow on contract to complete SUGV. Conduct the following actions for the EMD follow-on contract: prepare proposal package, solicit and evaluate proposals and award contract for 7 SUGV Pre-Production prototypes. Tasks include preparing A Spec, B spec and Statement of Work. Transition responsibilities and work from the Prime to Government counterparts to close out current SUGV contract and ease government takeover of the existing and future contract with SUGV vendor. Close out the SUGV Critical Design Review to finalize current design and assess that design to the SUGV CDD. Utilize prototypes to assess CDR design to meet CDD requirements and operational utility, (Oct11-Mar12) under the bridging effort. Evaluation and assessment will be used to assess requirement compliance and prepared SOW and Performance Specifications for the Follow-on contract. Assess performance of the HMS/SRW radio for range, latency and National Security Agency/ Information Assurance Strategy (NSA/IAS) compliance. Evaluate the performance and operational utility of the Operator Control Unit that will replace the Common Controller that was terminated. Assess design and performance for requirement compliance for payloads, environments, shock/vibration, and command and control software and platform mobility utility. Evaluate performance of the improved EO/IR sensor to meet critical KPPs for day and night recognition. Conduct a Limited User Test (LUT) to confirm operational utility. Award Follow-on contract (April 12) to finalize design, build production prototypes and conduct contractor/government testing. Conduct Delta Critical Design Review to confirm design decisions made from the testing with prototypes and changes to the drawing package. Delta CDR will focus on design changes and critical subsystem components: HMS/SRW radio, Operator Control unit, Software, Payloads: tether, manipulator arm, CBRN detection and E-TESS. Evaluate design to meet CDD requirements. Build seven SUGV Pre-Production prototypes (July-Sept 12) with payloads. Conduct integration and contractor checkout of SUGV Pre-Production prototypes to include payloads. Prepare for prototype testing.</p>			
<i>Title:</i> SUGV Sensor Hardware		4.783	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604663A: <i>FCS Unmanned Ground Vehicles</i>	PROJECT FC4: <i>BCT UNMANNED GROUND VEHICLES</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Articles:		0		
Description: Funding is provided for the following effort				
FY 2011 Accomplishments: 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))		41.339	-	-
Articles:		0		
Description: Funding is provided for the following effort				
FY 2011 Accomplishments: 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.				
Title: MM UGV Sensors/Computers/Radios		44.864	-	-
Articles:		0		
Description: Funding is provided for the following effort				
FY 2011 Accomplishments: 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-				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604663A: <i>FCS Unmanned Ground Vehicles</i>	PROJECT FC4: <i>BCT UNMANNED GROUND VEHICLES</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
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) .				
Title: MULE-CM & MULE-T Special Termination Costs	Articles:	1.500 0	-	-
Description: Funding is provided for the following effort				
FY 2011 Accomplishments: Special termination costs include severance pays, settlement expenses, and return of field service representatives.				
Title: ANS (AUTONOMOUS NAVIGATION SYSTEM)	Articles:	54.593 0	-	-
Description: Funding is provided for the following effort				
FY 2011 Accomplishments: 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.				
Title: CONTRACTOR FEE	Articles:	20.495 0	-	-
Description: Funding is provided for the following effort				
FY 2011 Accomplishments: Moved from System of Systems Engineering; consists of prime contractor fee for remaining work in FY11.				
Title: GOVERNMENT SYSTEMS ENGINEERING/PROGRAM MANAGEMENT	Articles:	-	7.478 0	-
Description: Funding is provided for the following effort				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604663A: <i>FCS Unmanned Ground Vehicles</i>	PROJECT FC4: <i>BCT UNMANNED GROUND VEHICLES</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
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 personnel from: Business, Acquisition, Engineering, Logistics, Admin & IT support. Due to the termination of the BCTM EMD Contract (Boeing) and the transition of PEO I to PEO GCS, many of the functions/efforts performed by the Boeing and PEO I will now have to be performed by RS JPO personnel. FY11 efforts will involve major initiatives: completing TDP, developing competitive selection criteria for follow-on contract, developing milestone documentation and analysis to support creation of APB for the Small 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, investigating alternative sensors and communications suites to reduce platform cost and weight and managing testing at government facilities.				
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 SUGV will require detailed test plan development, test range support to include platform and sensor instrumentation, on-site test engineering support for testing and engineer support for data collection and analysis.		Articles: -	1.288 0	-
Title: IED COUNTERMEASURE DEV Description: Funding is provided for the following effort FY 2011 Accomplishments: 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.		Articles: 22.997 0	-	-
Accomplishments/Planned Programs Subtotals		200.000	35.966	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604663A: <i>FCS Unmanned Ground Vehicles</i>	PROJECT FC4: <i>BCT UNMANNED GROUND VEHICLES</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• F00001: <i>OPA BCT Unmanned Ground Vehicle</i>	27.433	24.805	83.937		83.937		122.731	149.748	62.766	Continuing	Continuing
• 0604641A: <i>RDTE Tactical Unmanned Ground Vehicle (Small Unmanned Ground Vehicle Project DV7)</i>			13.141		13.141					0.000	13.141

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604663A: <i>FCS Unmanned Ground Vehicles</i>	PROJECT FC4: <i>BCT UNMANNED GROUND VEHICLES</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MULE-CM & MULE-T SPECIAL TERMINATION	Various	The Boeing Company:Various	2.500	-		-		-		-	0.000	2.500	2.500
Subtotal			2.500	-		-		-		-	0.000	2.500	2.500

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Small Unmanned Ground Vehicle (SUGV)	Various	The Boeing Company:St Louis, MO	43.150	14.200		-		-		-	0.000	57.350	57.350
Small Unmanned Ground Vehicle (SUGV)	SS/CPFF	i Robot Corporation:Burlington, MA	-	13.000		-		-		-	0.000	13.000	13.000
Autonomous Navigation System - Software	Various	The Boeing Company:St. Louis, MO	91.877	-		-		-		-	0.000	91.877	91.877
MM UGV, (former ARV-A (L))	Various	The Boeing Company:St. Louis, MO	184.741	-		-		-		-	0.000	184.741	184.741
Subtotal			319.768	27.200		-		-		-	0.000	346.968	346.968

Remarks
 Remark 1: Subcontractor: iRobot Corp. - Burlington, MA
 Remark 2: This contract will continue under Program Element 0604641A Project DV7
 Remark 2: Subcontractor: Lockheed Martin Missile and Fire Control - Grand Prairie, TX
 Remark 3: Subcontractor: General Dynamics Robotic Systems - Westminster, MD

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GOVERNMENT SEPM	Various	PEO GCS:Warren, MI	0.150	7.478		-		-		-	0.000	7.628	7.628
Subtotal			0.150	7.478		-		-		-	0.000	7.628	7.628

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604663A: <i>FCS Unmanned Ground Vehicles</i>	PROJECT FC4: <i>BCT UNMANNED GROUND VEHICLES</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Incr 1 Production Delivery (Brigades 2 - 5)								■																				
Incr 1 Production Delivery (LRIP Brigades 6-7)												■																
Follow On Production																												
Milestone C Low Rate Initial Production Review (MSC/LRIP REV)																■												
SUGV Follow On Initial Operational Capability																												
SUGV Prototype Build/Delivery								■																				
SUGV Testing (IQT)												■																
SUGV Testing (LUT)																■												
SUGV Follow On CDR				■																								
SUGV EMD Bridging Effort Contract Award								■																				
SUGV EMD Follow On Contract Award												■																

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604663A: <i>FCS Unmanned Ground Vehicles</i>	PROJECT FC4: <i>BCT UNMANNED GROUND VEHICLES</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Incr 1 Production Delivery (Brigades 2 - 5)	4	2012	1	2013
Incr 1 Production Delivery (LRIP Brigades 6-7)	2	2013	3	2013
Follow On Production	2	2014	4	2017
Milestone C Low Rate Initial Production Review (MSC/LRIP REV)	4	2013	4	2013
SUGV Follow On Initial Operational Capability	2	2015	2	2015
SUGV Prototype Build/Delivery	4	2012	4	2012
SUGV Testing (IQT)	1	2013	3	2013
SUGV Testing (LUT)	3	2013	4	2013
SUGV Follow On CDR	4	2011	4	2011
SUGV EMD Bridging Effort Contract Award	1	2012	1	2012
SUGV EMD Follow On Contract Award	4	2012	4	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				PE 0604664A: <i>FCS Unattended Ground Sensors</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	1.451	-	-	-	-	-	-	-	-	Continuing	Continuing
<i>FC5: BCT UNATTENDED GROUND SENSORS</i>	1.451	-	-	-	-	-	-	-	-	Continuing	Continuing

Note

Beginning in FY 2012 the program was terminated to meet the Army's emerging requirements and the funds originally budgeted for UGS have been transferred to used for higher Army priority requirements.

A. Mission Description and Budget Item Justification

This program has no FY 2013 Base or OCO request.

B. Program Change Summary (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	7.515	0.499	-	-	-
Current President's Budget	1.451	-	-	-	-
Total Adjustments	-6.064	-0.499	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.220	-			
• Other Adjustments 1	-0.044	-0.499	-	-	-
• Other Adjustments 2	-5.800	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604664A: <i>FCS Unattended Ground Sensors</i>	PROJECT FC5: <i>BCT UNATTENDED GROUND SENSORS</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
FC5: <i>BCT UNATTENDED GROUND SENSORS</i>	1.451	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Beginning in FY 2012 the program was terminated to meet the Army's emerging requirements and the funds originally budgeted for UGS were transferred and used for higher Army priority requirements.

A. Mission Description and Budget Item Justification

This program has no FY 2013 Base or OCO request.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>Title: Special Termination Costs</p> <p align="right">Articles:</p> <p>Description: Funding provided for the following effort.</p> <p>FY 2011 Accomplishments: Special Termination Costs were 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.</p>	0.400 0	-	-
<p>Title: Funds for Army's Higher Priority</p> <p align="right">Articles:</p> <p>Description: These funds are excess to program</p> <p>FY 2011 Accomplishments: Program was terminated and tasks and duties listed here are no longer required and therefore declared excess. Prior to termination the following duties were being funded with FY11 program funds. . T-UGS/U-UGS Increment 2 FY11: Oversaw delivery of improved prototype hardware supporting Technical Field Tests, and further operational test. Completed engineering upgrades to HW and software configuration of the Range Extension Relay .Continued reliability growth; improved sensor/software modalities and delivered soldier carrying MOLLE packs.</p>	1.051 0	-	-
Accomplishments/Planned Programs Subtotals	1.451	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604664A: <i>FCS Unattended Ground Sensors</i>	PROJECT FC5: <i>BCT UNATTENDED GROUND SENSORS</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• FC2: <i>FCS System of Systems Eng & Program Management</i>	471.559	298.589								0.000	770.148
• FC3: <i>Reconnaissance (UAV) Platforms</i>	18.792									0.000	18.792
• FC6: <i>Network Hardware & Software (FCS Sustainment & Training R&D)</i>	598.673									0.000	598.673
• B00002: <i>BCT Network (P40) Inc 1</i>	46.176									0.000	46.176
• G80001: <i>BCT Training/Logistics/ Management Inc 1</i>	31.404	26.008								0.000	57.412

D. Acquisition Strategy

As a result of Army Acquisition decisions, this program has been terminated after procurement of the first brigade.

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.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				PE 0604665A: <i>FCS Sustainment & Training R&D</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	598.673	-	-	-	-	-	-	-	-	Continuing	Continuing
FC6: <i>BCT Network Hardware & Software</i>	598.673	-	-	-	-	-	-	-	-	Continuing	Continuing

Note

This program was restructured to meet Army emerging requirements.

A. Mission Description and Budget Item Justification

This program has no FY 2013 Base or OCO request.

B. Program Change Summary (\$ in Millions)

	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	610.389	-	203.721	-	203.721
Current President's Budget	598.673	-	-	-	-
Total Adjustments	-11.716	-	-203.721	-	-203.721
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-203.721	-	-203.721
• Other Adjustments 1	-11.716	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604665A: <i>FCS Sustainment & Training R&D</i>	PROJECT FC6: <i>BCT Network Hardware & Software</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
FC6: <i>BCT Network Hardware & Software</i>	598.673	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note
Beginning in FY12 the program was restructured to meet the Army's emerging requirements.

A. Mission Description and Budget Item Justification
This program has no FY 2013 Base or OCO request.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Title: Contractor SOSCOE Development CP 13/14</p> <p align="right">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: Continued the working towards First Qualification Test (FQT) and released SOSCOE Build 10.6 in 1Q FY11 for integration with Battle Command System (BCS) CP 13/14 Phase 1 software. Provided incremental software drops of SOSCOE to support integration with CP 13/14 Phase 2 Battle Command System (BCS) CP 13/14 Phase 2 applications. Continued development and integration activities through Build 10.8 until contract termination prior to qualification of software. SOSCOE Build 10.7 through 10.8 included 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.</p>	50.967 0	-	-
<p>Title: Contractor Communication Systems Software CP 13/14</p> <p align="right">Articles:</p> <p>Description: Funding provided for execution management prior to contract termination.</p>	45.351 0	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604665A: <i>FCS Sustainment & Training R&D</i>	PROJECT FC6: <i>BCT Network Hardware & Software</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012
FY 2011 Accomplishments: Continued development of NMS CP 13/14 Phase 1 software. Continued development of Phase 1 functionality, provided integration support to the Network System Integration and Test (NSIT) lab, and resolved Software Problem Reports (SPRs) until contract termination prior to qualification of software. Continued CP 13/14 Phase 2 software development and provided 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.			
Title: Contractor Battle Command Software - Systems Engineering/Program Management (SE/PM) CP 13/14 Articles:		26.797 0	-
Description: Funding provided for execution management prior to contract termination.			
FY 2011 Accomplishments: Provided technical oversight of the software development effort. Continued to conduct requirements decomposition and architecture/design. Provided quality assurance, configuration management and purchased software development licenses. Continued requirements verification and validation (V&V) of software delivered. Provided data deliverables, participate 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).			
Title: Contractor Battle Command Software - Warfighter Machine Interface Services (WMIS) CP 13/14 Articles:		21.420 0	-
Description: Funding provided for execution management prior to contract termination.			
FY 2011 Accomplishments: Continued software development/coding of WMIS to support Battle Command System (BCS) CP 13/14 Phase 1. Continued development of Phase 1 functionality, provided 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. Continued until contract termination. Provided multiple software releases of incremental capability to support early Battle Command System (BCS) system-level integration. Provided integration support to the (NSIT) during software-to-software integration. WMIS CP 13/14 Phase 2 software functionality included: 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.			
Title: Contractor Battle Command Software - Battle Command & Mission Execution (BCME) CP 13/14 Articles:		20.823 0	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604665A: <i>FCS Sustainment & Training R&D</i>	PROJECT FC6: <i>BCT Network Hardware & Software</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>Description: Funding provided for execution management prior to contract termination.</p> <p>FY 2011 Accomplishments: Continued software development/coding of BCME to support Battle Command System (BCS) CP 13/14 Phase 1. Continued development of Phase 1 functionality, provided integration support to the Network System Integration and Test (NSIT), and resolved SPRs until contract termination prior to qualification of software. Began development of BCME to support Battle Command System (BCS) CP 13/14 Phase 2. Provided multiple software releases of incremental capability to support early BCS system-level integration and provide integration support to the NSIT. Continued 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.</p>				
<p>Title: Contractor Battle Command Software - Situational Understanding (SU) CP 13/14</p> <p align="right">Articles:</p> <p>Description: Funding provided for execution management prior to contract termination.</p> <p>FY 2011 Accomplishments: Continued software development/coding of SU to support Battle Command System (BCS) CP 13/14 Phase 1. Continued development of Phase 1 functionality, provided software-to-software integration support to NSIT, and resolved SPRs until contract termination prior to qualification of software. Began development of SU to support Battle Command System (BCS) CP 13/14 Phase 2. Provided multiple software releases of incremental capability to support early BCS system-level integration. Provided integration support to the Network System Integration and Test (NSIT). Continued 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.</p>		14.887 0	-	-
<p>Title: Contractor Battle Command Software - Planning and Preparation Services (PPS) CP 13/14</p> <p align="right">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: Continued software development/coding of PPS to support Battle Command System (BCS) CP 13/14 Phase 1. Continued development for Phase 1 functionality, provided integration support to the Network System Integration and Test (NSIT), and</p>		6.565 0	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604665A: <i>FCS Sustainment & Training R&D</i>	PROJECT FC6: <i>BCT Network Hardware & Software</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
resolved SPRs until contract termination prior to qualification of software. Began development of PPS to support Battle Command System (BCS) CP 13/14 Phase 2. Provided multiple software releases of incremental capability to support early BCS system-level integration. Provided integration support until contract termination. PPS CP 13/14 Phase 2 included: 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.				
<p>Title: Contractor Fusion Software CP 13/14</p> <p>Description: Funding provided for execution management prior to contract termination.</p> <p>FY 2011 Accomplishments: Continued software development/coding of SDM and L1F to support Battle Command System (BCS) CP 13/14 Phase Continued development of Phase 1 functionality, provided integration support to NSIT, and resolved 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. Provided multiple releases to simplify integration, reduce schedule and technical risk, with the result of minimizing cost of integrating the Battle Command System (BCS). Integrated SOSCOE Builds 10.6 and 10.7. Provided integration support to the Network System Integration and Test (NSIT). Continued until contract termination. Planned SDM CP 13/14 Phase 2 capability included 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.</p>		<p>Articles:</p> <p>9.593 0</p>	-	-
<p>Title: Contractor Embedded Training Software CP 13/14</p> <p>Description: Funding provided for execution management prior to contract termination.</p> <p>FY 2011 Accomplishments: Continued 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 provided the tools for the following training capability: enhanced</p>		<p>Articles:</p> <p>11.084 0</p>	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604665A: <i>FCS Sustainment & Training R&D</i>	PROJECT FC6: <i>BCT Network Hardware & Software</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
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. Live training capability enhanced the IBCT platforms, to enable interoperability with Combat Training Center - Instrumentation Systems (CTC-IS), Home station Instrumentation Training System (HITS) and Digital Range Training system (DRTS).				
<p>Title: Contractor Logistics Products Application Integration CP 13/14</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: Continued software development of Logistics Products to support CP 13/14 Phase 1. Continued development of Phase 1 functionality, provided integration support to NSIT, and resolved 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. Continued until contract termination. Provided multiple software releases of incremental logistics capability to support early BCS system-level integration. Provided integration support to the Network System Integration and Test. Logistics Decision Support System (LDSS) CP 13/14 Phase 2 included: 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, health 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).</p>		<p>23.345</p> <p>Articles: 0</p>	-	-
<p>Title: Contractor Communication Hardware (Air and Ground) CP 13/14</p> <p>Description: Funding provided for execution management prior to contract termination.</p> <p>FY 2011 Accomplishments: Completed procurement of 251 rifleman radios for Common Controller. Procured and prepared test stations and conducted 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,</p>		<p>15.980</p> <p>Articles: 0</p>	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604665A: <i>FCS Sustainment & Training R&D</i>	PROJECT FC6: <i>BCT Network Hardware & Software</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
update ICDs and schematics. Procured and integrated into Network System Integration and Test (NSIT) SIL. Sponsored the development of the teleops version of SRW (SRW 1.1) SUGV platforms.				
<p>Title: Contractor Common Controller (CC), Hardware and Software CP 13/14</p> <p>Description: Funding provided for execution management prior to contract termination.</p> <p>FY 2011 Accomplishments: Continued to develop the CC for the Critical Design Review.</p>		<p>Articles:</p> <p>38.446 0</p>	-	-
<p>Title: Contractor ICS - Computer Processing, Hardware and Software CP 13/14</p> <p>Description: Funding provided for execution management prior to contract termination.</p> <p>FY 2011 Accomplishments: Continued ICS design effort to deliver LNPV2 Brassboard prototypes, LNPv2 emulators, hybrid ICS and 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 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. 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 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).</p>		<p>Articles:</p> <p>76.649 0</p>	-	-
<p>Title: Contractor Network Integration (SW/SW and SW/HW) CP 13/14</p> <p>Description: Funding provided for execution management prior to contract termination.</p> <p>FY 2011 Accomplishments: Continued 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. Provided Integration</p>		<p>Articles:</p> <p>41.464 0</p>	-	-

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Releases (IRs) in 2QFY11 for early integration of the CC in conjunction with the unmanned systems and the NIK. BCS Phase 1 included integration of SOSCOE Builds 10.1 through 10.6 with the latest versions of the ICS Operating Systems (OS).				
Title: Contractor Fee				
Articles:		40.337 0	-	-
Description: Funding provided for execution management prior to contract termination.				
FY 2011 Accomplishments: Contractor prime fee.				
Title: Special Termination Cost				
Articles:		94.693 0	-	-
Description: Special Termination				
FY 2011 Accomplishments: Special Termination Costs for Boeing. 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 will be dispositioned IAW NSA requirements.				
Title: NIE SUE-11.2				
Articles:		20.986 0	-	-
Description: Funds were provided to support integration of both industry and DOD emerging and existing technologies into the current Army force structure. This includes all integration and test efforts for 11.2. This event included the, LOADEX, COMMEX, PILOT and execution of the Network Integration Evaluation (NIE) event.				
FY 2011 Accomplishments: Provided funding to support integration and evaluation of SUTs and SUES during the Army's Network Integration Evaluation (NIE). Completed risk reduction analysis. These funds covered the NIE participant's (Emerging and existing technologies PMs and contractors) costs for; travel, and shipment of equipment, Contractor Field Service Representatives (CFSRs) and Government Subject Matter Experts (GSMEs) required to support integration activities, integration kit development, and the purchase of additional prototypes that were needed to effectively complete detailed evaluations of the current brigade. It included costs for the development and fabrication of integration hardware and software.				
Title: NIE SUE-12.1		26.130	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604665A: <i>FCS Sustainment & Training R&D</i>	PROJECT FC6: <i>BCT Network Hardware & Software</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p align="right">Articles:</p> <p>Description: Funds were provided to support integration of both industry and DOD emerging and existing technologies into the current Army force structure. This includes all integration and test efforts for 12.1. This event included the, LOADEX, COMMEX, PILOT and execution of the Network Integration Evaluation (NIE) event.</p> <p>FY 2011 Accomplishments: Provided funding to support integration and evaluation of SUTs and SUES during the Army's Network Integration Evaluation (NIE). Completed risk reduction analysis. These funds covered the NIE participant?s (Emerging and existing technologies PMs and contractors) costs for; travel, and shipment of equipment, Contractor Field Service Representatives (CFSRs) and Government Subject Matter Experts (GSMEs) required to support integration activities, integration kit development, and the purchase of additional prototypes that were needed to effectively complete detailed evaluations of the current brigade. It included costs for the development and fabrication of integration hardware and software.</p>		0		
<p>Title: NIE SUE 12.2</p> <p align="right">Articles:</p> <p>Description: Funds were provided to support integration of both industry and DOD emerging and existing technologies into the current Army force structure. This includes all integration and test efforts for 12-2. This event included a LOADEX, COMMEX, PILOT and execution of the Network Integration Evaluation (NIE) event.</p> <p>FY 2011 Accomplishments: Provided funding to support integration and evaluation of SUES during the Army's Network Integration Evaluation (NIE). Completed risk reduction analysis. These funds covered the NIE participant?s (Emerging and existing technologies PMs and contractors) costs for; travel, and shipment of equipment, Contractor Field Service Representatives (CFSRs) and Government Subject Matter Experts (GSMEs) required to support integration activities, integration kit development, and the purchase of additional prototypes that were needed to effectively complete detailed evaluations of the current brigade. It included costs for the development and fabrication of integration hardware and software.</p>		1.100 0	-	-
<p>Title: Government- Sys Engr - IBCT Incr 1</p> <p align="right">Articles:</p> <p>Description: Funding was provided for systems engineering and project management for Increment 1 activities for Network Integration Evaluation 11.1</p> <p>FY 2011 Accomplishments:</p>		4.156 0	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604665A: <i>FCS Sustainment & Training R&D</i>	PROJECT FC6: <i>BCT Network Hardware & Software</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Ensured the government and soldiers best interest/values were considered during the following: System of System (SoS) review, 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. In support of NIE 11.1 this effort included system engineering and analysis effort required to support integration and testing.			
<p>Title: Battle Command Development</p> <p align="right">Articles:</p> <p>Description: These funds were used to continue the effort on selected Battle Command (BC) initiatives that were funded under the Boeing contract, to ensure continuity in the Army's BC effort. These efforts were conducted with other industry partners.</p> <p>FY 2011 Accomplishments: The funds provided for the Army to continue; tracing requirements across the integrated network portfolio, detailed analysis of common operating environment, identifying gaps & overlaps, and solutions sets in the current network structure, data and configuration management, integrated schedule synchronization, standardization of hardware and software to optimize integration and interoperability, Provided technical assessments and studies for future technologies and capabilities of radios and trades, waveforms, audio and video throughput, network and routing configuration, information assurance & security, vehicle platform configuration and integration and international integration, enterprise level (Brigade standard) and level architecture. It also provided for the development and execution of COE integration policies and procedures, the development and implementation of backwards capability testing, integration checklists and their verification, hardware test development and implementation support. It also provided for the development and effective utilization of emulator and integration tools. Provided for COE/CE architecture validation, designed baseline validations, and the verification of COE reference architecture compliances, and the verification of COE critical enabler implementation. They also conducted risk assessments and analysis, accreditation and certification process refinement, and verification of technical test harness and tool development. Provided for the accreditation, certification and refinement of test plans and events. And provided detailed metrics for demonstrating COE effectiveness.</p>	7.900 0	-	-
Accomplishments/Planned Programs Subtotals	598.673	-	-

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• FC2: <i>FCS System of Systems Engr & Program Management</i>	471.559	298.589								0.000	770.148

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• FC3: <i>FCS Reconnaissance (UAV)</i> <i>Platforms</i>	18.792									0.000	18.792
• FC5: <i>FCS Unattended Ground</i> <i>Sensors</i>	1.451									0.000	1.451
• B0002: <i>BCT Network</i>	46.176									0.000	46.176
• G80001: <i>BCT Training/Logistics/</i> <i>Management</i>	31.404	26.008								0.000	57.412

D. Acquisition Strategy

Beginning in FY12 the program was restructured to meet the Army's emerging 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604665A: <i>FCS Sustainment & Training R&D</i>	PROJECT FC6: <i>BCT Network Hardware & Software</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SPECIAL TERMINATION COSTS	Various	THE BOEING COMPANY:ST. LOUIS, MO	94.693	-		-		-		-	0.000	94.693	0.000
Subtotal			94.693	-		-		-		-	0.000	94.693	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)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor SOSCOE Development CP 13/14	Various	THE BOEING COMPANY:St. Louis, MO	50.967	-		-		-		-	Continuing	Continuing	Continuing
COMMUNICATIONS SYSTEMS SOFTWARE CP 13/14	Various	THE BOEING COMPANY,:St. Louis, MO	45.351	-		-		-		-	Continuing	Continuing	Continuing
CONTRACTOR BATTLE COMMAND SOFTWARE / SEPM CP 13/14	Various	THE BOEING COMPANY,:ST LOUIS, MO	26.797	-		-		-		-	Continuing	Continuing	Continuing
CONTRACTOR BATTLE COMMAND SOFTWARE - WARFIGHTER MACHINE INTERFACE SERVICES (WMIS) CP 13/14	Various	THE BOEING COMPANY,:ST LOUIS, MO	21.420	-		-		-		-	Continuing	Continuing	Continuing
CONTRACTOR BATLE COMMAND SOFTWARE - BATTLE COMMAND & MISSION EXECUTION (BCME) CP 13/14	Various	THE BOEING COMPANY,:ST LOUIS, MO	20.823	-		-		-		-	Continuing	Continuing	Continuing
CONTRACTOR BATTLE COMMAND SOFTWARE - SITUATIONAL	Various	THE BOEING COMPANY,:ST LOUIS, MO	14.887	-		-		-		-	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
UNDERSTANDING (SU) CP 13/14													
CONTRACTOR BATTLE COMMAND SOFTWARE - PLANNING AND PREPARATION SERVICES (PPS) CP 13/14	Various	THE BOEING COMPANY,:ST LOUIS, MO	6.565	-		-		-		-	Continuing	Continuing	Continuing
CONTRACTOR FUSION SOFTWARE	Various	THE BOEING COMPANY:ST LOUIS, MO	9.593	-		-		-		-	Continuing	Continuing	Continuing
CONTRACTOR EMBEDDED TRAINING SOFTWARE	Various	THE BOEING COMPANY,:ST LOUIS, MO	11.084	-		-		-		-	Continuing	Continuing	Continuing
CONTRACTOR LOGISTICS PRODUCTS APPLICATION INTEGRATION CP 13/14	Various	THE BOEING COMPANY:ST LOUIS, MO	23.345	-		-		-		-	Continuing	Continuing	Continuing
CONTRACTOR COMMUNICATION HARDWARE (AIR & GROUND) CP 13/14	Various	THE BOEING COMPANY:ST. LOUIS, MO	15.980	-		-		-		-	Continuing	Continuing	Continuing
CONTRACTOR COMMON CONTROLLER (CC) HARDWARE & SOFTWARE CP 13/14	Various	THE BOEING COMPANY:ST LOUIS, MO	38.446	-		-		-		-	Continuing	Continuing	Continuing
CONTRACTOR ICS - COMPUTER PROCESSING, HARDWARE AND SOFTWARE CP 13/14	Various	THE BOEING COMPANY:ST. LOUIS, MO	76.649	-		-		-		-	0.000	76.649	0.000
CONTRACTOR NETWORK INTEGRATION (SW/HW) CP 13/14	Various	THE BOEING COMPANY:ST. LOUIS, MO	41.464	-		-		-		-	0.000	41.464	0.000
CONTRACTOR FEE	Various	THE BOEING COMPANY:ST. LOUIS, MO	40.337	-		-		-		-	0.000	40.337	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604665A: <i>FCS Sustainment & Training R&D</i>	PROJECT FC6: <i>BCT Network Hardware & Software</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NIE SUE - 11.2/12.1	Various	VARIOUS:VARIOUS	47.116	-		-		-		-	0.000	47.116	0.000
NIE SUE 12.2	Various	VARIOUS:VARIOUS	1.100	-		-		-		-	0.000	1.100	0.000
GOVERNMENT - SYS ENG - IBCT INCR 1	MIPR	VARIOUS:VARIOUS	4.156	-		-		-		-	0.000	4.156	0.000
GOVERNMENT - SYS ENG (BOEING BC TRANSFER)	Allot	SOSI:WARREN, MI	7.900	-		-		-		-	0.000	7.900	0.000
Subtotal			503.980	-		-		-		-			

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

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GOVERNMENT TEST AND M&S	Various	PEO I:Warren, MI	-	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			-	-		-		-		-			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604665A: <i>FCS Sustainment & Training R&D</i>	PROJECT FC6: <i>BCT Network Hardware & Software</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				

Remarks
 FY11: All System of System Test and Evaluation costs for this project are included in 0604661 FCS SoS Engineering and Program Management Program Element.
 F11: All Platform specific Test and Evaluation costs for this project are included in 0604661 FCS Sos Engineering and Program Management Program Element.

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	598.673	-		-		-		-			

Remarks

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	44.513	59.195	32.621	-	32.621	42.965	21.112	17.287	14.540	Continuing	Continuing
L67: <i>SOLDIER NIGHT VISION DEVICES</i>	15.021	23.946	-	-	-	14.775	15.011	12.603	12.889	Continuing	Continuing
L70: <i>NIGHT VISION DEV ED</i>	5.000	12.289	11.116	-	11.116	-	-	-	-	Continuing	Continuing
L75: <i>Profiler</i>	5.799	2.593	-	-	-	-	-	-	-	Continuing	Continuing
L76: <i>Dismounted Fire Support Laser Targeting Systems</i>	18.693	-	-	-	-	-	-	-	-	Continuing	Continuing
L79: <i>JOINT EFFECTS TARGETING SYSTEMS (JETS)</i>	-	20.367	21.505	-	21.505	28.190	6.101	4.684	1.651	Continuing	Continuing

Note

Program Change Summary Explanation:

Fiscal Year 2011: Program Decrease - \$6.197 million reprogrammed from project L67 to Program Element 633710, Project K70 Advanced Weapon Sight Technology (AWST) and Focal Plane Array (FPA) High Definition Long Wave Infrared (HDLWIR) technology efforts.

Fiscal Year 2013: Program Decrease - \$18.979 million realigned from Project L67 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 Imaging Engine (transitioned from an Advanced Technology Objective); night vision sensor acquisition support of Unattended Ground Sensors and ASTAMIDS;

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>
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development of a Standard Ground Station for Persistent Surveillance Sensors (RAID and PTDS), development for the Next Generation FLIR (NGF) B-kit and improvements and enhancements to Persistent Surveillance System (PSS) and Pre Planned Product Improvements (P3I) software related to meeting network interoperability requirements and improving the soldier - machine interface of the POR.

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)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	52.549	59.265	51.417	-	51.417
Current President's Budget	44.513	59.195	32.621	-	32.621
Total Adjustments	-8.036	-0.070	-18.796	-	-18.796
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-6.197	-			
• SBIR/STTR Transfer	-1.504	-			
• Adjustments to Budget Years	-0.335	-0.070	0.183	-	0.183
• Overseas Contingency Operations (OCO)	-	-	-18.979	-	-18.979

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>				PROJECT L67: <i>SOLDIER NIGHT VISION DEVICES</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
L67: <i>SOLDIER NIGHT VISION DEVICES</i>	15.021	23.946	-	-	-	14.775	15.011	12.603	12.889	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 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.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>Title: Enhanced Night Vision Goggle</p> <p align="right">Articles:</p> <p>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.</p> <p>FY 2011 Accomplishments: Initiated Product Qualification Test (PQT) for multiple sources for the AN/PSQ-20 (Enhanced Night Vision Goggle).</p> <p>FY 2012 Plans: Complete PQT for multiple sources of AN/PSQ-20 (Enhanced Night Vision Goggle).</p>	3.186 0	1.817 0	-
<p>Title: Green Laser Interdiction System (GLIS)</p> <p align="right">Articles:</p> <p>Description: The Green Laser Interdiction System (GLIS) is a rifle-mounted laser that allows the Soldier to interdict hostile actions through non-lethal effects.</p> <p>FY 2011 Accomplishments: Completed the development of lightweight multi-purpose lasers to be used as a nonlethal method of warning a vehicle operator or gaining their attention beyond 75 meters and to identify whether friend or foe.</p>	0.448 0	-	-
<p>Title: Sense Through The Wall (STTW)</p> <p align="right">Articles:</p>	4.901 0	4.859 0	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L67: <i>SOLDIER NIGHT VISION DEVICES</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>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.</p> <p>FY 2011 Accomplishments: Completed developmental and performed operational test activities for STTW representative test articles.</p> <p>FY 2012 Plans: Complete software modifications to enhance sensors performance and complete operational test activities.</p>				
<p>Title: Family of Weapons Sights (FWS)</p> <p>Description: FWS is a family of weapon sights that utilize advances in thermal and image intensified technologies to produce Individual, Crew-Served, and Sniper weapon sights operable in-line with a day optic or in a stand-alone mode. FWS includes fused multi-band imagery and rapid target acquisition with ballistic equations, providing the Soldier with improved capabilities during day and night operations.</p> <p>FY 2011 Accomplishments: Initiated the development of the Family Weapon Sight (FWS) program, that includes Individual, Crew-Served and Sniper variants.</p> <p>FY 2012 Plans: Continue the development of the Family of Weapon Sights (FWS) systems, which includes clip-on and fused weapon sights, with a focus on the Individual variant to provide a clip-on, rapid target acquisition capability, and continued development of decreased (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 SWaP consumption when integrated into the Crew-Served and Sniper variants.</p>		<p>Articles:</p> <p>6.301 0</p>	<p>16.830 0</p>	-
<p>Title: Small Tactical Optical Rifle Mounted</p> <p>Description: The AN/PSQ-23 Small Tactical Optical Rifle Mounted (STORM) Micro-Laser Range Finder (MLRF) is a weapon-mounted multi-function laser system. It provides an eye safe laser range finder, digital compass, Infrared (IR) and visible aiming lights, and an IR illuminator for far target location with continuous range, accuracy, weight and power performance enhanced capabilities. It also has an embedded training system, Multiple Integrated Laser Engagement System (MILES).</p> <p>FY 2011 Accomplishments:</p>		<p>Articles:</p> <p>0.185 0</p>	<p>0.440 0</p>	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L67: <i>SOLDIER NIGHT VISION DEVICES</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Completed laser system testing.			
FY 2012 Plans: Complete production qualification testing.			
Accomplishments/Planned Programs Subtotals	15.021	23.946	-

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 603774A VT7: 603774A - <i>Night Vision Systems Advanced Development (VT7)</i>			10.715		10.715		6.208	5.260	5.193	Continuing	Continuing
• Helmet Mounted Enhanced Vision Devi: <i>Helmet Mounted Enhanced Vision Devices (HMEVD) (SSN K36400)</i>	8.098	117.442	125.917		125.917	174.861	222.725		226.581	Continuing	Continuing
• Thermal Weapon Sight (TWS): <i>Thermal Weapon Sight (TWS) (SSN K22900)</i>	249.001	186.859	82.162		82.162	95.920	1,441.121		143.565	Continuing	Continuing
• Sniper Night Sight (SNS): <i>Sniper Night Sight (SNS) (SSN K41500)</i>	35.091	4.892	11.660		11.660			11.049	11.240	Continuing	Continuing
• Multi-Function Aiming Light <i>(MFAL): Multi-Function Aiming Light (MFAL) (SSN K35000)</i>	21.434									0.000	21.434
• Sense Through The Wall <i>(STTW): Sense Through The Wall (STTW) (SSN KA2300)</i>	24.799	57.498	6.212		6.212		15.015			0.000	103.666
• Small Tactical Optical Rifle <i>Mounte: Small Tactical Optical Rifle Mounted (STORM) (SSN K35110)</i>	8.472	10.227	20.717		20.717		20.319	20.305	15.025	Continuing	Continuing
• Green Laser Interdiction System <i>(GL: Green Laser Interdiction System (GLIS) (SSN AD5311)</i>		25.356	1.014		1.014					0.000	27.385

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L67: <i>SOLDIER NIGHT VISION DEVICES</i>

D. Acquisition Strategy

The various developmental programs in this project 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L67: <i>SOLDIER NIGHT VISION DEVICES</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Sense Through The Wall (STTW)	Various	TBD:TBD	1.963	-		-		-		-	Continuing	Continuing	Continuing
Sense Through The Wall (STTW)	SS/FP	L-3 CyTerra:ACC APG	0.522	-		-		-		-	0.000	0.522	0.000
Laser Detection/Laser Warning Device	Various	Fibertek:HERNDON, VA	2.428	-		-		-		-	Continuing	Continuing	Continuing
Sense Through The Wall (STTW)	SS/FP	Raytheon:ACC APG	-	3.209		-		-		-	0.000	3.209	0.000
Family of Weapon Sights (FWS)	Various	CECOM ACQ CENTER:ALEXANDRIA, VA	5.939	5.923		-		-		-	Continuing	Continuing	Continuing
Focal Plane Arrays (FPA)	Various	DOI:FT HUACHUCA, AZ	17.543	-		-		-		-	Continuing	Continuing	Continuing
Sniper Fire Detection and Location Technology	Various	Fibertek:HERNDON, VA	1.790	-		-		-		-	Continuing	Continuing	Continuing
Advanced Weapon Sight Technologies (AWST)	Various	TBD:TBD	-	10.297		-		-		-	0.000	10.297	0.000
Subtotal			30.185	19.429		-		-		-			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	Various	NVESD:Ft Belvoir, VA	0.363	0.610		-		-		-	Continuing	Continuing	0.000
Matrix Support	Various	TACOM:Warren, MI	0.789	0.361		-		-		-	0.000	1.150	0.000
Subtotal			1.152	0.971		-		-		-			0.000

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L67: <i>SOLDIER NIGHT VISION DEVICES</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
ENHANCED NIGHT VISION GOGGLES (ENVG)		■																										
ENVG Development/ Operational Testing																												
SENSE THRU THE WALL (STTW)		■																										
STTW MS C																												
FAMILY OF WEAPON SIGHTS (FWS)		■																										
FWS MS A																												
FWS MS B																												
FWS MS C																												
Improved Focal Plane Array (FPA) Development																												
SMALL TACTICAL OPTICAL RIFLE MOUNTED (STORM) - Production Qual. Test (PQT)																												
IED Detection Development (IDD)																												
Optical Augmentation (OA) Development																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L67: <i>SOLDIER NIGHT VISION DEVICES</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ENHANCED NIGHT VISION GOGGLES (ENVG)	2	2011	2	2011
ENVG Development/ Operational Testing	3	2011	2	2012
SENSE THRU THE WALL (STTW)	2	2011	2	2011
STTW MS C	4	2012	4	2012
FAMILY OF WEAPON SIGHTS (FWS)	2	2011	2	2011
FWS MS A	4	2011	4	2011
FWS MS B	1	2014	1	2014
FWS MS C	2	2015	2	2015
Improved Focal Plane Array (FPA) Development	1	2012	4	2012
SMALL TACTICAL OPTICAL RIFLE MOUNTED (STORM) - Production Qual. Test (PQT)	2	2011	1	2013
IED Detection Development (IDD)	3	2014	4	2016
Optical Augmentation (OA) Development	3	2014	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L70: <i>NIGHT VISION DEV ED</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
L70: <i>NIGHT VISION DEV ED</i>	5.000	12.289	11.116	-	11.116	-	-	-	-	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.

The funds allocated to Gunshot Detection supported a System Characterization study and Technology Readiness Level (TRL) determination for potential technical capabilities. The system characterization study will ascertain the performance of industry systems and will enhance Government knowledge of the benefits of various technology types and modalities in determining incoming gunshots. The study will aid the Government in writing the Performance Work Statement (PWS), Performance Specification and the Interface Control Document (ICD) and will enable schedule acceleration.

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.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L70: <i>NIGHT VISION DEV ED</i>
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This project also supports development efforts for the Advanced Thermal Imaging Engine, to include development of the Ground Platform Thermal Imaging Engine leading to the fabrication of multiple prototypes with Block II Electro Optical Counter-Counter Measures (EOCCM) improvements incorporated, and support future second source development activities. In addition, this project also supports the development of the Pre Planned Product Improvements (P3I) software, including meeting the network interoperability requirements and improving the soldier - machine interface for the Persistent Surveillance System (PSS) Program of Record (POR).

FY 2013 funding supports initiation of development efforts for the Next Generation FLIR (NGF) B-kit to include the Next Generation FLIR (NGF) B-Kit specification development and NGF B-Kit MSB preparation activities. This effort leverages activities associated with the Advanced Thermal Imaging Engine. Additionally, FY 2013 funding supports continued activities associated with the Persistent Surveillance System (PSS) Pre Planned Product Improvements (P3I) software related to meeting network interoperability requirements and improving the soldier - machine interface of the POR.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>Title: Thermal Imaging Engine</p> <p align="right">Articles:</p> <p>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.</p> <p>FY 2011 Accomplishments: Funding supported Qualification Testing, system-level test activities, completion of production preparation activities, and competition stimulation.</p> <p>FY 2012 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.</p>	2.789 0	6.976 0	- -
<p>Title: Next Generation FLIR B-Kit</p> <p>Description: Development of the Next Generation FLIR B-Kit. NGF B-Kit will represent the B-Kit materiel solution in accordance with the I-FLIR CDD, resulting in a common sensor component for both Ground and Airborne host platforms.</p> <p>FY 2013 Plans: Following FY 2012 approval of the I-FLIR CDD and Platform ECP/Sensor Upgrade programs, funding supports Next Generation FLIR (NGF) B-Kit specification development and NGF B-Kit MS B preparation activities.</p>	-	-	6.909
<p>Title: Gunshot Detection Systems (GDS)</p> <p align="right">Articles:</p>	2.211 0	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L70: <i>NIGHT VISION DEV ED</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Description: The system uses passive acoustic detection, computer-based signal processing, and both aural and visual indications to help troops locate a hostile shooter by reporting relative shooter azimuth, range, and elevation from incoming small arms fire.</p> <p>FY 2011 Accomplishments: FY 2011 funds supported a system characterization study and Technology Readiness Level (TRL) determination for potential capabilities.</p>			
<p>Title: Pre Planned Product Improvements (P3I) software for the Persistent Surveillance System (PSS) Program of Record (POR)</p> <p align="right">Articles:</p> <p>Description: Funding is provided for the following efforts.</p> <p>FY 2012 Plans: Develop Pre Planned Product Improvements (P3I) software for the Persistent Surveillance System (PSS) Program of Record (POR) to include meeting the network interoperability requirement and improving the soldier - machine interface of the POR. Resultant improvements would be implemented through maintenance upgrades to fielded systems.</p> <p>FY 2013 Plans: Continued development of the Pre Planned Product Improvements (P3I) software for the Persistent Surveillance System (PSS) Program of Record (POR), to include meeting the network interoperability requirement and improving the soldier - machine interface of the POR. Resultant improvements would be implemented through maintenance upgrades to fielded systems. This effort establishes the Army Sensor Computing Environment (CE) effort in support of the Common Operating Environment (COE) vision.</p>	-	5.313 0	4.207
Accomplishments/Planned Programs Subtotals	5.000	12.289	11.116

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• LRAS3 (K38300): <i>Long Range Advanced Scout Surveillance System (LRAS3) (K38300) OPA2</i>	255.641	102.334								0.000	357.975

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L70: <i>NIGHT VISION DEV ED</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PM ABRAMS (PE 273735 D330): <i>Abrams Upgrade Program (PE 273735 D330)</i>							187.401	166.891	137.874	Continuing	Continuing
• GCV (PE 0605625A FC8): <i>Ground Combat Vehicle (PE 0605625A FC8)</i>	934.366	884.387	1,963.178		1,963.178		732.849	380.600		Continuing	Continuing

D. Acquisition Strategy

The development programs in this project are currently based on competitive awards and under cost reimbursement type contracts. FY 2013 funding supports NGF B-Kit Spec Development and MSB activities following FY 2012 approval of the I-FLIR CDD and Platform ECP/Sensor Upgrade programs. Additionally, FY 2013 funding supports continued development of the Persistent Surveillance System (PSS) Pre Planned Product Improvements (P3I) software.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L70: <i>NIGHT VISION DEV ED</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Management	C/FP	PM, NV/RSTA:Ft. Belvoir, VA & Ft. Monmouth, NJ	8.239	0.599		0.616		-		0.616	0.000	9.454	9.454
Subtotal			8.239	0.599		0.616		-		0.616	0.000	9.454	9.454

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SGS/RAID	C/CPIF	Sarnoff:Princeton, NJ	4.913	-		-		-		-	0.000	4.913	4.913
FY 2009 - FY 2011: Thermal Imaging - Design and Demonstration	C/FP	Various:Various	13.478	-		-		-		-	0.000	13.478	13.478
FY 2010-FY 2011: Thermal Imaging - Source Risk Reduction	C/CPAF	Various:Various	1.361	-		-		-		-	0.000	1.361	1.361
FY 2012-FY 2013: Develop, Fab, and Qual of a common Ground Platform Engine with Block II EOCCM	TBD	Various:Various	-	4.617		2.918		-		2.918	0.000	7.535	7.535
Gunshot Detection Systems	RO	ARDEC:Aberdeen Proving Grounds (APG)	2.211	-		-		-		-	0.000	2.211	2.211
PSS P3I	C/FP	TBD:TBD	-	5.313		3.591		-		3.591	0.000	8.904	8.904
Standoff Suicide Bomber Detection System (SSBDS)	C/CPFF	CACI:Lorton, VA	2.000	-		-		-		-	0.000	2.000	2.000
FOB S2S (Forward Operating Base Sensor to Shooter)	C/CPFF	CACI:Lorton, VA	0.500	-		-		-		-	0.000	0.500	0.500
Remotely Operated HMDS (Husky Mounted Detection System)	C/CPFF	EOIR:Fredricksburg VA	7.000	-		-		-		-	0.000	7.000	7.000
Subtotal			31.463	9.930		6.509		-		6.509	0.000	47.902	47.902

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L70: <i>NIGHT VISION DEV ED</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support	Various	Various:Various	22.244	1.760		3.991		-		3.991	0.000	27.995	27.995
Subtotal			22.244	1.760		3.991		-		3.991	0.000	27.995	27.995

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Test Support*	MIPR	Various:Various	15.850	-		-		-		-	0.000	15.850	15.850
Subtotal			15.850	-		-		-		-	0.000	15.850	15.850

Remarks
* Includes PSDS2, UGS, STTW, 3GF, PSDS2, FCS UGS and other sensor test and evaluation activities.

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	77.796	12.289		11.116		-		11.116	0.000	101.201	101.201

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L70: <i>NIGHT VISION DEV ED</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Thermal Imaging - Develop, Fab and Qual of Ground Platform Engine with BII EOCCM	2	2012	4	2013
Persistent Surveillance System (PSS) Pre Planned Product Improvement (P3I)effort	2	2012	4	2013
FOB S2S (Forward Operating Base Sensor to Shooter)	3	2011	4	2011
Remotely Operated HMDS (Husky Mounted Detection System)	3	2011	4	2011
Standoff Suicide Bomber Detection System (SSBDS)	2	2011	4	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L75: <i>Profiler</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
L75: <i>Profiler</i>	5.799	2.593	-	-	-	-	-	-	-	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.

There is no FY13 funding.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>Title: Block III backup sensor effort.</p> <p style="text-align: right;">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: Continue Block III backup sensor effort</p>	0.245 0	- -	- -
<p>Title: software porting to laptop.</p> <p style="text-align: right;">Articles:</p>	4.986 0	- -	- -

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L75: <i>Profiler</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: Complete effort for software porting to laptop</p> <p>Title: Production Representative Prototype Systems (PRPS).</p> <p align="right">Articles:</p>	0.568 0	-	-
<p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: Continue reduction of physical configuration, build and test eight Production Representative Prototype Systems (PRPS).</p> <p>Title: Block III Limited User Testing and Austere Testing.</p> <p align="right">Articles:</p>	-	2.593 0	-
Accomplishments/Planned Programs Subtotals	5.799	2.593	-

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Profiler OPA SSN K27900: <i>Profiler</i>	4.384	5.312	12.482		12.482		4.203	5.039		0.000	35.248

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 on schedule 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L75: <i>Profiler</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management	SS/FP	PM Nav Sys/JTCI-G:Various	2.150	0.473		-		-		-	Continuing	Continuing	Continuing
Subtotal			2.150	0.473		-		-		-			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Award efforts for s/w porting to laptop	C/FP	Mantech:Red Bank, NJ	5.495	-		-		-		-	Continuing	Continuing	Continuing
Initiate backup sensor effort	Various	Army Research Lab:various	1.191	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			6.686	-		-		-		-			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	CECOM:Aberdeen, MD	2.516	0.499		-		-		-	Continuing	Continuing	Continuing
Sys Engr/Technical Assistance	SS/FP	Various:Various	1.246	0.752		-		-		-	Continuing	Continuing	Continuing
OGA	MIPR	ARL, Various:WSMR, NM	1.089	0.178		-		-		-	Continuing	Continuing	Continuing
Subtotal			4.851	1.429		-		-		-			

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L75: <i>Profiler</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Conduct Block III Development Testing (DT)																												
Conduct Block III Limited User Test (OT)/ Austere Testing																												
Austere Testing																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L75: <i>Profiler</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Conduct Block III Development Testing (DT)	3	2011	4	2011
Conduct Block III Limited User Test (OT)/Austere Testing	1	2012	3	2012
Austere Testing	4	2012	4	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L76: <i>Dismounted Fire Support Laser Targeting Systems</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
L76: <i>Dismounted Fire Support Laser Targeting Systems</i>	18.693	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Continuing efforts to support Joint Effects Targeting System (JETS) have been transitioned to Program Element 0604710A project L79 beginning in FY 2012.

This project matures technologies and capabilities which benefit, and may be inserted into, the Lightweight Laser Designator Rangefinder (LLDR, AN/PED-1) and the Joint Effects Targeting System (JETS). The LLDR and JETS are targeting devices used by dismounted Soldiers to locate, identify, and target enemy assets. This project focuses on reducing weight, improving imaging performance, and increasing targeting accuracy. Development also focuses on affordable, non-magnetic, high accuracy, Azimuth and Vertical Angle Measurement (AVAM) devices with reduced size, weight and power characteristics.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>Title: Azimuth and Vertical Angle Measurement (AVAM) devices</p> <p align="right">Articles:</p> <p>Description: AVAM is a non-magnetic based inertial navigation materiel solution for targeting devices. The AVAM effort improves azimuth accuracy leading to reduced collateral damage and improved engagement efficiency.</p> <p>FY 2011 Accomplishments: Continued development and evaluation of AVAM devices.</p>	4.240 0	-	-
<p>Title: Joint Effects Targeting System (JETS) Target Location Designation System (TLDS)</p> <p align="right">Articles:</p> <p>Description: JETS TLDS is a lightweight mission equipment set for the dismounted forward observers and Joint Tactical Air Controllers (JTAC). JETS provides observers and controllers the means to call for fire and control delivery of air, ground and naval surface fire support, using precision munitions and effects (both lethal and non-lethal).</p> <p>FY 2011 Accomplishments: Continued Target Locator improvements to support use of Precision Guided Weapons by dismounted Soldiers and reduce Soldier load. Developed and built Technology Development (TD) prototypes to support JETS TLDS Milestone B decision.</p>	14.453 0	-	-
Accomplishments/Planned Programs Subtotals	18.693	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L76: <i>Dismounted Fire Support Laser Targeting Systems</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• LLDR (SSN K31100): <i>Lightweight Laser Designator Rangefinder (LLDR) (SSN K31100)</i>	87.971	58.042								0.000	146.013
• LLDR Mod-of-In-Service (SSN KA3100): <i>Lightweight Laser Designator Rangefinder (LLDR) MOD-of-In-Service (SSN KA3100)</i>			22.403		22.403		48.163			0.000	96.603
• JETS (SSN K32101): <i>Joint Effects Targeting System (JETS) (SSN K32101)</i>							115.894	91.695	67.443	827.812	1,102.844
• PE 654710/DL79: <i>Joint Effects Targeting System (JETS) (PE 654710 Project DL79)</i>		20.367	21.505		21.505		6.101	4.684	1.651	0.000	82.498

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L76: <i>Dismounted Fire Support Laser Targeting Systems</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JETS TLDS Technology Development prototype	MIPR	Northrop-Gruman Laser Systems:Apopka, FL	5.208	-		-		-		-	0.000	5.208	0.000
JETS TLDS Technology Development prototype	MIPR	BAE Systems:Nashua, NH	4.099	-		-		-		-	0.000	4.099	0.000
Azimuth and Vertical Angle Measurement (AVAM)	MIPR	Johns Hopkins Applied Physics Lab:Laurel, MD	4.870	-		-		-		-	0.000	4.870	0.000
Handheld Precision Targeting Demo	MIPR	Battelle Memorial Institute:Columbus, Ohio	0.025	-		-		-		-	0.000	0.025	0.000
Multi Function/Laser Development	MIPR	All Native Services:Winnebago, NE	0.772	-		-		-		-	0.000	0.772	0.000
TLDS ATO	SS/CPFF	Vectronix, Inc:Leesburg, VA	0.700	-		-		-		-	0.000	0.700	0.000
TLDS ATO	SS/CPFF	TOYON Research Corp:Goleta, CA	0.800	-		-		-		-	0.000	0.800	0.000
TLDS ATO	SS/CPFF	A-Tech Corporation:Albuquerque, NM	0.750	-		-		-		-	0.000	0.750	0.000
TLM Phase 1 upgrade	MIPR	NVESD:Ft. Belvoir, VA	0.711	-		-		-		-	0.000	0.711	0.000
Precision Azimuth Vercle Angle (PAVAM) Module Technical Development	SS/CPFF	CACI Technologies, Inc:Chantilly, VA	2.490	-		-		-		-	0.000	2.490	0.000
Subtotal			20.425	-		-		-		-	0.000	20.425	0.000

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Functional Support Agreement (FSA)	MIPR	NVESD:Ft. Belvoir, VA	2.022	-		-		-		-	0.000	2.022	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L76: <i>Dismounted Fire Support Laser Targeting Systems</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Functional Support Agreement (FSA)	MIPR	Army Research Lab (ARL):APG, MD	0.022	-		-		-		-	0.000	0.022	0.000
Functional Support Agreement (FSA)	MIPR	TACOM:Rock Island, IL	0.043	-		-		-		-	0.000	0.043	0.000
Travel in support of program	MIPR	Various locations:Various locations	0.058	-		-		-		-	0.000	0.058	0.000
JHU/APL Support Costs	SS/CPFF	Johns Hopkins University Applied Physics Laboratory:Laurel, MD	1.100	-		-		-		-	0.000	1.100	0.000
Subtotal			3.245	-		-		-		-	0.000	3.245	0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing for LLDR 2H	MIPR	White Sands Missile Range (WSMR):White Sands, New Mexico	0.332	-		-		-		-	0.000	0.332	0.000
Travel in support of testing	MIPR	Various locations:Various	0.022	-		-		-		-	0.000	0.022	0.000
TLDS Sustainment/Reliability Testing	MIPR	AMSAA:APG, MD	0.017	-		-		-		-	0.000	0.017	0.000
Subtotal			0.371	-		-		-		-	0.000	0.371	0.000

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		-	-	-	-	0.000	24.041	0.000

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>				PROJECT L79: <i>JOINT EFFECTS TARGETING SYSTEMS (JETS)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
L79: <i>JOINT EFFECTS TARGETING SYSTEMS (JETS)</i>	-	20.367	21.505	-	21.505	28.190	6.101	4.684	1.651	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 Corps). JETS provides dismounted forward observers and Joint Terminal Attack Controllers (JTAC) the means to call for fire and control delivery of air, ground and naval surface fire support using precision munitions and effects (both lethal and non-lethal). The primary component of JETS is the Target Location Designation System (TLDS). The TLDS provides 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 Systems for each service. The future Forward Entry System capability is achieved through product improvements to existing service Forward Entry Systems. These improvements are funded by the respective service Forward Entry System program management offices and will not be further discussed in this document.

JETS TLDS achieved MS-A (4Q FY 2010). An Army Cost Position (ACP) was approved as part of MS A. Starting in FY 2012, the ACP aligns JETS TLDS funding under this project in lieu of 0604710A L76 (Dismounted Fire Support Targeting System).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: Joint Effects Targeting System (JETS) TLDS	-	20.367	21.505
Articles:		0	
Description: JETS TLDS is a lightweight mission equipment set for the dismounted forward observers and Joint Terminal Attack Controllers (JTAC). JETS provides observers and controllers the means to call for fire and control delivery of air, ground and naval surface fire support, including using precision munitions and effects (both lethal and non-lethal).			
FY 2012 Plans: Test Prototype Systems and Azimuth and Vertical Angle Measurement (AVAM) devices, conduct developmental and early user testing, initiate source selection preparation / process for the Engineering and Manufacturing Development (EMD) phase.			
FY 2013 Plans: Complete EMD source selection, and begin design of EMD prototype systems from two vendors. The prototypes will be integrated with qualified AVAM solution.			
Accomplishments/Planned Programs Subtotals	-	20.367	21.505

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L79: <i>JOINT EFFECTS TARGETING SYSTEMS (JETS)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Fire Support Laser Targeting Sys: <i>Dismounted Fire Support Laser Targeting Systems (PE 654710 / DL76)</i>	18.693									0.000	18.693
• Joint Effects Targeting System: <i>Joint Effects Targeting System (SSN K32101)</i>							115.894	91.695	67.443	827.812	1,102.844

D. Acquisition Strategy

This project continues 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L79: <i>JOINT EFFECTS TARGETING SYSTEMS (JETS)</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JETS TLDS prototype development, integration, and test - Contractor 1 year 1	C/TBD	NGLS:Apopka, FL	-	1.495		-		-		-	0.000	1.495	0.000
JETS TLDS prototype development, integration, and test - Contractor 2 year 1	C/TBD	BAE Systems:Nashua, NH	-	1.495		-		-		-	0.000	1.495	0.000
AVAM Development	C/TBD	Various:TBD	-	2.584		-		-		-	0.000	2.584	0.000
JETS TLDS prototype development, integration, and test - Contractor 1 year 2	C/TBD	TBD:TBD	-	-		8.122		-		8.122	0.000	8.122	0.000
JETS TLDS prototype development, integration, and test - Contractor 2 year 2	C/TBD	TBD:TBD	-	-		8.122		-		8.122	0.000	8.122	0.000
Subtotal			-	5.574		16.244		-		16.244	0.000	21.818	0.000

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JETS TLDS prototype technical maturation	C/Various	TBD:TBD	-	2.476		-		-		-	0.000	2.476	0.000
Functional Support Cost	TBD	Night Vision Electronics Sensors Directorate:Ft. Belvoir	-	1.920		1.837		-		1.837	Continuing	Continuing	0.000
Science and Engineering Support	TBD	Johns Hopkins Applied Physics Lab:Laurel, MD	-	3.572		0.652		-		0.652	Continuing	Continuing	0.000
Program Management Support	C/Various	Various:Various	-	1.925		1.985		-		1.985	Continuing	Continuing	0.000
Subtotal			-	9.893		4.474		-		4.474			0.000

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L79: <i>JOINT EFFECTS TARGETING SYSTEMS (JETS)</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
JOINT EFFECTS TARGETING SYSTEMS (JETS) TARGET LOCATION DESINGATION SYSTEM (TLDS)	■																											
Technical maturation for JETS TLDS prototypes							■	■																				
JETS TLDS prototype production							■	■	■	■																		
Development tests							■	■	■	■																		
Early user assessments							■	■	■	■																		
Technology Readiness Assessments							■	■	■	■																		
JETS TLDS MS B											■	■																
Engineering & Manufacturing Development											■	■	■	■	■	■												
JETS TLDS MS C															■	■												
LRIP																			■	■	■	■	■	■				
FMR																							■	■				
FRP																							■	■				
IOC																											■	■

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L79: <i>JOINT EFFECTS TARGETING SYSTEMS (JETS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JOINT EFFECTS TARGETING SYSTEMS (JETS) TARGET LOCATION DESINGATION SYSTEM (TLDS)	2	2011	2	2011
Technical maturation for JETS TLDS prototypes	1	2012	2	2012
JETS TLDS prototype production	2	2012	4	2012
Development tests	2	2012	4	2012
Early user assessments	3	2012	4	2012
Technology Readiness Assessments	3	2012	4	2012
JETS TLDS MS B	1	2013	1	2013
Engineering & Manufacturing Development	1	2013	2	2015
JETS TLDS MS C	2	2015	2	2015
LRIP	3	2015	3	2016
FMR	3	2016	3	2016
FRP	3	2016	3	2016
IOC	4	2016	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	2.043	2.073	2.132	-	2.132	2.117	2.127	2.202	2.239	Continuing	Continuing
548: MIL SUBSISTENCE SYS	2.043	2.073	2.132	-	2.132	2.117	2.127	2.202	2.239	Continuing	Continuing

Note

FY13: 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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	2.118	2.075	2.109	-	2.109
Current President's Budget	2.043	2.073	2.132	-	2.132
Total Adjustments	-0.075	-0.002	0.023	-	0.023
• Congressional General Reductions	-	-0.002			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.075	-	0.023	-	0.023

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>	PROJECT 548: <i>MIL SUBSISTENCE SYS</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
548: <i>MIL SUBSISTENCE SYS</i>	2.043	2.073	2.132	-	2.132	2.117	2.127	2.202	2.239	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 2011	FY 2012	FY 2013
<p>Title: Containerized Kitchen Modernization (CK)</p> <p align="right">Articles:</p> <p>Description: New Containerized Kitchen layout with modular, closed combustion, thermostatically controlled appliances that reduce heat stress inside the kitchen</p> <p>FY 2011 Accomplishments: Initiate development of updated CK components for incorporation into CK RESET program. Lay out plan to incrementally transition ready technologies into CK RESET line.</p> <p>FY 2012 Plans: Test and evaluate in accordance to Test and Evaluation Master Plan (TEMP). Prepare and approve Engineering Change Proposal (ECP) and transition to RESET program</p> <p>FY 2013 Plans: Upgrades/Improvements made as needed. Full set of modular appliance operational test prototypes will be fabricated and undergo technical testing. Specifications will be further updated to reflect maturity. Technical data will be transitioned to RESET effort.</p>	<p>0.534</p> <p>0</p>	<p>0.400</p> <p>0</p>	<p>0.300</p>
<p>Title: Containerized Ice Making System (CIMS)</p> <p align="right">Articles:</p>	<p>0.409</p> <p>0</p>	<p>0.200</p> <p>0</p>	<p>0.100</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>	PROJECT 548: <i>MIL SUBSISTENCE SYS</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>Description: Provides a containerized ice making system to support base camps</p> <p>FY 2011 Accomplishments: Complete fabrication and conduct validation test and evaluation of the CIMS prototype. Initiate Developmental Testing (DT).</p> <p>FY 2012 Plans: Complete DT and initiate Operational Testing (OT).</p> <p>FY 2013 Plans: Complete OT. Prepare and approve Engineering Change Proposal (ECP) and transition into production.</p>				
<p>Title: Solar Power Refrigeration</p> <p align="right">Articles:</p> <p>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</p> <p>FY 2011 Accomplishments: Complete fabrication and conduct test and evaluation of the Solar Power Refrigeration prototype.</p>		0.071 0	-	-
<p>Title: Fielded Individual Ration Improvement Project (FIRIP)</p> <p align="right">Articles:</p> <p>Description: Continuous product improvement project for the Meal Ready to Eat (MRE)</p> <p>FY 2011 Accomplishments: Based on field test results, present recommendations to Joint Service Operational Ration Forum (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 Defense Supply Center Philadelphia (DSCP). Obtain Office of the Surgeon General (OTSG) approval. Perform cuttings for industry/Other Government Agency (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 Meal, Ready to Eat (MRE) (2013/2014 Date of Package (DOP)) to improve quality, acceptability, nutrition, and expand variety.</p> <p>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</p>		0.170 0	0.160 0	0.143

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>	PROJECT 548: <i>MIL SUBSISTENCE SYS</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>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.</p> <p>FY 2013 Plans: Based on field test results, present recommendations to Joint Services (2Q13) for continued product improvement of ration components/packaging/technologies for MRE (2015 DOP). Finalize MRE procurement documents and initiate transition to Defense Logistic Agency (DLA) Troop Support. Obtain Surgeon General approval of revised MRE menus. Execute production testing with industry to ensure consistent ration quality, understand PCR requirements, and resolve vendor/supplier issues. Obtain and assemble selected new items for field test. Conduct field evaluation of new candidate ration components for MRE (2016 DOP) to improve quality, acceptability, nutrition and expand variety.</p>				
<p>Title: Assault/Special Purpose Ration Improvement Project (ASPIP)</p> <p>Description: Continuous product improvement of special purpose rations by the insertion of new technologies in nutrition, processing and packaging.</p> <p>FY 2011 Accomplishments: Post field test results, present recommendations to JSORF (2Q10/2Q11) for continued product improvement of ration components/packaging/ technologies for Meal, 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/Other Government Agency (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).</p> <p>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</p>		0.029 0	0.150 0	0.138

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>	PROJECT 548: <i>MIL SUBSISTENCE SYS</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
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 2013 Plans: Plan and execute field evaluation of new ration components for FSR. Present field test results and recommendations to Joint Services (2Q13) for continued product improvement of ration components/packaging/technologies for FSR. Develop, coordinate and finalize procurement documents to be transitioned to DLA - Troop Support. Obtain Surgeon General approval for the nutritional content of revised menus and components.				
Title: Fielded Group Ration Improvement Project (FGRIP)		0.030	0.163	0.148
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 2011 Accomplishments: Present recommendations to JSORF for Unified Group rations (UGR)-H&S (2012-2013 Date of Package (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. FY 2013 Plans: Based on Warfighter testing, present results/recommendations to Joint Services for UGR-H&S/E (2014/15 DOP). Present UGR-A results/recommendations to the UGR Integrated Product Team for FY14 menus. Update/coordinate menus and obtain Surgeon General approval. Provide assistance to DLA Troop Support for Limited First Article production testing of newly approved UGR-H&S/E items. Complete field testing of UGR-H&S/E (2015/16 DOP) and UGR-A (FY15 menus) to improve quality, nutritional intake and expand variety. Finalize UGR procurements documents for transition to DLA - Troop Support.		Articles: 0	0	
Title: Navy Shipboard Galleys		0.242	0.130	0.141

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>	PROJECT 548: <i>MIL SUBSISTENCE SYS</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p align="right">Articles:</p> <p>Description: Provide continuous Reseach and Development (R&D) for Navy Shipboard Galleys for state-of-the-art Galley designs and equipment technologies; support Naval Supply Systems Command (NAVSUP) foodservice equipment standardization plan; integrate automated technology such as, prognostics, diagnostics, and reliability tracking</p> <p>FY 2011 Accomplishments: Complete all required Technical Data Package (TDP) documents and specification requirements to transition galley food service systems to the Navy for procurement and fielding.</p> <p>FY 2012 Plans: Conduct continuous market investigations of Commercial Off The Shelf (COTS) equipment to support Galley operations.</p> <p>FY 2013 Plans: Identify requirements and metrics for Galley refrigeration assets and procure commercial equipment. Conduct evaluations on commercial refrigeration capability under simulated Navy afloat operations against established requirements metrics.</p>		0	0	
<p>Title: Naval Refrigeration Project</p> <p align="right">Articles:</p> <p>Description: Develop Naval Refrigeration to provide adequate and conveniently accessible chill/freeze storage space aboard ship.</p> <p>FY 2011 Accomplishments: Use information from Navy shipboard refrigeration / ice consumption Front Analysis Report (FY09) to conduct a Continues Product Improvement (CPI) project for Navy shipboard refrigeration and ice making capabilities</p>		0.136 0	-	-
<p>Title: Future Navy Galley / Hatchable Submarine Galley</p> <p align="right">Articles:</p> <p>Description: Provide consolidated galley design and advanced technologies that support the Navy optimized crewing plan for both surface ships and submarines.</p> <p>FY 2011 Accomplishments: 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</p>		0.210 0	-	-

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>		PROJECT 548: <i>MIL SUBSISTENCE SYS</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2011	FY 2012	FY 2013
developed for the equipment and then transitioned to Submarine Force Atlantic for procurement and support of required ship change documentation.					
<p>Title: Integrated Thermal Control into Modern Burner Unit (MBU)</p> <p align="right">Articles:</p> <p>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</p> <p>FY 2011 Accomplishments: Integrate thermostatic control into the MBU control panel, simplify electronic operation and control analogs, increase means between failure time for Modern Burner Unit</p> <p>FY 2012 Plans: Complete testing and evaluation of integrated thermal control and transition to procurement.</p> <p>FY 2013 Plans: Conduct Operational Testing (OT) on prototype. Based on a successful evaluation and concurrence from the customer, CASCOM, a new National Stock Number (NSN) for the integrated MBU will be assigned for procurement through DLA Troop Support</p>			0.164 0	0.175 0	0.139
<p>Title: Product Improvements for Fielded Food Service Equipment and System, all services.</p> <p align="right">Articles:</p> <p>Description: Improvements to secondary food service equipment items based on issues reported from the joint services.</p> <p>FY 2011 Accomplishments: Product Improvements for Fielded Food Service Equipment and System, all services.</p>			0.048 0	-	-
<p>Title: Automated Shipboard Dishwashing System</p> <p align="right">Articles:</p> <p>Description: Provides an automated dishwashing system that alleviates the manual labor involved in dishwashing and reduces manning requirements for future Navy platforms.</p> <p>FY 2012 Plans: Integrate & evaluate Phase III Small Business Innovation Research (SBIR) production model onboard an Aircraft Carrier and transition final system to PEO Carriers for procurement.</p>			-	0.350 0	-
<p>Title: Ration Airdrop Survivability</p> <p align="right">Articles:</p>			-	0.170 0	0.140

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>	PROJECT 548: <i>MIL SUBSISTENCE SYS</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>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.</p> <p>FY 2012 Plans: Redesign components/ menus for retest, reassessment and recommendations for transition of improved, more survivable (via airdrop) rations.</p> <p>FY 2013 Plans: Extensive airdrop testing to determine components, technologies, and packaging with the highest survival rates across all ration systems and components. Perform cost/benefit analysis. Transition updated technical data to Defense Logistics Agency (DLA)-Troop Support (TS)</p>				
<p>Title: Joint Services Refrigerated Container System</p> <p>Description: To develop and field a highly expandable, highly efficient TriCon refrigerated container system that utilizes adaptable advanced technologies (i.e. smart power metering, novel insulation, polychromatic coatings, composites, and alternate energy sources) to enable the safe/proper storage of perishable group rations in forward deployed areas.</p> <p>FY 2013 Plans: Conduct Developmental Testing at Aberdeen Proving Grounds (APG). Conduct User Evaluations with all Services.</p>		-	-	0.339
<p>Title: Basic Expeditionary Airfield Resources (BEAR) Kitchen System Enhancements (BEAR-KSE)</p> <p>Description: The BEAR-KSE will evaluate multifunction appliances, reduce pallet positions, and develop TriCon and BiCon packing plans to meet the Air Forces transportability requirements of 30% by air and 70% by land, sea, and rail.</p> <p>FY 2013 Plans: Complete in-house evaluation of the food service equipment, which will meet Air Force requirements for a lighter, leaner, more rapidly deployable system. Develop 3-D models and conduct pack-out assessments to support transportability requirements of 30% by air and 70% by land, sea, and rail.</p>		-	-	0.230
<p>Title: Assault Kitchen-Enhancement to Include UGR-A Capability</p> <p>Description: Develop a fully integrated refrigeration system for the Assault Kitchen to allow the AK to support UGR-A ration feeding, and menu supplements.</p>		-	0.175 0	0.220
		Articles:		

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>	PROJECT 548: <i>MIL SUBSISTENCE SYS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>FY 2012 Plans: A limited user demonstration of a Level of Effort (LOE) 1 configuration is planned. Results from any testing will be evaluated before addition to the AK Technical Manual. Requirements for the follow-on LOE 2 will be defined. The selection and evaluation of LOE 2 components will be initiated.</p> <p>FY 2013 Plans: Complete all testing and evaluation of the enhanced Assault Kitchen configuration with refrigeration and sanitation components added to provide full Unitized Group Ration A (UGR-A) capability at and below company level. Integrate new components into Assault Kitchen for production and fielding.</p>			
<p>Title: Multi-Functional Secondary Packaging</p> <p>Description: Integrate alternative secondary packaging technologies into current ration packaging systems so as to reduce cost and waste generation, while maintaining required field performance. Production and insertion of new packaging technologies into individual, assault/special purpose and group ration systems. Provide lighter weight, lower cost, recyclable MRE and Unitized Group Ration shipping containers.</p> <p>FY 2013 Plans: Producibility (ration assembly) and transportation studies will be performed for the new containers in comparison to the existing containers. Field testing and user acceptability/ disposability studies will be conducted. Documentation will be prepared for transition of the container specifications into continuous ration improvement projects.</p>	-	-	0.094
Accomplishments/Planned Programs Subtotals	2.043	2.073	2.132

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDT&E 643747.610: <i>Food Adv Dev</i>	4.085	3.903	4.014		4.014		4.657	4.343	4.416	Continuing	Continuing
• OPA M65803: <i>Kitchen, Containerized, Field</i>	16.881									0.000	16.881
• OPA M65802: <i>Sanitation Center, Field Feeding</i>	5.552									0.000	5.552

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>	PROJECT 548: <i>MIL SUBSISTENCE SYS</i>
<u>D. Acquisition Strategy</u> 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.		
<u>E. Performance Metrics</u> 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.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>	PROJECT 548: <i>MIL SUBSISTENCE SYS</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CFP Management	C/FP	RDECOM:Natick, MA	1.795	0.219		0.236		-		0.236	0.000	2.250	Continuing
Subtotal			1.795	0.219		0.236		-		0.236	0.000	2.250	

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various combat feeding equipment, multi fuel and water equipment	C/FP	RDECOM:Natick, MA	3.369	1.029		1.057		-		1.057	0.000	5.455	Continuing
DOD Field Feeding Equipment	C/FP	Various:Various	2.862	0.275		0.280		-		0.280	0.000	3.417	Continuing
Army Field Feeding Equipment Development	C/FP	PM Force Sustainment Systems (FSS):Natick, MA	1.914	0.211		0.214		-		0.214	0.000	2.339	Continuing
Subtotal			8.145	1.515		1.551		-		1.551	0.000	11.211	

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	Various	TECOM/OEC/ATC:Warren, MI	3.036	0.339		0.345		-		0.345	0.000	3.720	Continuing
Subtotal			3.036	0.339		0.345		-		0.345	0.000	3.720	

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			12.976	2.073		2.132		-		2.132	0.000	17.181	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>	PROJECT 548: <i>MIL SUBSISTENCE SYS</i>
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	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Transition Containerized Ice Making System to Procurement																												
Transition CK P3I to RESET																												
Transition Temp Controllers for Field Kitchen Appliances to Procurement																												
Conduct Navy Future Galley Modular and Seabasing Effort																												
Conduct Joint Service Refrigeration Systems Enhancement Effort																												
Conduct DT and OT on Solid Waste Remediation System																												
Transition Solid Waste Remediation System to Procurement																												
Conduct DT/OT on CK Reset kit																												
Conduct Shipboard testing of Automated Shipboard Dishwashing System (ASDS)																												
Transition ASDS to USN for Procurement																												
Conduct field test of UGR-A capability for Assault Kitchen (AK)																												
Transition UGR-A capability for AK to procurement																												
Ration Airdrop survivability airdrop test, packaging redesign, airdrop retest																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>	PROJECT 548: <i>MIL SUBSISTENCE SYS</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Transition Containerized Ice Making System to Procurement	4	2013	4	2013
Transition CK P3I to RESET	4	2013	4	2013
Transition Temp Controllers for Field Kitchen Appliances to Procurement	4	2013	4	2013
Conduct Navy Future Galley Modular and Seabasing Effort	1	2014	4	2015
Conduct Joint Service Refrigeration Systems Enhancement Effort	1	2012	4	2013
Conduct DT and OT on Solid Waste Remediation System	1	2012	4	2013
Transition Solid Waste Remediation System to Procurement	1	2014	1	2014
Conduct DT/OT on CK Reset kit	4	2012	1	2013
Conduct Shipboard testing of Automated Shipboard Dishwashing System (ASDS)	3	2012	4	2012
Transition ASDS to USN for Procurement	1	2013	1	2013
Conduct field test of UGR-A capability for Assault Kitchen (AK)	3	2012	2	2013
Transition UGR-A capability for AK to procurement	4	2013	4	2013
Ration Airdrop survivability airdrop test, packaging redesign, airdrop retest	1	2012	4	2013

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	26.848	29.981	44.787	-	44.787	33.504	35.769	33.602	34.679	Continuing	Continuing
241: <i>NSTD COMBINED ARMS</i>	24.215	24.834	39.614	-	39.614	28.057	29.952	27.255	27.948	Continuing	Continuing
573: <i>Program Executive Office Simulation, Training SPT</i>	2.633	5.147	5.173	-	5.173	5.447	5.817	6.347	6.731	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.

FY 2013 Project 241 funds significant development efforts on the Combat Training Center Instrumentation Systems (CTC-IS), Homestation Instrumentation Training System (HITS), Live, Virtual, Constructive Integrating Architecture (LVC-IA), Integration and Interoperability (I2), Engagement Skills Trainer 2000 (EST 2000), Medical Simulation Training Center (MSTC), Target Modernization, One Tactical Engagement Simulation System (OneTESS), formerly Live Tactical Engagement Simulation System (L-TESS), and further implementation of Live Training Transformation (LT2) through development of the Common Training Instrumentation Architecture (CTIA).

FY 2013 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).

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	27.756	30.021	44.483	-	44.483
Current President's Budget	26.848	29.981	44.787	-	44.787
Total Adjustments	-0.908	-0.040	0.304	-	0.304
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.665	-			
• Adjustments to Budget Years	-0.243	-0.040	0.304	-	0.304

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 241: <i>NSTD COMBINED ARMS</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
241: <i>NSTD COMBINED ARMS</i>	24.215	24.834	39.614	-	39.614	28.057	29.952	27.255	27.948	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.

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).

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.

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, 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 Medical Simulation Training Center (MSTC) program provides a standardized combat medical training capability to sustain and validate Combat Medic's skills and to support 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 System (MTES). The VPS contains multiple training devices, delivering increasing degrees of fidelity and trauma patient responses. MTES 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 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) and support of Decisive Operations (DO). 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

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 241: <i>NSTD COMBINED ARMS</i>
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scenarios. As the only validated and accredited virtual small arms training system, the EST 2000 is a critical element of the U.S. Army's gated marksmanship training strategy.

The Live, Virtual, Constructive Integrating Architecture (LVC-IA) provides a net-centric linkage that collects, retrieves and exchanges data among existing Training Aids, Devices, Simulations, and Simulators (TADSS) and both Joint and Army Mission Command Systems. The LVC-IA defines the "how" information is exchanged among the different LVC domains and the Mission Command Systems. The LVC-IA provides enterprise level tools for exercise control, after action review, and system information assurance. It also provides hardware and software to interface the different Live, Virtual and Constructive communication protocols and provides a correlated common operating picture for the training audience on their organic Mission Command equipment. The integration of the Live, Virtual, and Constructive TADSS with the Mission Command equipment will enable larger, more robust training events better preparing U.S. Soldiers for their missions at an overall reduced cost. The end-state goal is an LVC Integrated Training Environment that can approximate Operational Environments in a cost effective manner to provide a high level of value-added training and mission rehearsal opportunities to Army Commanders and their Soldiers.

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.

One Tactical Engagement Simulation System (OneTESS), formerly Live Tactical Engagement Simulation System (L-TESS) will provide a live, precision, combined arms Force-on-Force Indirect Fire training capability for Brigade and below exercises, at Homestation, Maneuver Combat Training Centers and deployed sites. It will be interoperable with current and future Instrumentable-Multiple Integrated Laser Engagement System (I-MILES) Line of Sight (LOS) laser based systems. OneTESS will provide realistic, real-time casualty effects for Force-on-Force tactical engagement training scenarios and the capability to integrate into training instrumentation systems to provide for high fidelity combined arms combat exercises.

Integration and Interoperability (I2) integrates activities and products of current programs of record across the entire PEO STRI portfolio. I2 baselines persistent interoperability in PEO fielded systems, addresses current issues to facilitate interoperability, institutionalizes a common products/product line management approach and standards/policies across training/test, non-system/system and modeling and simulation domains.

FY 2013 Project 241 funds significant development efforts on the Combat Training Center Instrumentation Systems (CTC-IS), Homestation Instrumentation Training System (HITS), Live, Virtual, Constructive Integrating Architecture (LVC-IA), Integration and Interoperability (I2), Engagement Skills Trainer 2000 (EST 2000), Medical Simulation Training Center (MSTC), Target Modernization, One Tactical Engagement Simulation System (OneTESS), and further implementation of Live Training Transformation (LT2) through development of the Common Training Instrumentation Architecture (CTIA).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Common Training Instrumentation Architecture (CTIA) program.	2.054 0	1.935 0	1.681	-	1.681

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 241: <i>NSTD COMBINED ARMS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Articles:					
<p>Description: Continue EMD phase contract activities for the CTIA program to provide the common architecture capabilities.</p> <p>FY 2011 Accomplishments: 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.</p> <p>FY 2012 Plans: 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.</p> <p>FY 2013 Base Plans: 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.</p>					
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Combat Training Center Instrumentation System (CTC-IS).</p> <p style="text-align: right;">Articles:</p> <p>Description: Continue EMD phase contract activities for the CTC-IS.</p> <p>FY 2011 Accomplishments:</p>	4.348 0	4.809 0	14.023	-	14.023

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 241: <i>NSTD COMBINED ARMS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Combat Training Center Instrumentation System (CTC-IS) funded the continued development of the existing Instrumentation Systems (IS) at the National Training Center (NTC), Joint Readiness Training Center (JRTC) and Joint Multinational Readiness Center (JMRC). Funding was also being used to develop a common Range Communications System (RCS) that can be implemented at all three Combat Training Centers for increased entity tracking coverage and accuracy in order to increase After Action Review fidelity for Brigade Combat Team rotations to better prepare units for deployment.</p> <p>FY 2012 Plans: Combat Training Center Instrumentation System (CTC-IS) funds the continued development of the existing Instrumentation Systems (IS) at the National Training Center (NTC), Joint Readiness Training Center (JRTC) and Joint Multinational Readiness Center (JMRC). Funding is also being used to develop a common Range Communications System (RCS) that can be implemented at all three Combat Training Centers for increased entity tracking coverage and accuracy in order to increase After Action Review fidelity for Brigade Combat Team rotations to better prepare units for deployment.</p> <p>FY 2013 Base Plans: Combat Training Center Instrumentation System (CTC-IS) funds the continued development of the existing Instrumentation Systems (IS) at the National Training Center (NTC), Joint Readiness Training Center (JRTC) and Joint Multinational Readiness Center (JMRC). Funding is also being used to develop a common Range Communications System (RCS) that can be implemented at all three Combat Training Centers for increased entity tracking coverage and accuracy in order to increase After Action Review fidelity for Brigade Combat Team rotations to better prepare units for deployment.</p>					
<p>Title: Government Program Management for the Combat Training Center Instrumentation System (CTC-IS) program.</p> <p align="right">Articles:</p> <p>Description: Government Program Management for the CTC IS program.</p> <p>FY 2011 Accomplishments: Program Management for the Combat Training Center Instrumentation System (CTC-IS) program.</p> <p>FY 2012 Plans: Program Management for the Combat Training Center Instrumentation System (CTC-IS) program.</p> <p>FY 2013 Base Plans:</p>	0.449 0	0.544 0	1.230	-	1.230

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 241: <i>NSTD COMBINED ARMS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Program Management for the Combat Training Center Instrumentation System (CTC-IS) program.					
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Homestation Instrumentation Training System (HITS) program.</p> <p align="right">Articles:</p> <p>Description: EMD phase contract activities for the HITS program.</p> <p>FY 2012 Plans: Develop, integrate, and test new and upgraded software capabilities for the Home Station Instrumentation Training System (HITS). These capabilities are upgrading the operating system to Windows 7 and Microsoft Server 2008 and the associated applications into a new HITS baseline version 3.0. This software upgrade is critical to sustaining a training system based on COTS software, and for maintaining Information Assurance accreditation.</p> <p>FY 2013 Base Plans: Integrate, and test Synthetic Environment Core (SE Core) into the Home Station Instrumentation Training System (HITS) Exercise Control (EXCON) to establish a common terrain database among all components within the Live, Virtual, and Constructive Integrated Training Environment. The HITS Capabilities Production Document (CPD) requires the integration of SECore. Develop, integrate, and test the OneTESS Mortar interface with the HITS EXCON to expand the scope of provided instrumentated training to mortar teams and platoons.</p>	-	0.708 0	0.963	-	0.963
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Medical Simulation Training Center (MSTC).</p> <p align="right">Articles:</p> <p>Description: EMD phase contract activities for the MSTC program.</p> <p>FY 2012 Plans: Development within the Virtual Patient System (VPS) of an effective Tetherless Mannequin (TLM). Develop Virtual Patient training capability and a Medical Training Evaluation System (MTES). MTES will have capability to use Army Knowledge Online to access the training and interoperate with the Virtual Patient System. Develop mobile training capability to support remote site training.</p> <p>FY 2013 Base Plans: Development of the Instructor Support System (ISS - TADSS Application) to incorporate new injuries and part task trainers and to improve existing part task trainers. Development of ISS (Trauma Immersion) for the use</p>	-	1.338 0	0.815	-	0.815

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 241: <i>NSTD COMBINED ARMS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
of immersive, virtual, medical environments. Development of Medical Simulation Training Center (Mobile) for the capability to stand up a mobile training center in remote locations. Enhancement of Virtual Patient System (VPS) Tetherless Mannequin to implement autonomous casualty system technology. Develop multi-lingual, voice recognition, haptic enabled, artificial intelligence (AI) capabilities, and open architecture for other systems and applications to interface with MSTC systems.					
<p>Title: Government Program Management for the Medical Simulation Training Center (MSTC) program.</p> <p align="right">Articles:</p> <p>Description: Government Program Management for the MSTC program.</p> <p>FY 2012 Plans: Program management costs associated with the FY12 Medical Training Evaluation System (MTES) system.</p> <p>FY 2013 Base Plans: Program management costs associated with the FY13 Medical Simulation Training Center (MSTC) development efforts.</p>	-	0.191 0	0.220	-	0.220
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Engagement Skills Trainer 2000 (EST 2000) program.</p> <p align="right">Articles:</p> <p>Description: EMD phase contract activities for the Engagement Skills Trainer 2000 (EST) program.</p> <p>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.</p> <p>FY 2013 Base Plans: EST 2000 prototyping of the AN/PEQ 15-A Laser Aiming Device. The AN/PEQ 15-A offers exceptional functionality in the field for maximum visibility. Operators can easily switch between the visible laser, IR laser, IR illuminator or a combination of both laser and illuminator. Ideal for special operations or covert missions, the DBAL-A2 ensures performance in the toughest conditions and situations. Fielded in Iraq, Afghanistan and by multiple law enforcement agencies, the DBAL-A2 is setting a higher standard for aiming lasers. EST 2000</p>	-	0.358 0	0.993	-	0.993

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 241: <i>NSTD COMBINED ARMS</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
prototyping of the M145 Machine Gun Optic. The M145 Machine Gun Optic (MGO), a variant of the C79 optical scope, is a small arms scope manufactured by ELCAN Optical Technologies with 3.4x28 magnification. It was developed for the U.S. Army and is commonly mounted on M240 and M249 machine guns. The reticle is illuminated by a battery-powered LED with varying intensity settings.						
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Live, Virtual, Constructive Integrating Architecture (LVC-IA) program.</p> <p align="right">Articles:</p> <p>Description: Continue EMD phase contract activities for the LVC-IA program.</p> <p>FY 2011 Accomplishments: Continued to develop system and performed design, development, integration and demonstration of the Live, Virtual, Constructive Integrating Architecture (LVC-IA) Version 1 capability. The LVC Integrating Architecture includes common LVC components.</p> <p>FY 2012 Plans: Complete system development, integration and demonstration of Live, Virtual, Constructive Integrated Architecture (LVC-IA) Version 1 capability.</p> <p>FY 2013 Base Plans: Begin system development and perform design, development, integration and demonstration of the Live, Virtual, Constructive Integrating Architecture (LVC-IA) Version 2 capability.</p>		5.737 0	6.121 0	6.264	-	6.264
<p>Title: Government Program Management for the Live, Virtual, Constructive Integrating Architecture (LVC-IA) program.</p> <p align="right">Articles:</p> <p>Description: Government Program Management for the LVC-IA program.</p> <p>FY 2011 Accomplishments: The Government Program Management Office for LVC-IA supported the design, development and integration of Version 1 of LVC-IA. Funding supported manpower, facilities, training and operations and maintenance.</p> <p>FY 2012 Plans:</p>		1.068 0	1.068 0	1.127	-	1.127

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 241: <i>NSTD COMBINED ARMS</i>			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
The Government Program Management Office for LVC-IA supports the engineering and manufacturing development phase. Funding supports manpower, facilities, training, operations and maintenance and other infrastructure.					
FY 2013 Base Plans: The Government Program Management Office for LVC-IA supports the engineering and manufacturing development phase. Funding supports manpower, facilities, training, operations and maintenance and other infrastructure.					
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 2011 Accomplishments: LVC-IA continued test support on system design and development for SDD Version 1. Supported integration testing on developed components for LVC-IA with other Mission Command Systems and LVC Training Aids. Conducted federation integration event (FIE), functional verification (FV) events for LVC-IA Builds 0 & 1.					
FY 2012 Plans: LVC-IA continue integration testing support on developed components for LVC-IA for inter-operability with TADSS and other Mission 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).					
FY 2013 Base Plans: LVC-IA continues test support on the engineering and manufacturing development phase for Version 2. Will also support integration testing on developed components for LVC-IA with other Mission Command Systems and LVC Training Aids. Conduct federation integration event (FIE) and functional verification (FV) events for LVC-IA.					
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Target Modernization program.					
Articles:					
Description: EMD phase contract activities for the Target Modernization program.					
	0.923 0	0.923 0	0.961	-	0.961
	2.218 0	1.636 0	1.466	-	1.466

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army				DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>		PROJECT 241: <i>NSTD COMBINED ARMS</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
Continues development of OneTESS (formerly Non Line of Sight (NLOS)/L-TESS) 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.					
FY 2013 Base Plans: Begin development of the Increment 2 effort (Fire Control Platforms for Stryker Brigade Combat Teams (SBCT) and/or Heavy Brigade Combat Teams (HBCT).					
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the One Tactical Engagement Simulation System (OneTESS) program.					
Articles:					
Description: Continue EMD phase contract activities for OneTESS.					
FY 2011 Accomplishments: Continued development of One Tactical Engagement Simulation System (One TESS).					
Title: Program Management for the One Tactical Engagement Simulation System (OneTESS) program (formerly NLOS and L-TESS).					
Articles:					
Description: Program Management for the One Tactical Engagement Simulation System (OneTESS) program (formerly NLOS and L-TESS).					
FY 2011 Accomplishments: Program Management for the One Tactical Engagement Simulation System (OneTESS) program (formerly NLOS and L-TESS).					
Title: Government Program Management for the One Tactical Engagement Simulation System (OneTESS) program (formerly NLOS and L-TESS).					
Articles:					
Description: Government Program Management for the One Tactical Engagement Simulation System (OneTESS) program (formerly NLOS and L-TESS).					
FY 2012 Plans:					
	7.035 0	-	-	-	-
	0.110 0	-	-	-	-
	-	1.294 0	0.339	-	0.339

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 241: <i>NSTD COMBINED ARMS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Government Program Management for the One Tactical Engagement Simulation System (OneTESS) program (formerly NLOS and L-TESS). FY 2013 Base Plans: Government Program Management for the One Tactical Engagement Simulation System (OneTESS) program (formerly NLOS and L-TESS).					
Title: Development Activity for the Integration and Interoperability (I2) Program. Description: Development of the I2 Program. FY 2013 Base Plans: Document capabilities (intra and inter domain) and user capability events. Formalize the interoperability documentation and identify limitations/interoperability issues needing resolution, assess opportunities for capability expansion, develop time-phased and cost estimated interoperability execution plan and ensure proposals for enhancement are in sync with the plan. Identify/institutionalize a set of common components, integrate common capabilities, and develop baseline management processes for the common components. Identify target/programs (non-system, system, other) than can benefit from and share the cost of systematic re-use of common components.	-	-	0.978	-	0.978
Title: Government Program Management for the Integration and Interoperability (I2) Program. Description: Government Program Management for the I2 Program. FY 2013 Base Plans: Program management costs associated with the FY13 I2 efforts.	-	-	0.134	-	0.134
Accomplishments/Planned Programs Subtotals	24.215	24.834	39.614	-	39.614

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• Training Devices, Non-System: <i>Training Devices, Non-System</i>	349.014	180.892	125.251	27.250	152.501		243.698	230.845	190.203	Continuing	Continuing
• CTC Support: <i>CTC Support</i>	36.668	46.117	104.649	7.000	111.649		152.951	97.999	99.192	Continuing	Continuing

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 241: <i>NSTD COMBINED ARMS</i>

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 241: <i>NSTD COMBINED ARMS</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS Program Management (formerly NLOS and L-TESS)	Various	PEO STRI:Orlando, FL	8.046	-		-		-		-	0.000	8.046	8.046
OneTESS Program Management (formerly NLOS and L-TESS)	Various	PEO STRI:,Orlando, FL	-	1.294		0.339		-		0.339	Continuing	Continuing	Continuing
CTC-IS Program Management	Various	PEO STRI:Orlando, FL	0.879	0.544		1.230		-		1.230	Continuing	Continuing	Continuing
HITS Program Management	Various	PEO STRI:Orlando, FL	0.400	-		-		-		-	0.000	0.400	0.400
MSTC Program Management	Various	PEO STRI:Orlando, FL	0.191	0.191		0.220		-		0.220	Continuing	Continuing	Continuing
EST 2000 Program Management	Various	PEO STRI:Orlando, FL	0.214	-		-		-		-	0.000	0.214	0.000
LVC-IA Program Management	Various	PEO STRI:Orlando, FL	2.098	1.068		1.127		-		1.127	Continuing	Continuing	Continuing
Integration and Interoperability	Various	PEO STRI:Orlando, FL	-	-		0.134		-		0.134	Continuing	Continuing	Continuing
Target Modernization	Various	PEO STRI:Orlando, FL	0.273	0.179		0.262		-		0.262	Continuing	Continuing	Continuing
ETC-IS Program Management	Various	PEO STRI:Orlando, FL	0.164	-		-		-		-	0.000	0.164	0.000
Subtotal			12.265	3.276		3.312		-		3.312			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS (formerly NLOS and L-TESS)	SS/CPFF	General Dynamics:Fairfax, VA	124.769	-		-		-		-	0.000	124.769	125.023
OneTESS (formerly NLOS and L-TESS)	SS/CPFF	General Dynamics C4 Systems:Orlando, FL 32826	-	3.291		8.158		-		8.158	Continuing	Continuing	Continuing
CTIA	C/CPFF	Lockheed Martin Inc.:Orlando, FL	57.091	-		-		-		-	0.000	57.091	57.091
CTIA	SS/CPFF	TBS:TBS	1.585	-		-		-		-	0.000	1.585	4.886
CTIA	C/CPFF	General Dynamics:Orlando, FL	1.661	1.569		1.288		-		1.288	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 241: <i>NSTD COMBINED ARMS</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CTC-IS	C/FFP	TBS:TBS	8.806	4.809		14.023		-		14.023	Continuing	Continuing	Continuing
HITS	C/FFP	Riptide:Orlando, FL	1.379	-		-		-		-	0.000	1.379	1.379
HITS	C/IDIQ	General Dynamics C4 Systems:Orlando, FL 32826	-	0.708		0.963		-		0.963	Continuing	Continuing	Continuing
MSTC Development	C/FP	Multiple:Various	0.732	1.338		0.815		-		0.815	Continuing	Continuing	Continuing
EST 2000 Development	SS/FP	Cubic Simulation Systems Division:Various	1.528	0.358		-		-		-	Continuing	Continuing	Continuing
EST 3D Modeling	TBD	TBS:TBD	-	-		0.993		-		0.993	0.000	0.993	0.000
LVC-IA Development	C/CPAF	Cole Engineering Services, Inc:Various	11.309	6.121		6.264		-		6.264	Continuing	Continuing	Continuing
Integration and Interoperability	TBD	PEO STRI:Orlando, FL	-	-		0.978		-		0.978	Continuing	Continuing	Continuing
Target Modernization	C/CPFF	General Dynamics:Orlando, FL	2.136	1.582		1.410		-		1.410	Continuing	Continuing	Continuing
Congressional Add Center of Excellence for Military Operations in Urban Terrain and Cultural Trn	C/FP	Multiple:Various	2.996	-		-		-		-	0.000	2.996	2.996
ETC-IS	SS/CPFF	General Dynamics C4 Systems:Orlando, FL 32826	4.836	-		-		-		-	0.000	4.836	0.000
Subtotal			218.828	19.776		34.892		-		34.892			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS (former NLOS and L-TESS)	Various	Various:Orlando, FL	6.596	-		-		-		-	0.000	6.596	6.596
OneTESS (former NLOS and L-TESS)	Various	Various:Various	-	0.262		-		-		-	0.000	0.262	0.262

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 241: <i>NSTD COMBINED ARMS</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CTIA	Various	Various:Various	11.392	0.366		0.393		-		0.393	Continuing	Continuing	Continuing
Target Modernization	Various	Various:Various	0.082	0.054		0.056		-		0.056	Continuing	Continuing	Continuing
Subtotal			18.070	0.682		0.449		-		0.449			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS Development & Test (formerly NLOS and L-TESS)	Various	Multiple:Orlando, FL	4.162	-		-		-		-	0.000	4.162	4.162
OneTESS Test Support (formerly NLOS and L-TESS)	Various	Multiple:Orlando, FL	-	0.177		-		-		-	0.000	0.177	0.177
HITS	Various	Various:Orlando, FL	0.740	-		-		-		-	0.000	0.740	0.740
LVC-IA Test Support	Various	Multiple:Orlando, FL	1.285	0.923		0.961		-		0.961	Continuing	Continuing	Continuing
IEDES	Various	Multiple:Orlando, FL	0.519	-		-		-		-	0.000	0.519	0.000
Subtotal			6.706	1.100		0.961		-		0.961			

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		255.869	24.834		39.614	-		39.614			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 241: <i>NSTD COMBINED ARMS</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
OneTESS (formerly NLOS and L-TESS) MS C																												
HITS Development																												
MSTC MTES Development																												
MSTC System Developments																												
EST 2000 System Enhancement Development																												
EST 2000 Weapon Optic Enhancement Development																												
LVC-IA - Version 2																												
LVC-IA - Version 3																												
I2 Development																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 241: <i>NSTD COMBINED ARMS</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
OneTESS (formerly NLOS and L-TESS) MS C	4	2012	4	2012
HITS Development	3	2012	4	2017
MSTC MTES Development	3	2012	1	2014
MSTC System Developments	2	2013	4	2015
EST 2000 System Enhancement Development	3	2012	3	2014
EST 2000 Weapon Optic Enhancement Development	2	2013	2	2014
LVC-IA - Version 2	1	2013	4	2014
LVC-IA - Version 3	1	2015	4	2016
I2 Development	1	2013	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	PROJECT 573: <i>Program Executive Office Simulation, Training SPT</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
573: <i>Program Executive Office Simulation, Training SPT</i>	2.633	5.147	5.173	-	5.173	5.447	5.817	6.347	6.731	Continuing	Continuing
Quantity of RDT&E Articles											

Note

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, and PM Constructive Simulation) FY 2013 funds labor in support of PEO operations.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Government Program Management to support PEO STRI.	2.633	5.147	5.173	-	5.173
Articles:	0	0			
Description: Government Program Management to support PEO STRI.					
FY 2011 Accomplishments: Government Program Management to support PEO STRI labor for project managers in PM TRADE, PM ITTS, PM CATT, and PM Constructive 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.					
FY 2013 Base Plans: Government Program Management to support PEO STRI labor for project managers in PM TRADE, PM ITTS, PM CATT, and PM Constructive Simulation.					
Accomplishments/Planned Programs Subtotals	2.633	5.147	5.173	-	5.173

C. Other Program Funding Summary (\$ in Millions)

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	573: <i>Program Executive Office Simulation, Training SPT</i>

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.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604716A: <i>TERRAIN INFORMATION - ENG DEV</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	1.594	1.008	-	1.008	-	-	-	-	Continuing	Continuing
579: <i>FIELD ARMY MAP SYS ED</i>	-	1.594	1.008	-	1.008	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

Distributed Common Ground System - Army (DCGS-A) is the Intelligence, Surveillance and Reconnaissance (ISR) System of Systems (SoS) for Joint, Interagency, Allied, Coalition, and National data analysis, sharing and collaboration. The core functions of DCGS-A are: the vertical and horizontal synchronization ISR Processing, Exploitation and Dissemination (PED) efforts and operates in a networked environment at multiple security levels; the control of select Army and joint sensor systems; the fusion of all acquired data and information, and distribution of relevant red (threat), gray (non-aligned), and environmental (weather and terrain) information; and the Warfighter's early warning and targeting capability. DCGS-A provides a single integrated ISR ground processing system composed of common components that are interoperable with sensors, other information sources, all Warfighting Functions, and the Defense Information & Intelligence Enterprise (DI2E). DCGS-A is fielded in Fixed and Mobile configurations emphasizing the use of reach and split based operations by improving accessibility of data in order to reduce forward deployed footprint. As enhanced capabilities are developed and tested, annual software releases are integrated into Army Common/commodity hardware and fielded to units IAW the Army

The Project Manager Distributed Common Ground System ? Army is responsible for developing topographic support systems for the Army. PM DCGS-A, as a component of the Army Program of Record systems through the Intelligence, Reconnaissance, and Surveillance (ISR) Modernization effort provides 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. Geospatial topographic support components of PM DCGS-A consists of the Digital Topographic Support System - Light (DTSS-L), DTSS-Deployable (DTSS-D), Intelligence Fusion System (IFS), DCGS-A Standard Cloud, and the High Volume Map Production (HVMP) equipment. 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.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	1.596	0.997	-	0.997
Current President's Budget	-	1.594	1.008	-	1.008
Total Adjustments	-	-0.002	0.011	-	0.011
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-0.002	0.011	-	0.011

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604716A: <i>TERRAIN INFORMATION - ENG DEV</i>	PROJECT 579: <i>FIELD ARMY MAP SYS ED</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
579: <i>FIELD ARMY MAP SYS ED</i>	-	1.594	1.008	-	1.008	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This Project funds development of the geospatial and terrain capability to support topographic development in support of Army operations. DCGS-A systems use Commercial Off the Shelf (COTS) software. DCGS-A topographic capability variants include: DTSS-Light (DTSS-L) which is shelter mounted on a HMMWV, Intelligence Fusion Server (IFS) which is mounted in hand carried transit cases), and the High Volume Map Production System (HVMP) which reproduces digital maps. Current force DCGS-A 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 DCGS-A 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 DCGS-A ISR Modernization Plan emphasizes the development of a combined, integrated, tactically deployable, fully autonomous terrain analysis and graphics reproduction capability. These capabilities are being provided through virtualized software components delivered across the DCGS-A Enterprise, including HMMWV shelterized (DTSS-L) and transit case (Intelligence Fusion System (IFS)) 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 IFS provides a COTS configuration that is capable of operating all of the terrain analysis software. The IFS consists of transportable workstations and peripherals that can be set up to augment the tactical configurations. PM DCGS-A systems are deployed from Company 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 Specialty) specific training on the operation and use of CTIS developed systems. Products developed as part of the PM DCGS-A 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), and improved graphics reproduction) are being incorporated into all of the DCGS-A software architectures.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: Continue P3I development for DTSS.	-	1.594	1.008
Articles:		0	
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:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604716A: <i>TERRAIN INFORMATION - ENG DEV</i>	PROJECT 579: <i>FIELD ARMY MAP SYS ED</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Continue P3I development for DTSS - Initiate transition of functionality to DCGS-A, continue investigation of COTS upgrades, continue improvement of coalition/joint interoperability. FY 2013 Plans: Continue P3I development for DTSS - Continue transition of functionality to DCGS-A, continue investigation of COTS upgrades, continue improvement of coalition/joint interoperability.			
Accomplishments/Planned Programs Subtotals	-	1.594	1.008

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

The Distributed Common Ground System-Army (DCGS-A) program was created in response to the Department of Defense (DoD) Distributed Common Ground/Surface System (DCGS) Mission Area Initial Capabilities Document (MA ICD) dated 13 Aug 2004, which captured the overarching requirements for an Intelligence, Surveillance, and Reconnaissance (ISR) Family of Systems (FoS) that will contribute to Joint and combined Warfighter needs. That ICD was updated as the Distributed Common Ground/Surface System (DCG/SS) Enterprise ICD, and approved by the Joint Requirements Oversight Council (JROC) 27 Feb 2009. The Army requirements were refined in the DCGS-A Capabilities Development Document (CDD), and approved by the JROC 31 Oct 2005. The DCGS-A program is currently in the Engineering, Manufacturing and Development (EMD) phase and was designated as a Major Automated Information System (MAIS) in OSD (AT&L) Memorandum, 29 Mar 2010.

DCGS-A is following an evolutionary acquisition approach to develop and field system capabilities over time to satisfy the requirements of the DCGS-A Capability Development Document (CDD). Following this approach, the first increment was defined and a Capability Production Document (CPD) was created with full consideration of all of the preceding supporting documents and analysis. As part of its initial staffing, a Cost Benefit Analysis was completed in support of the DCGS-A CPD. This analysis projected a significant cost avoidance/savings over the life cycle by not limiting the hardware configuration to a one size fits all unit types design but rather integrating the DCGS-A SW capabilities into common servers and other IT components fielded at that echelon. This approach was included in the CPD and updated DCGS-A Acquisition Strategy. The CPD is currently in formal staffing at JROC. It is anticipated that the JROC approval will be in 2Q12. The DCGS-A System Engineering Plan (SEP) updated the current development plan and was approved by OASD (R&E) on 5 Dec 2011. The DCGS-A Revised Acquisition Strategy (AS) is awaiting approval by the Defense Acquisition Executive (DAE). It is anticipated the DCGS-A Acquisition Program Baseline will be approved in 2Q12. The DCGS-A program is currently preparing for a milestone C in 2Q12 and an operational test in 2Q-3Q12 and subsequent FDD decision in 4Q12. PM DCGS-A has been designated as the Command Post Computing Environment (CPCE) Lead for PEO IEW&S. As such, DCGS-A is currently aligning its architecture to fit within the Common Operating Environment (COE) as described by the ASA(ALT) COE Implementation Plan. This alignment is in accordance with the G-3/5/7 priority to align all Army networks, procurements, and enhancements under one COE and one vision. Our acquisition strategy supports this initiative as we continue to collapse PORs and reduce footprint following our capability migration path and iterative development approach in support of an "IT Box" requirements prioritization

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	PE 0604716A: <i>TERRAIN INFORMATION - ENG DEV</i>	579: <i>FIELD ARMY MAP SYS ED</i>

process. As we continue the path to DSB 1.0 and beyond, each release will focus on the COE and continually align the Command Post activities with DCGS-A Cloud, Edge Node, and POR migration activities.

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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	139.662	82.932	73.333	-	73.333	23.008	18.058	18.676	20.049	Continuing	Continuing
126: <i>FAAD C2 ED</i>	7.978	9.730	3.664	-	3.664	3.408	3.388	3.505	3.640	Continuing	Continuing
146: <i>AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)</i>	18.783	15.518	15.381	-	15.381	15.667	14.670	15.171	16.409	Continuing	Continuing
149: <i>COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT</i>	112.901	57.684	54.288	-	54.288	3.933	-	-	-	Continuing	Continuing

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-dimensional 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 Mission Command architecture. In addition, FAAD C2 provides interoperability with Joint C2 systems and horizontal integration with PATRIOT, Theater High-Altitude Area Defense (THAAD), 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 (BCT), 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 Army National Guard MAMD battalions operate the FAAD C2 systems in the National Capital Region and other locations.

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 ADAM Cells at the BCTs, 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 AMD Battalions. AMDPCS has three major components: (1) Air and Missile Defense Workstation (AMDWS) is an automated defense and staff planning tool that displays the common tactical and operational 3-dimensional air picture; (2) Air

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>
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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 AMD forces; (3) 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.

Counter-Rocket, Artillery, 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; locally warn the defended area with sufficient time for personnel to take appropriate action; intercept rounds in flight, thus preventing damage to ground forces or facilities; and enhance response to and defeat of enemy forces. The C-RAM capability 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 wireless local area network. The C-RAM SoS capability is currently deployed at multiple sites in two theaters of operation, providing them correlated air and ground pictures and linking them to the Army Mission Command and the Joint Defense Network with various forms of communications to provide situational awareness and exchange of timely

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	34.209	83.010	72.611	-	72.611
Current President's Budget	139.662	82.932	73.333	-	73.333
Total Adjustments	105.453	-0.078	0.722	-	0.722
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	105.453	-0.078	0.722	-	0.722

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 126: <i>FAAD C2 ED</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
126: <i>FAAD C2 ED</i>	7.978	9.730	3.664	-	3.664	3.408	3.388	3.505	3.640	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. FAAD C2 provides the common tactical 3-dimensional 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), 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 Mission Command architecture. In addition, FAAD C2 provides interoperability with Joint C2 systems and horizontal integration with PATRIOT, Theater High-Altitude Area Defense (THAAD), 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 (Army National Guard) MAMD battalions operate the FAAD C2 systems in the National Capital Region and other locations.

Program funding enables rapid response 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 respond with 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 3 to 4 and EPLRS enhancements).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: FAAD C2 Software Development	7.978	9.730	3.664
Articles:	0	0	
Description: Support FAAD C2 software development including unique software enhancements in support of Homeland Defense and security accreditation upgrades. Integrate Improved Sentinel radar. Incorporate IFF modes 1, 2 and 3 (active decode) capabilities.			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 126: <i>FAAD C2 ED</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p><i>FY 2011 Accomplishments:</i> Supported FAAD C2 software development including unique software enhancements in support of Homeland Defense and security accreditation upgrades. Continued integrations of improved Sentinel radar. Continued incorporation of IFF modes 1, 2 and 3 (active decode) capabilities.</p> <p><i>FY 2012 Plans:</i> Support FAAD C2 software development including unique software enhancements in support of Homeland Defense, software solutions for Host-Based Software Security (HBSS) and Common Operating Environment (COE) mandates, and security accreditation updates. Integrate Improved Sentinel. Incorporate IFF modes 1, 2 and 3 (active decode) and correlation of IFF self-reporting systems.</p> <p><i>FY 2013 Plans:</i> Support FAAD C2 software development including unique software enhancements in support of Homeland Defense, software solutions for HBSS and COE mandates, and security accreditation updates. Integrate Improved Sentinel. Incorporate IFF modes 1, 2 and 3 (active decode) and correlation of IFF self-reporting systems.</p>			
Accomplishments/Planned Programs Subtotals	7.978	9.730	3.664

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• AD5050: <i>FAAD C2</i>	32.328	5.030	5.031		5.031		4.817	4.838	5.035	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-IV 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 126: <i>FAAD C2 ED</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	Various:Various	39.790	0.774		0.292		-		0.292	Continuing	Continuing	0.000
Subtotal			39.790	0.774		0.292		-		0.292			0.000

Remarks
Not Applicable

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development and Engineering	Various	Northrop Grumman:Carson, CA	31.226	6.782		2.554		-		2.554	Continuing	Continuing	Continuing
Software Engineering	Various	Various:Various	22.191	0.674		0.254		-		0.254	Continuing	Continuing	Continuing
Subtotal			53.417	7.456		2.808		-		2.808			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Certification/Testing	Various	YPG:Yuma, AZ	10.239	1.175		0.442		-		0.442	Continuing	Continuing	Continuing
Interoperability	Various	CTSF:Ft Hood, TX	2.827	0.325		0.122		-		0.122	Continuing	Continuing	Continuing
Subtotal			13.066	1.500		0.564		-		0.564			

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			106.273	9.730		3.664		-		3.664			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 126: <i>FAAD C2 ED</i>
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	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
V5.4B Full Materiel Release (FMR)					■																							
V5.5B Full Materiel Release												■																
V5.5D Full Materiel Release (FMR)																								■				
V5.5A Full Materiel Release								■																				
V5.5C Full Materiel Release (FMR)																■												
Phase 2.2 Offline Test (OT)																												
NCR-IADS FAAD 5.5B & RES DT (Development Test)								■																				
NCR-IADS FAAD 5.5B and RES OT (Online Test and Cutover)												■																
1-188 ADA N. Dakota National Guard - Last Unit Equipped (LUE)																												
Replacement Shelters for 3 Air and Missile Defense Battalions (AMD BNs)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 126: <i>FAAD C2 ED</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
V5.4B Full Materiel Release (FMR)	1	2012	1	2012
V5.5B Full Materiel Release	2	2013	2	2013
V5.5D Full Materiel Release (FMR)	4	2016	4	2016
V5.5A Full Materiel Release	3	2012	3	2012
V5.5C Full Materiel Release (FMR)	2	2014	2	2014
Phase 2.2 Offline Test (OT)	2	2011	2	2011
NCR-IADS FAAD 5.5B & RES DT (Development Test)	3	2012	3	2012
NCR-IADS FAAD 5.5B and RES OT (Online Test and Cutover)	1	2013	1	2013
1-188 ADA N. Dakota National Guard - Last Unit Equipped (LUE)	2	2011	2	2011
Replacement Shelters for 3 Air and Missile Defense Battalions (AMD BNs)	3	2012	4	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>				PROJECT 146: <i>AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
146: <i>AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)</i>	18.783	15.518	15.381	-	15.381	15.667	14.670	15.171	16.409	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-dimensional air picture. AMDWS is the air picture provider for the Army, producing an integrated and correlated air picture at all tactical levels and locations. AMDWS is also an integral component of Integrated Base Defense. 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.

FY13 funds the development, software engineering, testing and certification of the AMDWS, ADSI, and sheltered subsystem software as described below.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: AMDWS Software Development	13.261	10.971	10.870
Articles:	0	0	
Description: Continue AMDWS development and support of LANDWARNET/Mission Command Framework. Complete AMDWS software engineering and development consistent with Capability Set 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>		PROJECT 146: <i>AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>(JTAMD), and support the evolving development of the Force Operations portion of the Integrated Air and Missile Defense (IAMD) System of Systems.</p> <p>FY 2011 Accomplishments: Continued AMDWS development and support of LANDWARNET/Mission Command Framework. Continued 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. Completed AMDWS software development and rehost onto emerging light/laptop common hardware systems. Initiated development of software solutions for Host Based Software Security (HBSS) and Common Operating Environmental (COE) mandates. Continued integration of the PATRIOT Air Defense system PTP and the TBMCS. Initiated development of the other AMD Platforms such as JLENS and Joint Theater Battle Operations Net-Centric Environment interfaces. Continued supporting the Air Force JTAMD, and supported the evolving development of the Force Operations portion of the IAMD System of Systems.</p> <p>FY 2012 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. Develop software solutions for HBSS and COE mandates. Support interconnectivity with PATRIOT PDB-7 production. Continue integration with C2BMC (replacing JDP), and TBMCS. Continuing support of JLENS and JTAMD, as well as the ever evolving development work with Integrated Air Missile Defense. Supporting Tactical Mission 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.</p> <p>FY 2013 Plans: Complete AMDWS software engineering consistent with Capability Set 15-16 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 TBMCS. Continuing support of JLENS and JTAMD, as well as the ever evolving development work with Integrated Air Missile Defense. Supporting Tactical Mission Command system collapse effort with the design of thick and thin clients for hosting Air Missile Defense planning and Engagement information on the CPOF client.</p>				
Title: ADSI Software Engineering and Development		1.690	1.397	1.384
		Articles: 0	0	
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				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 146: <i>AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
capability, Tactical Digital Information Link (TADIL) A/B/C, Joint Range Extension Application Protocols (JREAP), MIDS RF-J, Sat J/A, Windows XP Pro and LINUX Realtime.				
<p>FY 2011 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, TADIL A/B/C, JREAP, MIDS RF-J, Sat J/A, Windows XP Pro and LINUX Realtime.</p> <p>FY 2012 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, TADIL A/B/C, JREAP, MIDS RF-J, Sat J/A, Windows XP Pro and LINUX Realtime.</p> <p>FY 2013 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, TADIL A/B/C, JREAP, MIDS RF-J, Sat J/A, Windows XP Pro and LINUX Realtime.</p>				
Title: Engineering, Development, Test and Evaluation		2.611	2.141	2.123
		Articles: 0	0	
<p>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.</p> <p>FY 2011 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.</p> <p>FY 2012 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. Develop system modifications to incorporate new IFF capabilities, and correlating and self-reporting aircraft systems.</p> <p>FY 2013 Plans:</p>				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 146: <i>AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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. Develop system modifications to incorporate new IFF capabilities, and correlating and self-reporting aircraft systems.			
<p>Title: Software System Certification Testing, Accreditation, and Approval of Authority-to-Operate (ATO)</p> <p align="right">Articles:</p> <p>Description: Continue software system certification testing, accreditation, and approval of ATO for the various software systems; continue Army and Joint integration and interoperability assessments.</p> <p>FY 2011 Accomplishments: Continue software system certification testing, accreditation, and approval of ATO for the various software systems; continue Army and Joint integration and interoperability assessments.</p> <p>FY 2012 Plans: Continue software system certification testing, accreditation, and approval of ATO for the various software systems; continue Army and Joint integration and interoperability assessments.</p> <p>FY 2013 Plans: Continue software system certification testing, accreditation, and approval of ATO for the various software systems; continue Army and Joint integration and interoperability assessments.</p>	1.221 0	1.009 0	1.004
Accomplishments/Planned Programs Subtotals	18.783	15.518	15.381

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• AD5070: AMDPCS	56.718	90.710	64.144		64.144		29.816	24.799	36.282	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.

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.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 146: <i>AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)</i>

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 146: <i>AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	Various:Various	24.876	2.096		2.081		-		2.081	Continuing	Continuing	0.000
Subtotal			24.876	2.096		2.081		-		2.081			0.000

Remarks
Not Applicable

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AMDWS Software Development and Engineering	Various	Northrop Grumman:Huntsville AL	96.247	9.392		9.347		-		9.347	Continuing	Continuing	Continuing
ADSI Software Development and Engineering	Various	Ultra Electronics:Austin, TX	6.868	0.222		0.219		-		0.219	Continuing	Continuing	Continuing
Developmental Engineering	Various	Various:Various	38.328	3.690		3.615		-		3.615	Continuing	Continuing	Continuing
Subtotal			141.443	13.304		13.181		-		13.181			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Certification/Testing	Various	JITC:Ft Huachuca, AZ	0.964	0.071		0.071		-		0.071	Continuing	Continuing	Continuing
Interoperability Assessment	Various	CTSF:Ft Hood, TX	1.318	0.047		0.048		-		0.048	Continuing	Continuing	Continuing
Subtotal			2.282	0.118		0.119		-		0.119			

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			168.601	15.518		15.381		-		15.381			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 146: <i>AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)</i>
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	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
6.4 Full Materiel Release (FMR)				■																								
6.5 FMR							■																					
6.6 FMR												■																
7.0 FMR																												
AMDWS Block IV Contract																												
15-16																												
17-18																												
C-RAM & ADAM SoS SWI&R Record Test				■																								
C-RAM Fall Demo								■																				
C-RAM Demo								■																				
Network Integration Exercises (NIE) and other Joint Exercises				■																								
NIE 12.1				■																								
NIE 12.2								■																				

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 146: <i>AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
6.4 Full Materiel Release (FMR)	4	2011	4	2011
6.5 FMR	2	2012	2	2012
6.6 FMR	4	2013	4	2013
7.0 FMR	4	2015	4	2015
AMDWS Block IV Contract	2	2011	2	2016
15-16	1	2013	4	2014
17-18	1	2015	4	2016
C-RAM & ADAM SoS SWI&R Record Test	3	2011	3	2011
C-RAM Fall Demo	1	2012	1	2012
C-RAM Demo	2	2012	2	2012
Network Integration Exercises (NIE) and other Joint Exercises	3	2011	4	2011
NIE 12.1	4	2011	1	2012
NIE 12.2	2	2012	3	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 149: <i>COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
149: <i>COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT</i>	112.901	57.684	54.288	-	54.288	3.933	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Counter-Rocket, Artillery, 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; locally warn the defended area with sufficient time for personnel to take appropriate action; intercept rounds in flight, thus preventing damage to ground forces or facilities; and enhance response to and defeat of enemy forces. The C-RAM capability 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 wireless local area network. The C-RAM SoS capability is currently deployed at multiple sites in two theaters of operation, providing them correlated air and ground pictures and linking them to the Army Mission Command and the Joint Defense Network 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 deployment 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 combat forces. The C-RAM SoS approach was initially validated by a Proof of Principle demonstration in December 2004 and has undergone more than 25 Army Test and Evaluation Command (ATEC)-supported operational assessments to incorporate multiple improvements in response to changes in threat tactics and lessons learned. The C-RAM Sense and Warn (S&W) capability is currently deployed to Forward Operating Bases (FOBs) in support of Department of State/Office of Security Cooperation-Iraq (DoS/OSC-I) operations, and PD C-RAM is currently deploying C-RAM S&W capability to FOBs in Afghanistan in support of Operation Enduring Freedom (OEF). 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. Continuing C-RAM SoS improvement efforts, to include C2 software upgrades, as well as deploying enhanced detection/intercept capability against low Quadrant Elevation (QE) rocket and Improvised Rocket Assisted Munitions (IRAM), are required to meet emerging theater requirements. Support of the existing C-RAM SoS capability deployed in theater has been through the Overseas Contingency Operations (OCO) process.

Near-term directed enhancements to the C-RAM SoS capability include use of Army tactical communications rather than commercial systems; integration of Warn functionality into the C2 workstation to reduce complexity and footprint; integration with Unmanned Aerial Systems (UAS) Universal Ground Control Station (UGCS) for enhanced situational awareness, combat identification, and response options; and dynamic clearance of unplanned fires in conjunction with the Advanced Field Artillery Tactical Data System (AFATDS) for rapid and enhanced response. Additionally, the C-RAM Program Directorate has been directed to make enhancements to Intercept (e.g., improved tactical mobility, upgun for increased lethality/range, and/or alternative options to the current LPWS Intercept capability).

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 149: <i>COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT</i>		
<p>Indirect Fire Protection Capability (IFPC) Increment 1, will be the Army's acquisition program to provide the existing C-RAM Warn capability to all Maneuver Brigade Combat Teams (BCT). IFPC INC 1 is a horizontal technology insertion, using current C-RAM Warning equipment, to provide early, localized warning. It will employ the Air Defense Airspace Management (ADAM) Cell already resident in the BCT Headquarters as the C2 element, use the Firefinders and LCMRs already in the Target Acquisition Platoon of the Fires Battalion as the Sense element, and add Warning devices, controller, and dedicated communications devices between the existing radars and the ADAM Cell. The Capability Production Document (CPD) was approved in August 2010; The CPD was approved in August 2010. An operational assessment will be conducted to support a Milestone C decision.</p>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>Title: C-RAM C2 Software Development and Enhancements</p> <p>Description: Software development effort to incorporate emerging requirements as a result of changing threat.</p> <p>FY 2011 Accomplishments: C-RAM C2 software development contract efforts.</p> <p>FY 2012 Plans: C-RAM C2 software development contract efforts.</p> <p>FY 2013 Plans: C-RAM C2 software development contract efforts.</p>		1.097 0	12.839 0	10.619
<p>Title: Test RAM Warn Capability</p> <p>Description: Funds RAM Warn participation in Developmental/Operational test events.</p> <p>FY 2011 Accomplishments: Funds RAM Warn participation in Developmental/Operational test events.</p>		5.384 0	-	-
<p>Title: C2 & Warn Improvements - Use of Tactical Radio and Integration of Warn into C2 Workstation</p> <p>Description: C2 & Warn Improvements - Use of Tactical Radio and Integration of Warn into C2 Workstation</p> <p>FY 2012 Plans: C2 & Warn Improvements - Use of Tactical Radio and Integration of Warn into C2 Workstation</p> <p>FY 2013 Plans:</p>		-	12.478 0	10.768

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>		PROJECT 149: <i>COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
C2 & Warn Improvements - Use of Tactical Radio and Integration of Warn into C2 Workstation				
<p>Title: Interceptor Enhancements</p> <p align="right">Articles:</p> <p>Description: Provide directed enhancements to Intercept capability (e.g., improved tactical mobility, upgun for increased lethality/range, and/or alternative options to the current LPWS capability).</p> <p>FY 2011 Accomplishments: Provide directed enhancements to Intercept capability (e.g., improved tactical mobility, upgun for increased lethality/range, and/or alternative options to the current LPWS capability).</p> <p>FY 2012 Plans: Provide directed enhancements to Intercept capability (e.g., improved tactical mobility, upgun for increased lethality/range, and/or alternative options to the current LPWS capability).</p> <p>FY 2013 Plans: Provide directed enhancements to Intercept capability (e.g., improved tactical mobility, upgun for increased lethality/range, and/or alternative options to the current LPWS capability).</p>		106.420 0	23.454 0	24.925
<p>Title: UAS Universal-Station Integration</p> <p align="right">Articles:</p> <p>Description: UAS Universal-Station Integration</p> <p>FY 2012 Plans: UAS Universal-Station Integration</p> <p>FY 2013 Plans: UAS Universal-Station Integration</p>		-	4.691 0	3.988
<p>Title: Dynamic Clearance of Fires</p> <p align="right">Articles:</p> <p>Description: Dynamic Clearance of Fires</p> <p>FY 2012 Plans: Dynamic Clearance of Fires</p> <p>FY 2013 Plans:</p>		-	4.222 0	3.988

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 149: <i>COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Dynamic Clearance of Fires			
Accomplishments/Planned Programs Subtotals	112.901	57.684	54.288

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• BZ0526: <i>COUNTER-ROCKETS, ARTILLERY& MORTAR (C-RAM)</i>	268.267	15.774								0.000	284.041
• H30503: <i>IFPC INCREMENT 1 - WARN</i>			29.881		29.881		41.552	43.655	29.451	0.000	178.468

D. Acquisition Strategy

The C-RAM program is following an evolutionary acquisition strategy for rapid fielding of mature technology to the user. The objective of the strategy is to balance needs, available technology, and resources to quickly provide a robust capability to engage rockets, artillery, and mortars. The Capability Production Document (CPD) for the Land-based Phalanx Weapon System (LPWS) is currently in world-wide staffing. Upon approval of the CPD, LPWS will transition to a Program of Record (POR) for sustainment and fielding to army units, pending force structure approval.

In parallel, Intercept enhancement alternatives are being evaluated to upgrade the current LPWS capability to provide improved tactical mobility and increased range/ lethality against indirect fire threats. The enhanced Intercept capability will be supported as part of the LPWS POR above or established as a separate POR as appropriate.

Indirect Fire Protection Capability (IFPC) Increment 1 will provide an early, localized warning capability to the maneuver BCTs. The CPD was approved in August 2010 and the Acquisition Decision Memorandum (ADM) establishing IFPC INC 1 as a POR was approved in January 2012. The program office will continue procurement of currently fielded IFPC INC 1 systems and transition all systems to the POR.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 149: <i>COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	Various:Various	18.059	1.386		1.427		-		1.427	Continuing	Continuing	Continuing
Subtotal			18.059	1.386		1.427		-		1.427			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Northrop Grumman	SS/CPIF	C-RAM C2 Software Development and Enhancements:Carson, CA	34.570	28.577		21.650		-		21.650	Continuing	Continuing	Continuing
Contractor TBD	C/Various	Improved Interceptor:TBD	77.675	24.330		23.743		-		23.743	0.000	125.748	0.000
Subtotal			112.245	52.907		45.393		-		45.393			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OGA	Various	TBD:TBD	15.170	3.391		7.468		-		7.468	Continuing	Continuing	Continuing
Subtotal			15.170	3.391		7.468		-		7.468			

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			145.474	57.684		54.288		-		54.288			

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	PROJECT 149: <i>COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
C2 & Warn Improvements	1	2012	4	2015
Interceptor Enhancements	1	2012	4	2016
Dynamic Clearance of Fires	1	2012	4	2014
UAS Universal Ground Control Station	1	2012	4	2016
Demonstrations	2	2011	3	2011
Developmental Testing (DT)	3	2011	3	2011
NIE Demonstrations	3	2011	4	2011
DT	1	2012	1	2012
Operational Testing (OT)	3	2012	3	2012
RAM Warn Operational Assessment (OA)	1	2013	1	2013
RAM Warn Milestone C	4	2012	4	2012
RAM Warn Production and Fielding	4	2012	3	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	29.287	28.274	28.937	-	28.937	23.106	24.847	23.871	24.351	Continuing	Continuing
361: <i>INTELLIGENCE SIMULATION SYSTEMS (MIP)</i>	7.980	8.314	8.171	-	8.171	7.439	7.024	8.127	8.263	Continuing	Continuing
362: <i>Jnt Land Component Constructive Trng Capability</i>	21.307	19.960	20.766	-	20.766	15.667	17.823	15.744	16.088	Continuing	Continuing

Note

None Required.

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 Mission Command Systems, 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.

FY 2013 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).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>
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B. Program Change Summary (\$ in Millions)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	30.291	28.305	28.742	-	28.742
Current President's Budget	29.287	28.274	28.937	-	28.937
Total Adjustments	-1.004	-0.031	0.195	-	0.195
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.765	-			
• Adjustments to Budget Years	-0.239	-0.031	0.195	-	0.195

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>	PROJECT 361: <i>INTELLIGENCE SIMULATION SYSTEMS (MIP)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
361: <i>INTELLIGENCE SIMULATION SYSTEMS (MIP)</i>	7.980	8.314	8.171	-	8.171	7.439	7.024	8.127	8.263	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Intelligence & Electronic Warfare Tactical Proficiency Trainer (IEWTPT), a Non-System Training Device (NTSD), supports training intelligence soldiers by stimulating Military Intelligence (MI) organic or surrogate equipment. It enables system operators and analysts to utilize their Intelligence, Surveillance, and Reconnaissance (ISR) assets to provide the commander with required, executable, intelligence information. IEWTPT provides a realistic Intelligence target environment for Multi-Intelligence disciplines (Signals Intelligence (SIGINT), Imagery Intelligence (IMINT), HUMINT, Counterintelligence (CI), Geospatial Intelligence (GEOINT)) and must stimulate multiple systems 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). IEWTPT provides static and dynamic training events (interactive environment for individual, collective, and Live, Virtual, and Constructive integrated mission rehearsals/exercises) in an integrated, playback, and stand alone mode. IEWTPT is composed of four components: Constructive Simulation, Technical Control Cell (TCC), Target Signature Arrays (TSA)/Simulation Interface, and the Human Intelligence (HUMINT) Control Cell (HCC). The IEWTPT TCC provides critical Intel enhancements to a constructive simulation to stimulate go-to-war or surrogate ISR systems where system operators/analysts are able to exploit exercise intelligence data during training, just as they would in a "real world" operation.

FY 2013 funding continues engineering development of new capabilities and improvements of existing capabilities leading up to an annual version release in the 4th Quarter of the year. Funding also provides improvements in HUMINT capabilities, scenario development, and SIGINT system integration and concurrency with the Target Signature Arrays/Simulation Interface to synchronize development to establish and/or maintain concurrency with tactical fielded Intelligence, Surveillance, and Reconnaissance (ISR) systems.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: IEWTPT development, integration and support.	6.953	7.263	7.034
Articles:	0	0	
Description: Continue IEWTPT development, integration and support to the user community.			
FY 2011 Accomplishments: Developed the Near-Time Notional Gateway (NTNG) SIGINT training capability into the TCC; developed intelligence capabilities and Pattern of Life model to capture persons of interest (POI) lifestyle patterns that may be collected and analyzed by intelligence personnel; supported PROPHET simulation interface development.			
FY 2012 Plans:			

PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*
Army

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012								
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>		PROJECT 361: <i>INTELLIGENCE SIMULATION SYSTEMS (MIP)</i>						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										
Supports Lifestyle Pattern of Life modeling; Target Signature Array (TSA) development; evolves HUMINT, and supports Counter Intelligence capabilities.										
FY 2013 Plans: Supports simulation interface design for both HCC and TCC; evolves Village Pattern of Live Modeling (VPOLM) design and testing; develops TCC training vignettes and evolves TCC interfaces and SIGINT capabilities to incorporate new sensor technology and develops new target packages for the Full Spectrum Operations (FSO) environment; develop/design, test, and integrate of Cyber Warfare Capabilities; continues to refine existing SIGINT (Near-Time Notional Gateway) TS/SCI training capabilities; develops and updates existing HUMINT scenarios and evolve Counter Intel capabilities for site exploitation. Evolves AVATAR technology to increase fidelity and human realism; completes web-based HCC integration to maximize training availability; continues constructive simulation, testing and interoperability. Start Live, Virtual, Constructive, Integrated Training Environment (LVC-ITE) task analysis. Evolve GEOINT stimulation tools with advancing capabilities; refine and advance Full Motion Video and Infra Red capabilities. Continues development of tool suite components (SIGACT Generator, SIGINT Exercise Control and Intel Low Overhead Driver (iLOD)); implements Better Buying Power initiatives by reductions in baseline hardware footprint.										
Title: Government Program Management for the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT).										
Description: Government Program Management for the IEWTPT program.										
FY 2011 Accomplishments: 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 and engineering development. Evolved and refined Signal Intelligence and Communications Intelligence capabilities. Implemented recurring Information Assurance directives.										
FY 2012 Plans: 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 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.										
FY 2013 Plans: Provides program oversight and lifecycle management planning, and Combat Developer Support. It also provides management, configuration control and oversight of interfaces with complementary programs, coordination of integration activities with external										
				<table border="1"> <tr> <td>FY 2011</td> <td>FY 2012</td> <td>FY 2013</td> </tr> <tr> <td align="center">1.027 0</td> <td align="center">1.051 0</td> <td align="center">1.137</td> </tr> </table>	FY 2011	FY 2012	FY 2013	1.027 0	1.051 0	1.137
FY 2011	FY 2012	FY 2013								
1.027 0	1.051 0	1.137								

PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*
Army

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>	PROJECT 361: <i>INTELLIGENCE SIMULATION SYSTEMS (MIP)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
programs and continuous participation in planning, integration, and testing of IEWTPT components in a federation (family of systems) environment. It also covers market surveys, technology insertion studies and reviews of deliverables needed to be ready for openly recompeting the program. It also includes the analysis and implementation of recurring Information Assurance (IA) directives.			
Accomplishments/Planned Programs Subtotals	7.980	8.314	8.171

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Appropriation NA0102: <i>Appropriation NA0102; Training Devices, Nonsystem, Intelligence</i>	7.201	3.649					10.792	11.833	7.368	Continuing	Continuing
• TBWG, OMA 121: <i>TBWG, OMA 121</i>			0.238		0.238		0.275	0.330	0.385	Continuing	Continuing

D. Acquisition Strategy

Sole Source (General Dynamics 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>	PROJECT 361: <i>INTELLIGENCE SIMULATION SYSTEMS (MIP)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	Various	PEO STRI:Orlando, FL	4.772	1.051		1.137		-		1.137	Continuing	Continuing	Continuing
Subtotal			4.772	1.051		1.137		-		1.137			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HCC Technology	SS/CPFF	General Dynamics C4 Systems:Orlando, FL	3.427	1.740		1.530		-		1.530	Continuing	Continuing	Continuing
Eng & Manufacturing Dev.	SS/CPFF	General Dynamics C4 Systems:Orlando, FL	41.878	5.523		5.504		-		5.504	Continuing	Continuing	Continuing
Subtotal			45.305	7.263		7.034		-		7.034			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Technical Support	SS/CPFF	General Dynamics C4 Systems:Orlando, FL	2.743	-		-		-		-	0.000	2.743	2.743
Subtotal			2.743	-		-		-		-	0.000	2.743	2.743

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TEMP Support	Various	Multiple:Orlando, FL	0.319	-		-		-		-	0.000	0.319	0.319
Test Engineering Support	Various	Multiple:Orlando, FL	1.313	-		-		-		-	0.000	1.313	1.313
Subtotal			1.632	-		-		-		-	0.000	1.632	1.632

PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*
Army

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>				PROJECT 361: <i>INTELLIGENCE SIMULATION SYSTEMS (MIP)</i>				
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	54.452	8.314		8.171		-		8.171			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>	PROJECT 361: <i>INTELLIGENCE SIMULATION SYSTEMS (MIP)</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Version 4.0 Security Accred.			■																									
Version 4.0 Release				■																								
Version 5.0 Security Accred.							■																					
Version 5.0 Release								■																				
Version 6.0 Security Accred.											■																	
Version 6.0 Release												■																
Version 7.0 Security Accred.															■													
Version 7.0 Release																■												
Version 8.0 Security Accred.																			■									
Version 8.0 Release																				■								
Version 9.0 Security Accred.																							■					
Version 9.0 Release																								■				
Version 10.0 Security Accred.																											■	
Version 10.0 Release																												■

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>	PROJECT 361: <i>INTELLIGENCE SIMULATION SYSTEMS (MIP)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Version 4.0 Security Accred.	3	2011	3	2011
Version 4.0 Release	4	2011	4	2011
Version 5.0 Security Accred.	3	2012	3	2012
Version 5.0 Release	4	2012	4	2012
Version 6.0 Security Accred.	3	2013	3	2013
Version 6.0 Release	4	2013	4	2013
Version 7.0 Security Accred.	3	2014	3	2014
Version 7.0 Release	4	2014	4	2014
Version 8.0 Security Accred.	3	2015	3	2015
Version 8.0 Release	4	2015	4	2015
Version 9.0 Security Accred.	3	2016	3	2016
Version 9.0 Release	4	2016	4	2016
Version 10.0 Security Accred.	3	2017	3	2017
Version 10.0 Release	4	2017	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>	PROJECT 362: <i>Jnt Land Component Constructive Trng Capability</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
362: <i>Jnt Land Component Constructive Trng Capability</i>	21.307	19.960	20.766	-	20.766	15.667	17.823	15.744	16.088	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 Mission Command equipment, and improve exercise generation and after-action reporting.

FY 2013 funding supports the development, test and integration, validation, and verification of Multi-Resolution Federation-Warfighter's Simulation (MRF-W) and migration to a Unified Constructive Architecture.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for JLCCTC Software Models.</p> <p align="right">Articles:</p> <p>Description: Continue EMD phase contract activities for JLCCTC Software Models.</p> <p>FY 2011 Accomplishments: Verified and validated JLCCTC software models.</p> <p>FY 2012 Plans: Verify and validate JLCCTC software models.</p> <p>FY 2013 Plans: Verify and validate JLCCTC software models</p>	1.872 0	1.626 0	1.889
<p>Title: Engineering and Manufacturing Development (EMD) phase contract for the Integration of JLCCTC.</p> <p align="right">Articles:</p> <p>Description: Continue EMD phase contract activities for the Integration of JLCCTC.</p> <p>FY 2011 Accomplishments:</p>	12.005 0	11.924 0	11.383

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>	PROJECT 362: <i>Jnt Land Component Constructive Trng Capability</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Continued integration of JLCCTC components for interoperability (including OneSAF). FY 2012 Plans: Continued integration of JLCCTC components for interoperability (including OneSAF). FY 2013 Plans: Continued integration of JLCCTC components for interoperability (including OneSAF).				
Title: Engineering and Manufacturing Development (EMD) phase contract activity for User Interface Enhancements. Description: Continue EMD phase contract activities for User Interface Enhancements. FY 2011 Accomplishments: Developed and integrated user interface enhancements for Army training applications. FY 2012 Plans: Develop and integrate user interface enhancements for Army training applications. FY 2013 Plans: Develop and integrate user interface enhancements for Army training applications.		4.650 Articles: 0	4.104 0	4.690
Title: Government System Test and Evaluation. Description: Government System Test and Evaluation for the Joint Land Component Constructive Training Capability (JLCCTC). FY 2011 Accomplishments: Evaluated system performance and conducted system test events. FY 2012 Plans: Evaluate system performance and conduct system test events. FY 2013 Plans: Develop and evaluate system performance and conduct system test events.		2.780 Articles: 0	2.306 0	2.804
Accomplishments/Planned Programs Subtotals		21.307	19.960	20.766

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION</i> <i>SYSTEMS DEVELOPMENT</i>	PROJECT 362: <i>Jnt Land Component Constructive Trng</i> <i>Capability</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• NSTD Command & Control: <i>OPA, NA0103</i>	21.324	17.696	11.788		11.788		22.676	23.035	15.739	Continuing	Continuing
• TBWG: <i>OMA, 121</i>	3.822	1.351	4.921		4.921		4.115	4.256	2.650	Continuing	Continuing

D. Acquisition Strategy

Current JLCCTC contract was extended for six months (with another six month option, if needed) until the new JLCCTC contract is awarded. New effort will be a full and open competition. Expected award date is scheduled for 4Q FY 12.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>	PROJECT 362: <i>Jnt Land Component Constructive Trng Capability</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PEO STRI:Orlando, FL	37.059	3.616		5.530		-		5.530	Continuing	Continuing	Continuing
Cost Analysis Support	Various	Northrup Grumman-TASC:McLean, VA	0.414	-		-		-		-	0.000	0.414	0.414
Subtotal			37.473	3.616		5.530		-		5.530			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integration of JLCCTC	SS/FFP	Various:Various	48.606	5.410		1.416		-		1.416	Continuing	Continuing	Continuing
MRF-W Development of Army Training System	C/CPIF	TBS:TBS	-	-		8.366		-		8.366	Continuing	Continuing	Continuing
Development of logistics model	Various	Tapestry:San Diego, CA	19.016	1.599		-		-		-	0.000	20.615	20.615
WARSIM Development of Army Training System	SS/CPFF	Lockheed Martin Info Systems:Orlando, FL	114.305	8.265		-		-		-	0.000	122.570	122.570
Subtotal			181.927	15.274		9.782		-		9.782			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Tech Spt	Various	Various:Various	8.000	0.570		0.207		-		0.207	Continuing	Continuing	Continuing
Subtotal			8.000	0.570		0.207		-		0.207			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Evaluation and Test	Various	Various:Various	13.033	0.092		3.278		-		3.278	Continuing	Continuing	Continuing

PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*
Army

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>	PROJECT 362: <i>Jnt Land Component Constructive Trng Capability</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
JLCCTC V6		■																										
JLCCTC V6.0.1			■	■																								
JLCCTC V6.1						■																						
JLCCTC V6.2 / V6.3											■																	
JLCCTC V7															■													
JLCCTC V8																											■	

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>	PROJECT 362: <i>Jnt Land Component Constructive Trng Capability</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JLCCTC V6	2	2011	2	2011
JLCCTC V6.0.1	3	2011	4	2011
JLCCTC V6.1	2	2012	2	2012
JLCCTC V6.2 / V6.3	3	2013	3	2013
JLCCTC V7	1	2015	1	2015
JLCCTC V8	3	2016	3	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	13.553	14.361	10.815	-	10.815	11.983	11.911	12.367	12.575	Continuing	Continuing
L59: <i>DIAGNOST/EXPERT SYS DE</i>	10.243	10.869	8.237	-	8.237	8.387	8.308	8.639	8.784	Continuing	Continuing
L65: <i>Test Equipment Development</i>	3.310	3.492	2.578	-	2.578	3.596	3.603	3.728	3.791	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element (PE) provides for development and testing of general-purpose test equipment and of state-of-the-art diagnostics and prognostics technology, software and systems to support the increasingly complex electronic components of the Army's new and upgraded weapon systems. It focuses on implementation of commercial test and diagnostic technologies across multiple weapon platforms to minimize the cost of troubleshooting and maintenance of Army equipment in the field.

Modular, reconfigurable automatic and semi-automatic systems are being developed under this program to satisfy weapon system test and diagnostics requirements. The Next Generation Automatic Test System (NGATS) currently under development will provide state-of-the-art test and diagnostic capabilities to support current and future weapon systems. It is the platform for transitioning Agile Rapid Global Combat Support System (ARGCS) technologies into the Army weapon system support structure, and it will replace several aging automatic test systems (ATS) which are becoming prohibitively expensive to operate and maintain.

This PE also provides for continued development and improvement of general-purpose test equipment and calibration standards with emphasis on the incorporation of digital electronics and tailoring of configurations to improve deployability, mobility and survivability of the support equipment. Artificial intelligence and anticipatory maintenance applications are being developed to support the integration of self-diagnostic capabilities in Army weapons and support systems. The goal of these efforts is to reduce logistics burdens and improve readiness by minimizing the need for external testers and improving the troubleshooting abilities of soldiers in the field.

FY 2013 Base funding for this program continues development in accordance with Department of Defense and Army policies of the Army standard Next Generation Automatic Test System which will improve deployability and mobility of test and diagnostic equipment and replace aging and obsolete automated equipment currently supporting a number of the Army's vital warfighting systems. It will also develop or significantly modify test equipment to satisfy modular force and homeland security support requirements that cannot be accommodated with test equipment currently available in the commercial marketplace.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
2040: <i>Research, Development, Test & Evaluation, Army</i>	PE 0604746A: <i>Automatic Test Equipment Development</i>
BA 5: <i>Development & Demonstration (SDD)</i>	

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	14.041	14.375	10.705	-	10.705
Current President's Budget	13.553	14.361	10.815	-	10.815
Total Adjustments	-0.488	-0.014	0.110	-	0.110
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.396	-			
• Adjustments to Budget Years	-	-	0.110	-	0.110
• Other Adjustments 1	-0.092	-0.014	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>	PROJECT L59: <i>DIAGNOST/EXPERT SYS DE</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
L59: <i>DIAGNOST/EXPERT SYS DE</i>	10.243	10.869	8.237	-	8.237	8.387	8.308	8.639	8.784	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project funds development of and system enhancements for the Next Generation Automatic Test System (NGATS). The NGATS is a general-purpose automatic test system (ATS) that will provide test and diagnostic capabilities required to support current and future weapons and combat support systems and will facilitate retirement of aging and obsolete test equipment that is imposing increasing logistics and operations and support cost burdens. It is the platform for transitioning Agile Rapid Global Combat Support System (ARGCS) technologies into the Army weapon system support structure. The ARGCS initiative was sponsored by the Department of Defense, and all Services are expected to transition demonstrated technologies into their ATS programs. This project also provides for continuing efforts to upgrade and improve general-purpose automatic test equipment to satisfy test and diagnostic requirements of the Army's new and upgraded weapon systems; development and adaptation of automatic test equipment required to overcome existing deficiencies and voids in organic test and diagnostic capabilities; development and testing of common procedures utilizing existing test program sets and software applications; and market surveys of commercially available test equipment, methods and procedures to determine applicability to Army requirements. The test and diagnostic systems and procedures developed under this project are essential for ensuring the operational readiness, accuracy and effectiveness of the Army's warfighting systems.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>Title: Abrams/Bradley Test Program Set (TPS) Rehost</p> <p style="text-align: right;">Articles:</p> <p>Description: Rehost, test and evaluate initial complement of Abrams/Bradley TPSs for NGATS first unit equipped</p> <p>FY 2011 Accomplishments: Complete rehost, test and evaluation of TPSs</p>	4.309 0	- -	- -
<p>Title: NGATS Logistics Support Products</p> <p style="text-align: right;">Articles:</p> <p>Description: Develop NGATS initial logistics support products (including provisioning, technical manuals and calibration)</p> <p>FY 2011 Accomplishments: Continue development of initial logistics support products</p> <p>FY 2012 Plans: Continue development of initial logistics support products</p> <p>FY 2013 Plans:</p>	0.750 0	0.500 0	0.500

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>	PROJECT L59: <i>DIAGNOST/EXPERT SYS DE</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Continue development and testing of hardware and software for NGATS EO subsystem FY 2012 Plans: Continue development and testing of hardware and software for NGATS EO subsystem; initiate development and testing of hardware and software for support of Increment 3 systems (Apache, Kiowa Warrior, CROWS II, and Stryker Remote Weapons Station) FY 2013 Plans: Continue development and testing of hardware and software for NGATS EO subsystem; continue development and testing of hardware and software for support of Increment 3 systems (Apache, Kiowa Warrior, CROWS II, and Stryker Remote Weapons Station)				
Title: General-Purpose Shop Replaceable Unit Diagnostic Capability Description: Develop expanded general-purpose shop replaceable unit diagnostic capability FY 2011 Accomplishments: Initiate development of expanded general-purpose shop replaceable unit diagnostic capability FY 2012 Plans: Continue development of expanded general-purpose shop replaceable unit diagnostic capability FY 2013 Plans: Continue development of expanded general-purpose shop replaceable unit diagnostic capability		Articles: 0.500 0	0.500 0	0.500
Title: Abrams/Bradley Test Program Set (TPS) Redesign Description: Redesign, test and evaluate Abrams/Bradley TPSs FY 2011 Accomplishments: Initiate redesign, test and evaluation of TPSs FY 2012 Plans: Continue redesign, test and evaluation of TPSs FY 2013 Plans: Continue redesign, test and evaluation of TPSs		Articles: 1.000 0	1.000 0	0.500
Title: Additional Software Capabilities		0.300	0.800	0.500

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>	PROJECT L59: <i>DIAGNOST/EXPERT SYS DE</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<i>Articles:</i>		0	0	
Description: Develop software capabilities to incorporate common logistics operating environment (CLOE)/netcentric and embedded diagnostics data collection and analysis for closed loop diagnostic maintenance in support of condition-based maintenance				
FY 2011 Accomplishments: Initiate development of expanded software capabilities				
FY 2012 Plans: Continue development of expanded software capabilities				
FY 2013 Plans: Continue development of expanded software capabilities				
Title: Smart TPSs		-	0.600	0.500
<i>Articles:</i>			0	
Description: Develop enhanced smart TPS hardware and software				
FY 2012 Plans: Initiate development of enhanced smart TPSs				
FY 2013 Plans: Continue development of enhanced smart TPSs				
Title: Power and Weight Enhancements		-	0.517	0.500
<i>Articles:</i>			0	
Description: Develop power and weight enhancements for NGATS				
FY 2012 Plans: Initiate development of power and weight enhancements				
FY 2013 Plans: Continue development of power and weight enhancements				
Title: Abrams/Bradley EO TPS Development		-	1.500	1.082
<i>Articles:</i>			0	

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>	PROJECT L59: <i>DIAGNOST/EXPERT SYS DE</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Description: Develop Abrams/Bradley TPSs for use with NGATS EO asset			
FY 2012 Plans: Initiate development of TPSs			
FY 2013 Plans: Continue development of TPSs			
Accomplishments/Planned Programs Subtotals	10.243	10.869	8.237

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• : OPA3, SSN MB4000, Integrated Family of Test Equipment (IFTE)	103.323	36.937	45.508		45.508		78.239	70.126	65.406	Continuing	Continuing

D. Acquisition Strategy

This developmental project consists of cooperative in-house and competitive and sole-source contractual actions. When the necessary expertise and capability are available within the Department of Defense, services required for the individual development projects are ordered from the government source; otherwise, commercial contracts are used. Equipment required for developmental projects is obtained by contract from the commercial supplier. Developmental efforts for the Next Generation Automatic Test System (NGATS) are being completed under a sole-source contract awarded to the prime contractor for the Integrated Family of Test Equipment off-platform testers. Full-rate production of the system will be a competitive award. NGATS is following an evolutionary acquisition strategy using incremental development. The NGATS Increment 1 will replace the Direct Support Electrical Systems Test Set (DSESTS). Increment 2 and the electro-optics subsystem will replace the Base Shop Test Facility (BSTF) (V)3 and BSTF (V)5 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>	PROJECT L59: <i>DIAGNOST/EXPERT SYS DE</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prototype Development	SS/CPFF	Northrop Grumman, Rolling Meadows, IL.	13.472	2.252		1.062		-		1.062	Continuing	Continuing	Continuing
Hardware/Support Items Development	Various	Various,:Various	55.129	2.317		1.438		-		1.438	Continuing	Continuing	Continuing
Software Development/Verification/Validation	Various	Various,:Various	23.271	5.100		4.737		-		4.737	Continuing	Continuing	Continuing
Subtotal			91.872	9.669		7.237		-		7.237			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management/Technical Support	Various	Various,:Various	46.691	0.600		0.600		-		0.600	Continuing	Continuing	Continuing
Other Direct	Various	Various,:Various	2.790	0.400		0.400		-		0.400	Continuing	Continuing	Continuing
Subtotal			49.481	1.000		1.000		-		1.000			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Testing	Various	Various,:Various	3.814	0.200		-		-		-	Continuing	Continuing	Continuing
Developmental Testing	Various	Various,:Various	1.046	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			4.860	0.200		-		-		-			

Remarks
Test program set (TPS) and contractor developmental test and evaluation are included in the product development cost.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>				PROJECT L59: <i>DIAGNOST/EXPERT SYS DE</i>				
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	146.213	10.869		8.237		-		8.237			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>	PROJECT L59: <i>DIAGNOST/EXPERT SYS DE</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Full Rate Production Decision Review																												
Full Materiel Release																												
First Unit Equipped																												
NGATS Testing (EO Subsystem)																												
NGATS P3I - Netcentric																												
New Systems Test Capability																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>	PROJECT L59: <i>DIAGNOST/EXPERT SYS DE</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Full Rate Production Decision Review	3	2012	3	2012
Full Materiel Release	3	2012	3	2012
First Unit Equipped	4	2012	4	2012
NGATS Testing (EO Subsystem)	4	2012	4	2014
NGATS P3I - Netcentric	4	2011	4	2015
New Systems Test Capability	2	2011	4	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>	PROJECT L65: <i>Test Equipment Development</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
L65: <i>Test Equipment Development</i>	3.310	3.492	2.578	-	2.578	3.596	3.603	3.728	3.791	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project supports development and demonstration of state-of-the-art calibration instruments and test methods and upgrades/improvements to existing Army calibration systems. It provides for laboratory and feasibility studies, market research, inventory analysis, bid sample testing, and prototyping to support calibration systems and general-purpose test and diagnostic equipment acquisitions. Primary efforts under this project include development of calibration software; development of calibration capability for chemical and biological agent detection systems, aviation test equipment and night vision testers; improvement of test and measurement equipment performance envelopes via preplanned product improvements (P3I); and development/evaluation of advance technology and higher reliability calibration systems and general-purpose test, measurement and diagnostic equipment (TMDE). Preplanned product improvements to current test and measurement systems are underway to overcome deficiencies and voids in existing organic capabilities ensuring the operational readiness, accuracy, effectiveness, and safety of Army weapons and combat support systems. These improvements will employ reconfigurable open electronics architecture and computer-based instrumentation wherever feasible and will be focused on reducing the test equipment footprints to improve deployability and mobility in areas of operation.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>Title: AN/GSM-421(V2)</p> <p align="right">Articles:</p> <p>Description: Develop and test a tactical, up-armor capable Army calibration system that provides a split-based calibration capability.</p> <p>FY 2011 Accomplishments: Complete developmental testing and environmental testing. Initiate user testing.</p> <p>FY 2012 Plans: Complete user testing.</p>	<p>0.595</p> <p>0</p>	<p>0.050</p> <p>0</p>	<p>-</p>
<p>Title: Physical Instruments</p> <p align="right">Articles:</p> <p>Description: Research, develop and test physical parameter calibration instrumentation to support areas such as chemical/biological agent detection systems, night vision testers, hydraulic and pneumatic pressure systems, temperature, etc.</p> <p>FY 2011 Accomplishments:</p>	<p>0.990</p> <p>0</p>	<p>0.850</p> <p>0</p>	<p>0.427</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>	PROJECT L65: <i>Test Equipment Development</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Research and develop calibration standards for optical, radiation and liquid/gas flow calibration test requirements. FY 2012 Plans: Develop and test calibration standards for optical, radiation and liquid/gas flow calibration test requirements. FY 2013 Plans: Complete development and test of liquid hydrocarbon flow calibration and test standards. Continue development of traceable calibration standards for biological and chemical agent detectors and gas mask testers. Continue development and test of pneumatic and hydraulic transport standards.				
Title: Calibration Sets (CALSETS) Software Environment and Calibration Description: Develop and test an Army automated calibration environment and develop calibration procedures. Test efforts in support of DoD Information Assurance Certification and Accreditation Process (DIACAP). FY 2011 Accomplishments: Continue development and evaluation of test and calibration procedures. Research and develop calibration software environment issues. Perform testing for DIACAP issues. FY 2012 Plans: Continue development and evaluation of test and calibration procedures. Conduct development and testing for a calibration software environment. Perform testing efforts for DIACAP issues. FY 2013 Plans: Continue development and evaluation of calibration procedures. Perform testing efforts for DIACAP issues. Complete testing for initial release of a calibration software environment.		Articles: 0.627 0	1.301 0	1.126
Title: Electrical Instruments Description: Research, develop and test electrical parameter calibration instrumentation to support areas such as deployable recertification set, intrinsic electrical standards, electrical transport standards, etc. FY 2011 Accomplishments: Perform market research and evaluation of commercial equipment and develop performance specifications for acquisition. Continue development of deployable recertification set capability. Develop/test transport standards. FY 2012 Plans:		Articles: 0.778 0	0.971 0	0.975

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>	PROJECT L65: <i>Test Equipment Development</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Perform market research and evaluate commercial equipment and develop performance specifications for acquisition. Continue development of deployable recertification set capability. Continue testing of transport standards. Develop/test intrinsic electrical standards. FY 2013 Plans: Perform market research and evaluate commercial equipment and develop performance specifications for acquisition of transport calibration standards package. Develop requirements and specifications for small, practical intrinsic voltage standard. Complete development and initiate testing of a deployable recertification set capability. Continue development and test of an intrinsic voltage standard.			
Title: Test Equipment Modernization Description: Perform market research and evaluation of commercial equipment and develop performance specifications for acquisition. FY 2011 Accomplishments: Perform market research and evaluation of commercial equipment and develop performance specifications for acquisition. FY 2012 Plans: Perform market research and evaluation of commercial equipment and develop performance specifications for acquisition. FY 2013 Plans: Perform market research and evaluation of commercial equipment and develop performance specifications for acquisition.	0.320 0	0.320 0	0.050
Articles:			
Accomplishments/Planned Programs Subtotals	3.310	3.492	2.578

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• SSN N10000: <i>Calibration Sets Equipment</i>	38.560	13.618	10.494		10.494		7.798	7.771	9.136	Continuing	Continuing
• SSN N11000: <i>Test Equipment Modernization</i>	18.064	30.451	24.334		24.334		24.856	26.322	26.778	Continuing	Continuing

D. Acquisition Strategy
Projects are focused on use of commercial and nondevelopmental item technologies. When programmatic and engineering expertise and capability are available within the Department of Defense, services required for the individual development projects are acquired from the government source; otherwise, commercial services

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	PE 0604746A: <i>Automatic Test Equipment Development</i>	L65: <i>Test Equipment Development</i>

contracts are used to provide these capabilities. Equipment required for development projects is obtained from the commercial supplier. Candidate commercial equipment and nondevelopmental items are identified and evaluated through market research and government testing and evaluation.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>	PROJECT L65: <i>Test Equipment Development</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
In-house Engineering	SS/LH	Civ Labor:various	2.416	0.600		0.700		-		0.700	Continuing	Continuing	0.000
Subtotal			2.416	0.600		0.700		-		0.700			0.000

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CALSETS Software Environment and Calibration	Various	Various:Various	4.098	1.011		0.600		-		0.600	Continuing	Continuing	0.000
AN/GSM-421(V2)	Various	Various:Various	2.346	-		-		-		-	Continuing	Continuing	0.000
Physical Instruments	Various	Various:Various	5.632	0.380		0.250		-		0.250	Continuing	Continuing	0.000
Electrical Instruments	Various	Various:Various	7.287	0.851		0.578		-		0.578	Continuing	Continuing	0.000
Test Equipment Modernization	Various	Various:Various	0.110	0.120		0.050		-		0.050	Continuing	Continuing	0.000
Subtotal			19.473	2.362		1.478		-		1.478			0.000

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Engineering	Various	Various:various	1.837	-		-		-		-	Continuing	Continuing	0.000
Subtotal			1.837	-		-		-		-			0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/GSM-421(V2)	Various	Various:Various	0.570	0.050		-		-		-	Continuing	Continuing	0.000
Physical Instruments	Various	Various:Various	1.200	0.100		0.075		-		0.075	Continuing	Continuing	0.000
CALSETS Software Environment and Calibration	Various	Various:Various	0.150	0.150		0.200		-		0.200	Continuing	Continuing	0.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>			PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>								
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	15.031	15.787	13.926	-	13.926	13.920	14.019	14.430	14.768	Continuing	Continuing
C74: <i>DEVEL SIMULATION TECH</i>	3.438	3.626	2.206	-	2.206	1.914	2.184	2.196	2.331	Continuing	Continuing
C77: <i>Army Geospatial Data Master Plan</i>	0.461	0.483	-	-	-	-	-	-	-	Continuing	Continuing
C78: <i>One Semi-Automated Forces (OneSAF)</i>	11.132	11.678	11.720	-	11.720	12.006	11.835	12.234	12.437	Continuing	Continuing

Note

Change Summary Explanation: Realigned to higher priority requirements.

A. Mission Description and Budget Item Justification

The program element "Distributive Interactive Simulations - Engineering Development" applies to the Army's Advanced Simulation Program, which enables operational readiness and the development of concepts and systems for the Future Force through the application of new simulation technology and techniques. The development and application of simulation technology will provide the means to link electronically a range of various simulation tools in a manner that is transparent to the user. The amalgam of simulations and tools is linked together to enable execution of an event; to verify the scenarios, tactics/techniques and procedures; to train testers on new hardware/software; and to conduct trial test runs before costly live field tests. The tools developed are available for reuse by developers and users of simulations throughout the Army.

Project C74 provides the resources necessary to perform the formally chartered mission of the Army's Simulation-to-C4I* Interoperability Overarching Integrated Product Team (SIMCI OIPT). (*C4I = Command, Control, Communications, Computers and Intelligence.) Project C77, Army Geospatial Data Master Plan, focuses on activities that start with data acquisition from multiple sources and culminate in (1) accurate, robust and timely geospatial data and data management and (2) integration and conversion tools that support multiple battle command, training and mission-rehearsal applications. Project C78 develops the One Semi-Automated Forces (OneSAF) program, which will combine and improve the functionality and behaviors of several current semi-automated forces to provide a single SAF for Army use in simulations.

FY 2013 funding for Project C74 continues management of the SIMCI OIPT's Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. Project C77 has no FY 2013 funding. Project C78 will continue the development of software as required to provide OneSAF Pre-Planned Product Improvements (P3Is) as prioritized and approved by the Training and Doctrine Command.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>
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B. Program Change Summary (\$ in Millions)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	15.547	15.803	15.957	-	15.957
Current President's Budget	15.031	15.787	13.926	-	13.926
Total Adjustments	-0.516	-0.016	-2.031	-	-2.031
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.394	-			
• Adjustments to Budget Years	-0.122	-0.016	-2.031	-	-2.031

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	PROJECT C74: <i>DEVEL SIMULATION TECH</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
C74: <i>DEVEL SIMULATION TECH</i>	3.438	3.626	2.206	-	2.206	1.914	2.184	2.196	2.331	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Project C74 funds the HQDA-chartered mission of the Simulation-to-Mission Command Interoperability (SIMCI) Overarching Integrated Product Team (OIPT). The SIMCI OIPT mission is to provide policy recommendations to Army senior leadership to improve organizations by allowing Soldiers to fight in the same manner which they train. This is accomplished by interoperability between Mission Command (MC) systems and the Modeling and Simulation (M&S) systems the Army uses to stimulate MC systems for training Soldiers and their Leaders. SIMCI also invests in targeted solutions to critical problem areas that exist between MC and Simulations. The SIMCI OIPT, led by PEO STRI and PEO C3T, uses focused collaborative processes among its 30+ Army organizations to identify key/critical interoperability shortfalls and the required materiel solutions.

The SIMCI OIPT provides the following: (1) Advisor to Army Leadership--improve MC and M&S interoperability programs, policies, directives, resourcing, and procedures; (2) Technical Investment--sponsor/support initiatives that seek common solutions to critical interoperability issues surrounding MC and M&S systems; (3) Outreach--conduct & participate in interoperability outreach activities. SIMCI investments consist primarily of cost-sharing initiatives, leveraging initial system solutions of acquisition programs to enhance the interoperability of multiple systems in the Joint Operational Environment. SIMCI investments accelerate implementation within MC and M&S systems, of common data models and information exchanges that are used by other Services and coalition nations, thus enhancing the inherent ability of Army systems to interoperate seamlessly in a Joint, Interagency, Intergovernmental, and Multinational (JIIM) environment.

FY 2013 funding continues management of the SIMCI OIPT'S Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. It is focused first on reducing costs and improving capabilities in the areas of automating Operational Plans, Orders, and Reports in support of Army, Joint, and Coalition operations. Objectives are: identify and articulate to HQDA senior leadership specific standards that require Army-wide implementation; co-develop data standards, architecture standards, implementation specifications and Joint/Coalition products; continue transition of SIMCI knowledge and proof-of-principle products to Army and Joint acquisition programs.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: Program Management for the SIMCI Overarching Integrated Product Team (OIPT) Projects.	3.438	3.626	2.206
Articles:	0	0	
Description: Program Management of the SIMCI OIPT's Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products.			
FY 2011 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	PROJECT C74: <i>DEVEL SIMULATION TECH</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Continued management of the SIMCI OIPT'S Army-wide collaborative, interoperability enhancement activities. It focused first on reducing costs and improving capabilities in the areas of Army/Joint BC training and testing functionality and interoperability for BC systems and simulations. Objectives were: identify and articulate to HQDA senior leadership specific standards that require Army-wide implementation; co-develop data standards, architecture standards, implementation specifications, and joint initialization / scenario-generation products; co-develop common data integration/translation capability for BC/M&S applications; co-develop MC/M&S products to support PEO Integration; continue transition of SIMCI knowledge and proof-of-principle products to Army and Joint acquisition programs.</p> <p>FY 2012 Plans: Continues management of the SIMCI OIPT'S Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. It is focused first on reducing costs and improving capabilities in the areas of automating Operational Plans, Orders, and Reports in support of Army, Joint, and Coalition operations. Objectives are: identify and articulate to HQDA senior leadership specific standards that require Army-wide implementation; co-develop data standards, architecture standards, implementation specifications and Joint/Coalition products; co-develop MC/M&S products to support PEO Integration; continue transition of SIMCI knowledge and proof-of-principle products to Army and Joint acquisition programs.</p> <p>FY 2013 Plans: Continues management of the SIMCI OIPT'S Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. It is focused first on reducing costs and improving capabilities in the areas of automating Operational Plans, Orders, and Reports in support of Army, Joint, and Coalition operations. Objectives are: identify and articulate to HQDA senior leadership specific standards that require Army-wide implementation; co-develop data standards, architecture standards, implementation specifications and Joint/Coalition products; continue transition of SIMCI knowledge and proof-of-principle products to Army and Joint acquisition programs.</p>			
Accomplishments/Planned Programs Subtotals	3.438	3.626	2.206

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

SIMCI OIPT resources are allocated to multiple organizations in both the MC and M&S Communities. The funds are contracted to execute approved functions and to projects that advance the efforts of SIMCI and components-based architecture alignment. Products developed transition to the lead or sponsor's program which then maintains the product for the cost savings of itself and other programs in both Communities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	PROJECT C74: <i>DEVEL SIMULATION TECH</i>

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	PROJECT C74: <i>DEVEL SIMULATION TECH</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PEO STRI:Orlando, FL	9.284	0.216		0.200		-		0.200	Continuing	Continuing	Continuing
Subtotal			9.284	0.216		0.200		-		0.200			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Transition of simulation initialization capability	Various	JCW:Suffolk, VA	2.461	0.385		0.193		-		0.193	Continuing	Continuing	Continuing
Geospatial Initiative	Various	GMU:Fairfax, VA	1.028	0.370		0.215		-		0.215	Continuing	Continuing	Continuing
Data Model applications and reference implementations	Various	Viecore FSD, George Mason Univ.;Ft. Monmouth, NJ	1.912	0.500		0.144		-		0.144	Continuing	Continuing	Continuing
Implementation of Initialization Products	Various	Alion Science & Technology:Tysons Corner, VA	1.795	0.475		0.150		-		0.150	Continuing	Continuing	Continuing
Initialization Study Implementation	Various	IDA:Alexandria, VA	0.710	0.309		0.170		-		0.170	Continuing	Continuing	Continuing
Mission Comand systems data mediation/web services	Various	NVESD, CERDEC, AGC:Various	2.419	0.197		0.200		-		0.200	Continuing	Continuing	Continuing
Expanding MTOE System Architecture (SA) Data	SS/FP	General Dynamics:Orlando, FL	1.619	0.210		-		-		-	0.000	1.829	1.829
C2 Adapter Web Services and Tools	Various	PEO STRI & ACG:Orlando, FL	1.918	0.505		0.225		-		0.225	Continuing	Continuing	Continuing
Subtotal			13.862	2.951		1.297		-		1.297			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>				PROJECT C77: <i>Army Geospatial Data Master Plan</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
<i>C77: Army Geospatial Data Master Plan</i>	0.461	0.483	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Project C77 addresses the implementation and acceleration of objectives of the Army Geospatial Data Integrated Master Plan (AGDIMP), approved by the Chief of Staff, Army in April 2005. The AGDIMP provides the framework for generating, analyzing and distributing geospatial data for battle management operations, training, and mission rehearsal. The AGDIMP also provides the procedures for identifying and refining Army geospatial resource requirements. Geospatial data provide soldiers with the framework and background for displaying the location of friendly and enemy forces and the location of other critical features on the battlefield. Geospatial data -- used in Army command and control systems, course of action analysis, mission rehearsal tools, simulators and simulations -- provide insights on how the physical environment will impact combat operations. This minimizes exposure of soldiers to hostile environments. The AGDIMP describes the operations for a complete, integrated network-centric enterprise for managing and updating geospatial data required for the Army's Future Force. Although this plan encompasses most of the issues of an enterprise solution for geospatial needs and concerns, it does not contain the full level of detail or complexity required to be considered complete. The AGDIMP includes all activities starting with data acquisition from multiple sources (including raw sensor feeds from national sensors to soldier/platform level) and concluding with accurate, robust, and timely geospatial (terrain-related) data management, integration, and conversion tools that support multiple battle command, training, and mission-rehearsal applications. The AGDIMP does not include the algorithms and functions used by the applications themselves to produce finished battle command or intelligence products. The AGDIMP will become part of a much larger effort to integrate geospatial activities across all Services while documenting the complex framework for a "net ready" geospatial information and service architecture, an environment in which the Army's current and future forces must operate to achieve information dominance within the total battle space. This larger effort is currently being developed in conjunction with the Joint Forces Command and the other Services, including Special Operations Command.

Project C77 has no FY 2013 funding.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: Army Geospatial Data Model	0.250	0.239	-
Articles:	0	0	
Description: The Army Geospatial Data Model (AGDM) incorporates common data elements that conform to standards mandated by the Department of Defense Information Technology Standards Registry (DISR) for the National System for Geospatial Intelligence (NSG). Incorporating common geospatial data standards into the AGDM makes programs of record consistent with new DISR-mandated geospatial intelligence standards for the NSG.			
FY 2011 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	PROJECT C77: <i>Army Geospatial Data Master Plan</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Contributed to the development of the Army geospatial data model.				
FY 2012 Plans: Contribute to the development of the Army geospatial data model.				
Title: Geospatial Data Standards				
		0.211	0.244	-
		0	0	
Articles:				
Description: Army geospatial data -- used in Army command and control systems, course of action analysis, mission rehearsal tools, simulators and simulations -- provide insight on how the physical environment will impact combat operations. The Army Geospatial Data Model (AGDM) involves synchronization of data dictionaries at Army and DoD levels so that geospatial data can be seamlessly transferred and viewed between Battle Command (BC) systems and at the national level to enable a Common Operating Picture (COP).				
FY 2011 Accomplishments: Developed geospatial data standards and integrate geospatial data into the Battle Command (BC) systems.				
FY 2012 Plans: Develop geospatial data standards and integrate geospatial data into the Battle Command (BC) systems.				
Accomplishments/Planned Programs Subtotals		0.461	0.483	-
C. Other Program Funding Summary (\$ in Millions)				
N/A				
D. Acquisition Strategy				
Resources are allocated to multiple organizations for approval and execution of projects in support of the AGDIMP.				
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.				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>				PROJECT C78: <i>One Semi-Automated Forces (OneSAF)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
C78: <i>One Semi-Automated Forces (OneSAF)</i>	11.132	11.678	11.720	-	11.720	12.006	11.835	12.234	12.437	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Project C78 develops and delivers a software system that represents activities of units and forces in simulation. This representation is used to support the concept evaluation, experimentation, materiel acquisition and training communities. The focus of this project is systems engineering and design for development and evolution of the architecture and software tools for a universal system of Army computer-generated forces -- One Semi-Automated Forces (OneSAF). OneSAF is a next-generation higher fidelity brigade-and-below SAF that represents a full range of operations, systems and control processes in support of stand-alone and embedded training and Research, Development and Acquisition (RDA) simulation applications. OneSAF will be fully interoperable with the Army's emerging virtual, live, and division-and-above constructive simulations and will provide next-generation simulation products. OneSAF will replace a variety of simulations currently used within the Army to support analytic and training simulation activities.

FY 2013 funding will continue the development of software product line to provide OneSAF Pre-Planned Product Improvements (P3Is) as prioritized and approved by the Training and Doctrine Command (TRADOC) Project Office.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: Engineering and Manufacturing Development (EMD) phase contract activities for the One Semi-Automated Forces program.	7.857	8.278	8.120
Articles:	0	0	
Description: Continue EMD phase contract activities for the OneSAF program.			
FY 2011 Accomplishments: Continued the development of software as required to provide OneSAF Pre-Planned Product Improvements (P3Is) as prioritized and approved by the Training and Doctrine Command (TRADOC) Project Office. Continued software development of functionality to provide architectural services, components, synthetic environment and infrastructure capable of supporting initial model development. Performed Software development, test and release of Version 5.0. Provided support to the OneSAF user community			
FY 2012 Plans: Continue the development of software to provide OneSAF Pre-Planned Product Improvements (P3Is) as prioritized and approved by the Training and Doctrine Command (TRADOC) Project Office. Continue software development of functionality to provide			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	PROJECT C78: <i>One Semi-Automated Forces (OneSAF)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
architectural services, components, synthetic environment and infrastructure capable of supporting initial model development. Perform Software development, test and release of Version 5.1.1 and Version 5.5. FY 2013 Plans: Continue the development of software capabilities to provide OneSAF Pre-Planned Product Improvements (P3Is) as prioritized and approved by the Training and Doctrine Command (TRADOC) Project Office. Continue software development of functionality to enhance architectural services, components, synthetic environment and infrastructure capable of supporting model development. Perform Software development, test and release of Version 6.0				
Title: Government System Test and Evaluation for the One Semi-Automated Forces program. Description: Government System Test and Evaluation for the OneSAF program. FY 2011 Accomplishments: Performed software development, test and release of Version 5.0. Provided support to the user community. FY 2012 Plans: Perform development software, test, release and verification for Version 5.1.1 and 5.5. Provide support to the user community in conducting experiments and validation events as needed for continued integration into the JLCCTC federation and LVC applications. FY 2013 Plans: Perform development software, test, release and verification for Version 6.0. Provide support to the user community in conducting experiments and validation events as needed for integration into the JLCCTC federation and LVC applications.		1.000 0	1.000 0	1.100
Title: Government Program Management for the OneSemi-Automated Forces (OneSAF) program. Description: Government Program Management for the OneSAF program. FY 2011 Accomplishments: The Government Program Management Office for OneSAF supported the design, development and integration of OneSAF version 5.0. Provided Government oversight and management of manpower, facilities, training and operations and maintenance. FY 2012 Plans:		2.275 0	2.400 0	2.500

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	PROJECT C78: <i>One Semi-Automated Forces (OneSAF)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
The Government Program Management Office for OneSAF supports the design, development and integration of OneSAF Versions 5.1.1 and 5.5. Provides for government manpower, facilities, training, operations and maintenance of the OneSAF infrastructure. FY 2013 Plans: Provides for Government Program Management Office support of the development and integration of OneSAF version 6.0. Funding supports manpower, facilities, training, operations and maintenance and other infrastructure.			
Accomplishments/Planned Programs Subtotals	11.132	11.678	11.720

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OMA: OMA, 121014000	3.548	4.487	4.190		4.190		4.993	5.106	5.192	Continuing	Continuing

D. Acquisition Strategy

Continue the yearly version release of the OneSAF SW containing performance enhancements resulting from both approved Product Improvements and Co-Developer handovers as integrated into the released version.

Manage the two new competitive Delivery Orders; and the Integration, Interoperability, and Support (I2S) to fully serve the current and evolving needs of the program.

Focused on OneSAF Product Line capability enhancements to deliver SW products, data, and documentation that meets the needs of the growing user community. The enhancements will be executed within the development line as modifications to the released baseline via Engineering Change Proposals (ECPs); Change Requests (CRs); Pre-Planned Product Improvements (P3I); and correction of deficiencies identified as Problem Test Reports (PTRs) and Deficiency Reports (DRs) by the user community.

The I2S Delivery Order is focused on the Configuration Management and Control of the released OneSAF Product Line and executes the overarching OneSAF integration, interoperability and support efforts required for delivery of OneSAF SW, data and documentation products to the User Community. It also provides the Conceptual Modeling, Architectural and Engineering support to the OneSAF Co-Developers as required to support their OneSAF SW product deliveries; the training products and support required by the OneSAF user community; and integration of capabilities.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	PROJECT C78: <i>One Semi-Automated Forces (OneSAF)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PEO STRI, Orlando, FL:Various	15.481	2.400		2.500		-		2.500	Continuing	Continuing	Continuing
Subtotal			15.481	2.400		2.500		-		2.500			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Architecture Dev & System Integration	C/CPFF	Science Applications International Corp:Orlando, FL	51.466	-		-		-		-	0.000	51.466	51.466
Model and Tools Development	C/CPFF	Science Applications International Corp:Orlando, FL	27.625	-		-		-		-	0.000	27.625	27.625
Environmental Runtime Component	C/CPFF	Science Applications:Orlando, FL	7.981	-		-		-		-	0.000	7.981	7.981
OneSAF Component Development	C/CPFF	Various:Various	9.648	-		-		-		-	0.000	9.648	9.648
Integrated Environment Dev	C/CPFF	Advanced Systems Technology, Inc:Orlando FL	11.702	-		-		-		-	0.000	11.702	11.702
OneSAF Bridge Contract	C/CPFF	Science Applications International Corp:Orlando, FL	3.797	-		-		-		-	0.000	3.797	3.797
Integration, Interoperability, and Support (I2S)	C/CPFF	Cole Engineering Services, Inc.:Orlando, FL	0.350	1.288		1.500		-		1.500	Continuing	Continuing	Continuing
Software Development	C/CPFF	Science Applications International Corp:Orlando, FL	1.150	5.070		4.310		-		4.310	Continuing	Continuing	Continuing
Subtotal			113.719	6.358		5.810		-		5.810			

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army			DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>			PROJECT C78: <i>One Semi-Automated Forces (OneSAF)</i>		

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
OneSAF Version Release 5.0	■																											
OneSAF Version Release 5.5							■																					
OneSAF Version Release 6.0											■																	
OneSAF Version Release 7.0															■													
OneSAF Version Release 8.0																			■									
OneSAF Version Release 9.0																							■					
OneSAF Version Release 10.0																												■

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	PROJECT C78: <i>One Semi-Automated Forces (OneSAF)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
OneSAF Version Release 5.0	2	2011	2	2011
OneSAF Version Release 5.5	3	2012	3	2012
OneSAF Version Release 6.0	2	2013	2	2013
OneSAF Version Release 7.0	2	2014	2	2014
OneSAF Version Release 8.0	2	2015	2	2015
OneSAF Version Release 9.0	2	2016	2	2016
OneSAF Version Release 10.0	2	2017	2	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	26.699	22.205	17.797	-	17.797	21.119	26.607	24.518	23.709	Continuing	Continuing
571: <i>CLOSE CBT TACT TRAINER</i>	4.513	4.317	4.252	-	4.252	4.519	4.455	6.646	6.645	Continuing	Continuing
577: <i>Gaming Technology in Support of Army Training</i>	0.903	1.427	1.348	-	1.348	2.043	0.872	1.496	1.521	Continuing	Continuing
582: <i>SYNTHETIC ENVIR CORE</i>	19.361	13.914	9.616	-	9.616	11.889	18.784	12.709	12.760	Continuing	Continuing
585: <i>AVIATION COMBINED ARMS TACTICAL TRAINER</i>	1.922	2.547	2.581	-	2.581	2.668	2.496	3.667	2.783	Continuing	Continuing

Note

Change Summary Explanation: None required.

A. Mission Description and Budget Item Justification

The Combined Arms Tactical Trainers (CATT) represent a family of combined arms simulation systems designed to support the Army's simulation-based Combined Arms Training Strategy. CATT enables units, from crew to the battalion task force level, to conduct a wide variety of combat tasks on a realistic, interactive, synthetic battlefield. CATT's combination of manned simulators and staff officer workstations enables units to train as a combined arms team in a cost effective manner. The primary CATT system is the Close Combat Tactical Trainer (CCTT) which provides the underlying baseline architecture and After Action Review (AAR) for CATT expansions, Pre-Planned Product Improvements (P3I) and system enhancements. The Reconfigurable Vehicle Simulator (RVS) and Dismounted Soldier Training System (DSTS) variants support combat convoy operations and Improvised Explosive Devices (IED) tasks. Synthetic Environment (SE) Core provides for the expansion of the synthetic environment baseline to include enhanced interoperability and the products and infrastructure to support current and future combat operations and mission rehearsal required for Overseas Contingency Operations (OCO) and Decisive Operations. The first synthetic environments expanded were in the Aviation Combined Arms Tactical Trainer (AVCATT) and the CCTT for both the Active and Reserve components. Gaming Technology provides an application to train and rehearse convoy-operations, platoon level, mounted infantry tactics, dismounted operations, rules-of-engagement training, cross-cultural communications training, IED defeat training, route clearance, ground-air coordination, Unmanned Aerial Vehicle (UAV) integration, and other small unit and individual training and mission rehearsal requirements. Soldiers can train in a common environment on geotypical or geospecific terrain. It is also possible to link Gaming technology to actual communication, command, control, computer, and intelligence (C4I) systems and other CATT simulation systems to increase the utility and realism of the training. By practicing skills in CATT, units are able to effectively prepare for costly live fire and maneuver exercises, as well as train tasks deemed too hazardous to conduct in a live training environment. Fielded in both fixed site and mobile versions, CATT enables both Active and Reserve component units to prepare for real world contingency missions. By being able to use a wide array of training terrain databases and modify the behavior of the computer generated opposing forces, CATT offers an unlimited array of training options to support the Army's many regional combat missions. The combination of tough field and live fire training, and realistic simulation training in CATT, is the formula to prepare Soldiers and their Leaders for the uncertainties they face in current combat operations in Afghanistan, and their transition to Decisive Operations.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>
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FY 2013 Project 571 core funding of \$4.252 million for CCTT enables the P3I for the CCTT Dismounted Soldier Training System (DSTS) system in support of Infantry Brigade Combat Teams, Stryker Brigade Combat Teams, Airborne, Ranger, Special Forces units and Heavy Brigade Combat Teams.

FY 2013 Project 577 core funding of \$1.348 million for Games for Training will integrate OneSAF and new commercial and government technology products into the current gaming system.

FY 2013 Project 582 core funding of \$9.616 million for SE Core will provide for common terrain databases to be generated by the Terrain Database Center (TDC). The TDC continues development and refinement of the Standard Terrain Database Generation Capability (STDGC).

FY 2013 Project 585 core funding of \$2.581 million for AVCATT will develop the capability for AVCATT to interoperate with real and simulated Army Battle Command Systems (ABCS) such as Blue Force Tracker (BFT), Force XXI Battle Command Brigade and Below (FBCB2), and Advanced Field Artillery Tactical Data Systems (AFATDs).

B. Program Change Summary (\$ in Millions)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	27.670	22.226	17.550	-	17.550
Current President's Budget	26.699	22.205	17.797	-	17.797
Total Adjustments	-0.971	-0.021	0.247	-	0.247
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.798	-			
• Adjustments to Budget Years	-0.173	-0.021	0.247	-	0.247

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 571: <i>CLOSE CBT TACT TRAINER</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
571: <i>CLOSE CBT TACT TRAINER</i>	4.513	4.317	4.252	-	4.252	4.519	4.455	6.646	6.645	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This program provides for Engineering and Manufacturing Development (EMD) and Pre-Planned Product Improvements (P3I) for the Close Combat Tactical Trainer (CCTT), which will enhance readiness for both Active and Reserve component forces to support the execution of current and future combat operations including Overseas Contingency Operations (OCO) and Decisive Operations. The program develops a networked system of interactive computer driven simulators, emulators, and semi-automated forces that replicate combat vehicles and weapon systems, combat support systems, combat service support systems, and command and control systems to create a fully integrated, real-time collective task training environment. CCTT allows Soldiers to practice Tactics, Techniques and Procedures (TTP) that, if performed on real equipment, would be too hazardous, time-consuming and expensive. These trainers enhance realism and allow Soldiers and units to learn tactical, combat lessons on maneuver, command and control, convoy operations, and improved teamwork for increased survivability. The P3I enhances CCTT's capabilities as a tactical trainer and maintains concurrency with fielded, tactical equipment and force structure. These improvements will maintain interoperability with the Aviation Combined Arms Tactical Trainer (AVCATT), Army Battle Command System (ABCS), including Force XXI Battle Command Brigade and Below (FBCB2), and other simulation systems needed to execute training for current and future combat operations.

FY 2013 core funding of \$4.252 million for CCTT enables the P3I for the CCTT Dismounted Soldier Training System (DSTS) in support of Infantry Brigade Combat Teams, Stryker Brigade Combat Teams, Airborne, Ranger, Special Forces units and Heavy Brigade Combat Teams.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Government Program Management for the Close Combat Tactical Trainer (CCTT) program.	0.236	0.182	0.729	-	0.729
Articles:	0	0			
Description: Government Program Management for the CCTT program.					
FY 2011 Accomplishments: Supported government program management, engineering, technical, contracting support, and continued operational evaluation support.					
FY 2012 Plans: Supports government program management, engineering, technical, contracting support, and continues operational evaluation support.					
FY 2013 Base Plans:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer</i> (CATT) Core	PROJECT 571: <i>CLOSE CBT TACT TRAINER</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Supports government program management, engineering, technical, contracting support, and continues operational evaluation support.					
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the CCTT DSTS. <div style="text-align: right;">Articles:</div> Description: Continue EMD phase contract activities for the CCTT DSTS. FY 2011 Accomplishments: Development of the CCTT DSTS. FY 2012 Plans: Enables the P3I for the CCTT DS system in support of Infantry Brigade Combat Teams, Stryker Brigade Combat Teams, Airborne, Ranger, Special Forces units and Heavy Brigade Combat Teams. FY 2013 Base Plans: Enables the P3I for the CCTT DSTS in support of Infantry Brigade Combat Teams, Stryker Brigade Combat Teams, Airborne, Ranger, Special Forces units and Heavy Brigade Combat Teams.	1.335 0	4.135 0	3.523	-	3.523
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Armored Security Vehicle (ASV) and Knight vehicle variants of the CCTT Reconfigurable Vehicle Simulator (RVS). <div style="text-align: right;">Articles:</div> Description: Continue EMD phase contract activities for the ASV and Knight vehicle variants of the CCTT RVS. FY 2011 Accomplishments: Development of the ASV and Knight vehicle variants of the CCTT RVS.	2.942 0	-	-	-	-
Accomplishments/Planned Programs Subtotals	4.513	4.317	4.252	-	4.252

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPA3, Appropriation NA0170: <i>OPA3, Appropriation NA0170</i>	84.279	13.290	19.984		19.984		26.324	31.365	30.893	Continuing	Continuing

D. Acquisition Strategy
FY 2013 will enable Pre-Planned Product Improvements (P3I) for the Dismounted Soldier Training System (DSTS).

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 571: <i>CLOSE CBT TACT TRAINER</i>

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 571: <i>CLOSE CBT TACT TRAINER</i>
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FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
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

Development and P3I of the CCTT Dismounted Soldier Training System	
Development of the ASV and Knight vehicle variants for the CCTT RVS	

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 571: <i>CLOSE CBT TACT TRAINER</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Development and P3I of the CCTT Dismounted Soldier Training System	2	2011	4	2017
Development of the ASV and Knight vehicle variants for the CCTT RVS	3	2011	3	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>				PROJECT 577: <i>Gaming Technology in Support of Army Training</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
577: <i>Gaming Technology in Support of Army Training</i>	0.903	1.427	1.348	-	1.348	2.043	0.872	1.496	1.521	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The Games for Training (GFT) program provides a commercial-off-the-shelf (COTS) product line of personal computer based gaming applications to train Soldiers in decision-making, team and individual tasks at different skill levels, using multiple mission scenarios. The program leverages the commercial game industry to provide state of the art training solutions. The GFT program provides Army-wide licenses from the commercial market, or from Research and Development agencies, and the hardware required to operate the systems. The individual products permit Soldiers and units to conduct training in a real-time, semi-immersive environment that will leverage Synthetic Environment Core (SE Core) capabilities and is compliant with Live, Virtual and Constructive Integrated Training Environment (LVC-ITE). The GFT program currently supports both Overseas Contingency Operations (OCO) and Decisive Operations.

FY 2013 core funding of \$1.348 million will integrate OneSAF and new commercial and government technology products into the current gaming system.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Games for Training (GFT) program.	0.754	1.133	1.009	-	1.009
Articles:	0	0			
Description: Continue EMD phase contract activities for the GFT program.					
FY 2011 Accomplishments: Funding provided modifications to the GFT system to integrate and provide interoperability with Army Battle Command Systems (ABCS) and other simulators and simulations in support of home station training, OCO and Decisive Operations.					
FY 2012 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 577: <i>Gaming Technology in Support of Army Training</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Funding will provide modifications to the GFT system to integrate and provide interoperability with medical training systems, ABCS and other simulators and simulations in support of home station training, OCO and Decisive Operations. FY 2013 Base Plans: Funding will provide modifications to the GFT system to ensure compliance with the LVC-ITE in support of Decisive Operations.					
Title: Government Program Management for the Games for Training (GFT) program. Description: Government Program Management for the GFT program. FY 2011 Accomplishments: Supported Government program management, engineering, technical, contract and test support for the GFT program. FY 2012 Plans: Supports Government program management, engineering, technical, contract and test support for the GFT program. FY 2013 Base Plans: Supports Government program management, engineering, technical, contract and test support for the GFT program.	0.149 0	0.294 0	0.339	-	0.339
Articles:					
Accomplishments/Planned Programs Subtotals	0.903	1.427	1.348	-	1.348

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPA 3: <i>OPA 3, Appropriation NA0176 Gaming Technology in Support of Army Training</i>	4.937		4.056	5.900	9.956		11.016	12.501	4.736	Continuing	Continuing

D. Acquisition Strategy

Competitive contract against the approved Capabilities Production Document (CPD), dated 18 Sep 08.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 577: <i>Gaming Technology in Support of Army Training</i>

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 577: <i>Gaming Technology in Support of Army Training</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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

LVC-IA integration	[REDACTED]																											
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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 577: <i>Gaming Technology in Support of Army Training</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
LVC-IA integration	2	2013	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 582: <i>SYNTHETIC ENVIR CORE</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
582: <i>SYNTHETIC ENVIR CORE</i>	19.361	13.914	9.616	-	9.616	11.889	18.784	12.709	12.760	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project supports the Synthetic Environment Core (SE Core) Program. SE Core's mission is to ensure the Army's virtual training systems and simulators are fully integrated and interoperable. SE Core provides visual models (buildings and vehicles), terrain (over which the simulator moves), and entity behaviors (models performing realistic and appropriate actions) that are relevant and realistic to Unified Land Operations. The result is a "Fair Fight" capability; no simulator or operator will have an inherent advantage over another. This allows for air and ground to have coordinated and integrated training events that accurately replicate combat operations. Additionally, SE Core is building the Army's Common Virtual Environment (CVE) that provides the linkage between simulators and establishes a common environment for interoperability. This allows various simulators to be "hooked up" together for a train as they fight capability. SE Core is a foundational element in the Army's Training Transformation Plan linking the embedded systems, multi-mode Live, Virtual, Constructive (LVC) training capability with current systems.

The SE Core components are One Semi-Automated Forces (OneSAF) integration; terrain database production; common visual models; a virtual systems architecture; a dynamic environment; mission command development; and net ready. A major SE Core component is the Standard Terrain Database Generation Capability (STDGC) process used to produce the synthetic terrain used in simulators and simulations. This terrain produced by SE Core is a key component for virtual simulators and constructive simulations and will expand to meet the growing demands of today's and future simulations.

FY 2013 base funding of \$9.616 million will provide expanded development and production for common terrain databases as well as refining the production process. FY2013 funds will focus on modifying the Terrain Development process for constructive Terrain Database Production and continue to enhance OneSAF in the SE Core Architecture, CCTT, AVCATT and other virtual simulator baselines. Maintaining OneSAF for virtual simulations enables interoperability with the LVC ITE and reduces cost as individual virtual simulators will no longer develop and maintain separate SAFs. The SE Core Product Line of Common Virtual Components will continue with upgrades, integration and refinement, and the continued development of common visual models.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Synthetic Environment Core (SE Core) program.	16.157	12.030	7.704	-	7.704
Articles:	0	0			
Description: Continue EMD phase contract activities for the SE Core program.					
FY 2011 Accomplishments:					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 582: <i>SYNTHETIC ENVIR CORE</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>SE Core continued providing terrain databases to programs and improving the STDGC to increase efficiencies and increasing production outputs. SE Core continued integration of virtual requirements (new Contemporary Operating Environment and IED behaviors) into OneSAF. SE Core stood up a virtual systems Architectural Management process that evaluates and consolidates virtual training requirements into common components to reduce redundancy and increase commonality.</p> <p>FY 2012 Plans: Provides terrain databases to an expanded number of programs in support of the Integrated Training Environment (ITE). Architectural Management continues evaluation of virtual training requirements to harmonize the requirements throughout the virtual training domain as well as the Constructive and Live training domains. This is to ensure interoperability within the ITE. Continues to provide OneSAF the consolidated virtual SAF requirements.</p> <p>FY 2013 Base Plans: Provides expansion of the production capability to meet the growing demand for synthetic terrain for training including constructive simulations. In addition, SE Core will oversee the development of the SAF behaviors for the Dismounted Soldier System. Efforts to improve interoperability across simulators and simulations continue.</p>					
<p>Title: Government Program Management for the Synthetic Environment Core (SE Core) program.</p> <p align="right">Articles:</p> <p>Description: Government Program Management for the SE Core program.</p> <p>FY 2011 Accomplishments: Provided program management, engineering and technical oversight, contract support, and test support (including travel for Subject Matter Experts) for development of SE Core.</p> <p>FY 2012 Plans: Provides program management, engineering and technical oversight, contract support, and test support (including travel for Subject Matter Experts) for development of SE Core.</p> <p>FY 2013 Base Plans: Provides program management, engineering and technical oversight, contract support, and test support (including travel for Subject Matter Experts) for development of SE Core.</p>	3.204 0	1.884 0	1.912	-	1.912
Accomplishments/Planned Programs Subtotals	19.361	13.914	9.616	-	9.616

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 582: <i>SYNTHETIC ENVIR CORE</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPA3, Appropriation NA0173: <i>OPA3, Appropriation NA0173</i> <i>Aviation Combined Arms Tactical Trainer</i>	25.974	9.413	10.977	1.000	11.977		9.322	13.452	15.425	Continuing	Continuing
• OPA3, Appropriation NA0170: <i>OPA3, Appropriation NA0170</i> <i>Close Combat Tactical Trainer (CCTT)</i>	84.279	13.290	19.984		19.984		26.324	31.365	30.893	Continuing	Continuing
• RDTE, Appropriation 654760: <i>RDTE, Appropriation 654760 One</i> <i>Semi-Automated Forces (OneSAF)</i>	11.132	11.678	11.720		11.720		11.835	12.234	12.437	Continuing	Continuing
• OMA, Appropriation, 121014000: <i>OMA, Appropriation 121014000,</i> <i>TBWG</i>		1.781	4.708		4.708		5.926	4.040	1.219	Continuing	Continuing

D. Acquisition Strategy

An extension to the Architecture & Integration (A&I) contract was awarded to Science Applications International Corp (SAIC) in 2Q09. A competitive, CPFF type contract for the development of SE Core Database Virtual Environment Development (DVED) project was awarded in FY06 to CAE with yearly options until FY11. Program re-competed both of these contracts into a single contract which was awarded in 4th QTR FY11 to SAIC.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 582: <i>SYNTHETIC ENVIR CORE</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Services	Various	Various:Various	3.622	-		-		-		-	0.000	3.622	3.622
Government Program Management Support	Various	PEO STRI:Orlando, FL	15.095	1.884		1.912		-		1.912	Continuing	Continuing	Continuing
Subtotal			18.717	1.884		1.912		-		1.912			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Development - Architecture and Integration	C/CPFF	SAIC:Orlando, FL	6.946	-		-		-		-	0.000	6.946	6.946
Technology Development - Architecture and Integration	C/CPFF	SAIC:Orlando, FL	50.785	-		-		-		-	0.000	50.785	50.785
Technology Development - Database Virtual Environment Development	C/CPFF	CAE, USA:Orlando, FL	56.179	-		-		-		-	0.000	56.179	56.179
Technology Development	C/CPFF	SAIC:Orlando, FL	-	12.030		7.704		-		7.704	Continuing	Continuing	Continuing
Subtotal			113.910	12.030		7.704		-		7.704			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Development - Test Support	Various	Test Community:Various	0.125	-		-		-		-	0.000	0.125	0.125
Subtotal			0.125	-		-		-		-	0.000	0.125	0.125

Remarks
Not Applicable

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>				PROJECT 582: <i>SYNTHETIC ENVIR CORE</i>				
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	132.752	13.914		9.616		-		9.616			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 582: <i>SYNTHETIC ENVIR CORE</i>
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FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

Common Virtual Environment Management Contract	
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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 582: <i>SYNTHETIC ENVIR CORE</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Common Virtual Environment Management Contract	4	2011	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>				PROJECT 585: <i>AVIATION COMBINED ARMS TACTICAL TRAINER</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
585: <i>AVIATION COMBINED ARMS TACTICAL TRAINER</i>	1.922	2.547	2.581	-	2.581	2.668	2.496	3.667	2.783	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Aviation Combined Arms Tactical Trainer (AVCATT) is an Army aviation training system for Active, Reserve and Army National Guard Components. A single suite of equipment consists of two mobile trailers housing six reconfigurable networked simulators that support the AH-64A/D, UH-60A/L, CH-47D, and OH-58D aircraft. Other AVCATT modules, such as the Non-Rated Crewmember Manned Module (NCM3, a sub-system of AVCATT), can be linked to this basic configuration, when and where needed, to support specific unit training requirements. Roleplayer, Semi-Automated Forces (SAF), and After Action Review (AAR) workstations are also provided as part of each suite. AVCATT is a fully mobile system, capable of using shore and generator power and is transportable worldwide. The AVCATT system permits aviation units to conduct collective task training on a real-time, virtual battlefield in a combined arms scenario by leveraging Synthetic Environment Core (SE Core) capabilities. The AVCATT is designed to provide realistic, high intensity, collective and combined arms training for aviation units. AVCATT supports the Aviation Combined Arms Training Strategy, Army Forces Generation (ARFORGEN), Overseas Contingency Operations (OCO), and Decisive Operations.

FY 2013 core funding of \$2.581 million will develop the capability for AVCATT to interoperate with real and simulated Army Battle Command Systems (ABCS) such as Blue Force Tracker (BFT), Force XXI Battle Command Brigade and Below (FBCB2), and Advanced Field Artillery Tactical Data Systems (AFATDs).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Aviation Combined Arms Tactical (AVCATT) program.	1.752	2.547	2.581	-	2.581
Articles:	0	0			
Description: Continue EMD phase contract activities for the AVCATT program.					
FY 2011 Accomplishments: Conducted a technology refresh of various components of AVCATT. Examples include Servo Control Modules, Battle Master Controller and After Action Review computers and various projectors.					
FY 2012 Plans: Conduct a technology refresh of AVCATT's Image Processor Display Generation (IPDG) systems, including design, development, and test of the new systems.					
FY 2013 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 585: <i>AVIATION COMBINED ARMS TACTICAL TRAINER</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Develop the capability to stimulate and be stimulated by Current Force virtual simulators and battle command systems through the use of the SE Core Gateway.					
Title: Government Program Management for AVCATT program. Description: Government Program Management for the AVCATT program. FY 2011 Accomplishments: Supported Government program management, engineering, technical, contract, and test support for AVCATT technology upgrades.	0.170 0	-	-	-	-
Articles:					
Accomplishments/Planned Programs Subtotals	1.922	2.547	2.581	-	2.581

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• OPA3: OPA3, Appropriation NA0173 Aviation Combined Arms Tactical Trainer	25.974	9.413	10.977	1.000	11.977		9.322	13.452	15.425	Continuing	Continuing

D. Acquisition Strategy
Small Business Set aside for technology refresh efforts.

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 585: <i>AVIATION COMBINED ARMS TACTICAL TRAINER</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017							
	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				
Required Interoperability with battle command systems and virtual simulators																																
Technology refresh of IPDG Systems																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>	PROJECT 585: <i>AVIATION COMBINED ARMS TACTICAL TRAINER</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Required Interoperability with battle command systems and virtual simulators	2	2013	4	2017
Technology refresh of IPDG Systems	1	2012	1	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	-	214.270	-	214.270	45.903	45.431	45.786	45.218	Continuing	Continuing
DU8: <i>SYSTEMS UNDER EVALUATION (SUE) ANALYSIS AND INTEG</i>	-	-	45.489	-	45.489	-	-	-	-	Continuing	Continuing
DU9: <i>SYSTEM OF SYSTEMS ENGINEERING</i>	-	-	10.109	-	10.109	-	-	-	-	Continuing	Continuing
DV1: <i>BCT EQUIPPING INTEGRATION AND EXPERIMENTATION</i>	-	-	158.672	-	158.672	45.903	45.431	45.786	45.218	Continuing	Continuing

Note

Based upon Congressional language in the FY2012 Department of Defense Appropriation Act, this project was created to support the Army's Brigade Analysis, Integration and Evaluation mission. The FY13 funds and beyond for Project DV1 were realigned from PE 0604561A, Project FC2 (FY13-FY17), and the funds for Projects DU8 and DU9 were realigned from the PE 0604818A, Project C34.

A. Mission Description and Budget Item Justification

This Program Element is comprised of three projects; System Under Evaluation Analysis and Integration (Project DU8), Brigade Combat Team (BCT) Equipment Integration and Experimentation (Project DV1), and System of Systems Engineering (Project DU9). Project DU8; Systems Under Evaluation Analysis and Integration, provides funding for the Industry and government programs that meet or exceed known technological gaps and funds their platform and network integration into the Army's Network Integration Evaluation (NIE) Events. Project DV1; BCT Equipment Integration and Experimentation, provides funds for development of the NIE architecture, systems integration engineering, A-Kit development, coordination of the events, risk reduction activities, and troubleshooting and fixing integration and network problems in support of the Network Integration Evaluation events. Project DU9; System of Systems Engineering, provides for development of the Army's standards and validation and verification of systems against these standards. The software will result in a common operating environment and the total architecture will support the NIE by becoming the framework for the detail analysis for NIE. The FY13 funding supports all of the efforts to plan and execute NIE 13.2 and 14.1. The specific evaluation requirements for these NIEs will be derived from the gaps identified by the users in the Afghanistan Theater and the lessons learned from NIEs 12.2 and 13.1

In FY11 the Army initiated the new paradigm for SoS Engineering and Brigade and Network Integration, called the Agile Process. To support this paradigm, the Army stood down PEO I on 1 October 2011 and established System of Systems Integration Directorate (SoSI), which is ASAALT's lead for all aspects of the Army Agile Network Integration process. The SoSI coordinates, synchronizes, and integrates existing and emerging technologies into the tactical network at Ft Bliss, TX and tests this new integrated brigade capability at White Sands Missile Range, NM. Operational test requirements for unique systems / programs are included within the brigade testing to minimize the cost of a formal operational test for each system, thus eliminating duplicative infrastructure and test costs. As part of the Agile process, the Army

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>
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has also formed the Brigade Modernization Command (BMC) at Ft Bliss, with a unit dedicated solely to testing and evaluating Capability Packages and the associated integrated Network. The Army has also created a TRIAD consisting of the SoSI, BMC, and Army Test & Evaluation Command (ATEC) to manage the Agile process.

The Agile Process consists of the following phases which are coordinated and executed by SoSI, BMC and ATEC. In Phase 0 Training and Doctrine Command (TRADOC) will define near-term gaps in current operational capabilities using existing Operational Needs Statements and relevant assessments from ongoing and past analyses. This analysis will be the basis for requirement sets for future Capability Packages. Network test and evaluation will focus on improving and integrating emerging and existing technologies to minimize existing operational gaps. During Phase I the Director, SoS Integration, solicits for potential solutions from existing Army programs, tech base programs, and industry. Also during this phase ASAALT, working through the SoSI team, obtains buy-in from stakeholders, funding and support, establishes initial objectives, solidifies architecture objectives, and establishes the viable candidate list for Network Integration Evaluation (NIE). During Phase II, ASAALT, through the SoSI team, compiles the list of potential solutions that could meet the identified gaps and begins to develop the integration and testing concepts for the next capability package. Phase III includes the coordinated efforts between BMC, ATEC and SoSI to finalize the brigade architecture, integration and test plans, training materials and combat mission evaluations. Phase III also includes the initial integration phase where industry and DOD hardware and software are integrated and initially evaluated for follow-on consideration at a government integration and test facility (executed at Aberdeen Proving Ground (APG)). The results of this initial evaluation will determine which industry and DOD System Under Evaluation (SUE) will continue in the NIE process. During Phase IV, SoSI develops detailed plans and executes the integration of all hardware and software into the brigade network. The integration is validated and verified through the NIE process. And in Phase V, SoSI executes the in-depth NIE. The results of the NIE will address and answer senior Army leadership's questions about force makeup and effectiveness and provides Army leadership recommendations for improving operational requirements and enhancing technical specifications. As a result of Phase V, during Phase VI, the Army will determine which systems to procure and field to improve the Army's Network.

FY13 w

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	214.270	-	214.270
Total Adjustments	-	-	214.270	-	214.270
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-	-	214.270	-	214.270

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>				PROJECT DU8: <i>SYSTEMS UNDER EVALUATION (SUE) ANALYSIS AND INTEG</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
DU8: <i>SYSTEMS UNDER EVALUATION (SUE) ANALYSIS AND INTEG</i>	-	-	45.489	-	45.489	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

This project was created to support the Army's Brigade Analysis, Integration and Evaluation mission.

A. Mission Description and Budget Item Justification

This project supports the integration of both industry and DOD emerging and existing technologies into the current Army force structure. It includes all integration and test efforts for the Network Integration Evaluation (NIE)s 13.2 and 14.1 events, which includes the Network Integration, Software loading exercises and checkout (LOADEX), comprehensive communication exercises (COMMEX) and network setup and initial trials (PILOT), culminating in the Army's NIE. The specific evaluation requirements for these NIEs will be derived from the gaps identified by the users in the Afghanistan Theater and the lessons learned from NIEs 12.2 and 13.1. Risk reduction testing is conducted at Aberdeen Proving Grounds (APG) to identify potential system deficiencies prior to NIE entry.

In FY 2013, the Network Integration Evaluation Event continues to integrate and mature the Army's tactical network and is a key element of the Army's emerging Network Strategy. The Agile Process is designed to reduce the acquisition timeline by testing and evaluating both industry and DOD existing and emerging technologies during the NIEs. Each NIE is specifically designed to test and evaluate products that have the potential to fill one or more of Army's current gaps. Each of the systems that participate in a NIE event is identified as either a Systems Under Evaluation (SUE) or a System Under Test (SUT). A SUE is defined as a System that has gone through the Agile Process Candidate Evaluation Process and been approved by a GOSC, G-3/5/7, and BMC to participate in the NIE and receive a Doctrine, Organization, Training, Material, Leadership, Personnel, & Facilities (DOTMLPF) assessment. The system must meet all delivery, integration, and training requirements to participate in the event; where as a SUT is a system that has been approved by the Test Schedule and Review Committee (TSARC) to undergo a formal operational test during the Network Integration Evaluation. The system will be fully instrumented to collect test data for this operational test. The system must meet all delivery, integration, and training requirements to participate in the event. One of the many objectives of the NIE is to conduct parallel user tests and experiments to minimize costs by sharing test assets and people.

For industry SUEs, this project will integrate the industry SUE into the Network and onto a platform if required. It will also purchase any additional hardware and support above and beyond the contractors proposed support. For Government SUEs, this project funds integration support that consists of FSRs to support integration and the test. If the NIE program requires additional prototypes above and beyond the program of record it will also purchase this equipment. This project also funds keeping the Network baseline up to date so that integration is always into the baseline network.

FY 2013 will continue the NIE gaps and evaluation process. For example, during NIE 12.2 there were 3 SUTs and 41 SUEs to be evaluated against one of the Army's five NIE 12.2 gaps. The NIE 12.2 gaps are: (1) Multichannel Radio, (2) Low-Cost-Low-SWaP Tactical Cross Domain Solution, (3) Small Form Factor, Modular Transit

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DU8: <i>SYSTEMS UNDER EVALUATION (SUE) ANALYSIS AND INTEG</i>
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Case Based Company Command Post, (4) Improved Operational Energy, and (5) Tactical Router. The number of systems to be evaluated during NIE 13.1 is estimated to be between 40 and 50 systems. These systems will be evaluated against one of the Army's nine gaps identified for NIE 13.1. The NIE 13.1 gaps are: (1) Multi-Channel Tactical Radio, (2) Mission Command on the Move (MCOTM), (3) Low-Cost-Low-SWaP Tactical Cross Domain Solution, (4) Joint Participation Capability (US & Allies), (5) Aviation Extension, (6) Small Form Factor, Modular Transit Case SATCOM Terminal and Baseband, (7) Mission Command In-Garrison Training, (8)- Improved Operational Energy, and (9) Integrate Capability Set configuration items into heavy platforms.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013
<p>Title: Systems Under Evaluation (SUE) Integrations</p> <p>Description: Funding is provided for the following effort: To support integration of both industry and DOD emerging and existing technologies into the current Army force structure. This includes all integration support and test support for 13.2 and 14.1 SUEs.</p> <p>FY 2013 Plans: Provides funding to support integration and evaluation, twice a year, of approximately 40 - 50 industry and government technologies which are being selected as Systems Under Evaluation (SUE) for participation into the Army's Network Integration Evaluation (NIE). These funds cover the NIE participant_s (Emerging and existing technologies, PMs and contractors) costs for travel, and shipment of equipment, Contractor Field Service Representatives (CFSRs) and Government Subject Matter Experts (GSMEs) required to support integration activities, integration A-kit development, and the purchase of additional prototypes when needed to effectively complete detailed evaluations of the complete network architecture. Includes costs for development and fabrication of integration hardware and software. The participating units then deploy to the tactical training/evaluation area, White Sands Missile Range (WSMR) to complete a comprehensive rehearsal (4 weeks) in preparation for the detailed Network Integration Evaluation (2 weeks) event.</p>	-	-	45.489
Accomplishments/Planned Programs Subtotals	-	-	45.489

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

During the planning of NIE 11.1 through NIE 13.1 the government will focus on identifying and evaluating systems against the Army's known gaps and will utilize a Sources Sought solicitation to invite industry's participation in each NIE, which results in industry's participation at No Cost to the government. Beginning with NIE 13.2 the government will continue to focus on identifying and evaluating against the Army's identified gaps. For FY 2013 and out the government will use one of two acquisition strategies. First the government will issue a sources sought request to fill the known gaps. The government will then use either an existing government contract or an Request for Proposal (RFP) as the means of solicitation for industry's participation in the NIE, and will also include the participant's production options.

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DU8: <i>SYSTEMS UNDER EVALUATION (SUE) ANALYSIS AND INTEG</i>
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	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
NIE 13.2 Planning - Execution																												
NIE 13.2 Industry Day																												
NIE 13.2 Decision Point 1																												
NIE 13.2 Decision Point 2																												
NIE 13.2 Lab Integration / Testing																												
NIE 13.2 Candidate Solution Integration																												
NIE 13.2 LoadEx / ValEx																												
NIE 13.2 CommEx (1 week)																												
NIE 13.2 Pilot (5 days)																												
NIE 13.2 Event																												
NIE 13.2 Event Analysis & Summary																												
NIE 14.1 Planning - Execution																												
NIE 14.1 Industry Day																												
NIE 14.1 Decision Point 1																												
NIE 14.1 Decision Point 2																												
NIE 14.1 Lab Integration / Testing																												
NIE 14.1 Candidate Solution Integration																												
NIE 14.1 LoadEx / ValEx																												
NIE 14.1 CommEx (1 week)																												
NIE 14.1 Pilot (1 week)																												
NIE 14.1 Event																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DU8: <i>SYSTEMS UNDER EVALUATION (SUE) ANALYSIS AND INTEG</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 13.2 Planning - Execution	2	2012	3	2013
NIE 13.2 Industry Day	3	2012	3	2012
NIE 13.2 Decision Point 1	4	2012	4	2012
NIE 13.2 Decision Point 2	4	2012	4	2012
NIE 13.2 Lab Integration / Testing	2	2013	3	2013
NIE 13.2 Candidate Solution Integration	2	2013	2	2013
NIE 13.2 LoadEx / ValEx	2	2013	3	2013
NIE 13.2 CommEx (1 week)	3	2013	3	2013
NIE 13.2 Pilot (5 days)	3	2013	3	2013
NIE 13.2 Event	3	2013	3	2013
NIE 13.2 Event Analysis & Summary	3	2013	4	2013
NIE 14.1 Planning - Execution	3	2012	1	2014
NIE 14.1 Industry Day	1	2013	1	2013
NIE 14.1 Decision Point 1	1	2013	1	2013
NIE 14.1 Decision Point 2	2	2013	2	2013
NIE 14.1 Lab Integration / Testing	3	2013	4	2013
NIE 14.1 Candidate Solution Integration	3	2013	4	2013
NIE 14.1 LoadEx / ValEx	4	2013	4	2013
NIE 14.1 CommEx (1 week)	4	2013	1	2014
NIE 14.1 Pilot (1 week)	1	2014	1	2014
NIE 14.1 Event	1	2014	1	2014

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>				PROJECT DU9: <i>SYSTEM OF SYSTEMS ENGINEERING</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
DU9: <i>SYSTEM OF SYSTEMS ENGINEERING</i>	-	-	10.109	-	10.109	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

FY 2013 funding provides for technical support to oversee the execution of the COE Implementation plan, COE Orchestration, Governance, Cross-Cutting Capabilities Definition, Implementation Plan Updates, Software Build (SWB)/COE Configuration Control Board (CCB) and Test Support transition, Integrated Master Schedule, Government oversight of the Army's Strategic Software Improvement Program (ASSIP), Coordination with Army Staff, Technical Reference Model, Metrics for assessing compliance, Technical Advisory Board (TAB), Chief Engineer (CE) compliance, COE assessment criteria, Assess systems during the System Under Evaluation (SUE) Technical Interface Meeting (TIM), System software configuration baseline data collection, System software configuration baseline updates, Control Point/Interface Definition and Agreements, Tactical Network, Ops/Intel Convergence, Transport Convergence, Network Synchronization Working Group, Joint Interoperability & Mission Thread Architecture Office of Secretary Defense (OSD) Director Defense Research and Engineering (DDR&E), Integrated Base Defense, Basing and Basing Computing/Communications Analysis, Host Based Security System (HBSS), GNEC Implementation Plan, Radio Procurement Requests, SoS Engineering Construct for the Network, Organizing the SoS Engineering trade space for Platforms, Standards for the Platforms (VICTORY & FACE), Size Weight and Power (SWAP) working group, Software Blocking (SW), NIE Gaps, Candidate Assessment for Upcoming NIE, and Technologies assessment, Systems Engineering Plan (SEP) policy, Program Protection Plan (PPP) reviews, Reliability policy technical support, Standards & Speciation adoption across ASA(ALT), (OSD/Joint), Development Planning model, IBD, Basing Pilot). It also provides for the development and execution of COE integration policies and procedures, the development and implementation of backwards capability testing, integration checklists and their verification, test hardware development and implementation support. The development and effective utilization of emulator and integration tools. Provides for COE/CE architecture validation, design baseline validation, and the verification of COE reference architecture compliance. The verification of COE critical enabler implementation, conducting risk assessments and analysis, accreditation and certification process refinement, and verification of technical test harness and tool development. Provides for the accreditation, certification and refinement of test plans and events.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013
Title: Army Systems Engineering & (COE) Development/Validation to Provide Technical Support for the Execution of the Army System Engineering and Architecture in COE Implementation	-	-	10.109
Description: To provide technical support for the execution of the Army's Systems Engineer Architecture for COE.			
FY 2013 Plans: The funds provide: Technical support to oversee the execution of the COE Implementation plan, COE Orchestration, Governance, Cross-Cutting Capabilities Definition, Implementation Plan Updates, Software Build (SWB)/COE Configuration Control Board (CCB) and Test Support transition, Integrated Master Schedule, Government oversight of the Army's Strategic Software Improvement Program (ASSIP), Coordination with Army Staff, Technical Reference Model, Metrics for assessing compliance,			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DU9: <i>SYSTEM OF SYSTEMS ENGINEERING</i>
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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013
Technical Advisory Board (TAB), Chief Engineer (CE) compliance, COE assessment criteria, Assess systems during the System Under Evaluation (SUE) Technical Interface Meeting (TIM), System software configuration baseline data collection, System software configuration baseline updates, Control Point/Interface Definition and Agreements, Afghan Mission Network, Ops/ Intel Convergence , Transport Convergence, Network Synchronization Working Group , Joint Interoperability & Mission Thread Architecture Office of Secretary Defense (OSD) Director Defense Research and Engineering (DDR&E), Integrated Base Defense, Basing and Basing Computing/Communications Analysis, Host Based Security System (HBSS), GNEC Implementation Plan, Radio Procurement Requests, Organizing & Synchronizing of the Architecture space, Establish Technical foundation for Army Network Architecture, Network Architecture Analysis for BCT formations, SoS Engineering Construct for the Network, Organizing the SoS Engineering trade space for Platforms, Standards for the Platforms (VICTORY & FACE), Size Weight and Power (SWAP) working group, Software Blocking (SW), NIE Gaps, Candidate Assessment for Upcoming NIE, and Technologies assessment, Systems Engineering Plan (SEP) policy, Program Protection Plan (PPP) reviews, Reliability policy technical support, Standards & Speciation adoption across ASA(ALT), (OSD/Joint), Development Planning model, IBD, Basing Pilot). It also provides for the development and execution of COE integration policies and procedures, the development and implementation of backwards capability testing, integration checklists and their verification, test hardware development and implementation support. The development and effective utilization of emulator and integration tools. Provides for COE/CE architecture validation, design baseline validation, and the verification of COE reference architecture compliance. The verification of COE critical enabler implementation, conducting risk assessments and analysis, accreditation and certification process refinement, and verification of technical test harness and tool development. Provides for the accreditation, certification and refinement of test plans and events.			
Accomplishments/Planned Programs Subtotals	-	-	10.109

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• FC2: <i>FCS System of Systems Eng & Program FC2</i>	471.559	298.589								0.000	770.148
• DV1: <i>BCT Equipping Integration and Exper DV1</i>			157.672		157.672		45.431	45.786	45.218	0.000	340.010
• DU8: <i>SUE Analysis and Integration DU8</i>			45.489		45.489					0.000	45.489

D. Acquisition Strategy

N/A

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DU9: <i>SYSTEM OF SYSTEMS ENGINEERING</i>

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.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DU9: <i>SYSTEM OF SYSTEMS ENGINEERING</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Execution of the COE Mission																												
Execution of COE Implementation Plan																												
Fielding of COE Version 1.0																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DU9: <i>SYSTEM OF SYSTEMS ENGINEERING</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Execution of the COE Mission	1	2013	4	2013
Execution of COE Implementation Plan	1	2013	3	2013
Fielding of COE Version 1.0	4	2013	4	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>				PROJECT DV1: <i>BCT EQUIPPING INTEGRATION AND EXPERIMENTATION</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
DV1: <i>BCT EQUIPPING INTEGRATION AND EXPERIMENTATION</i>	-	-	158.672	-	158.672	45.903	45.431	45.786	45.218	Continuing	Continuing
Quantity of RDT&E Articles											

Note

This project (DV1) was created to support the Army's Brigade Analysis, Integration and Evaluation mission.

A. Mission Description and Budget Item Justification

This project includes government and contractor efforts to integrate and validate that the Army is fielding platforms, components and software that are integrated together to provide increased capabilities for the soldier that are supportable and trainable. This project includes efforts associated with designing the Army's integrated network and associated architecture, developing the infrastructure and test plans, conducting the integration and risk reduction activities, evaluating the potential solutions, and determining the final solution set for the next Capability Package. It includes all integration and test efforts for the Network Integration Evaluation (NIE)s 13.2 and 14.1 events, which include Network Integration , Software loading exercises and checkout (LOADEX), comprehensive communication exercises (COMMEX), network setup and initial trails (PILOT), culminating in the Army's and Network Integration Evaluation (NIE). The specific evaluation requirements for these NIEs will be derived from the gaps identified by the users in the Afghanistan theater and the lessons learned from NIEs 12.2 and 13.1.

The Agile Process consists of the following phases which are coordinated and executed by the System of Systems Integration Directorate (SoSI), BMC and ATEC. In Phase 0 Training and Doctrine Command (TRADOC) will define near-term gaps in current operational capabilities using existing Operational Needs Statements and relevant assessments from ongoing and past analyses. This analysis will be the bases for requirement sets for future Capability Package. Network test and evaluation will focus on improving and integrating emerging and existing technologies to minimize existing operational gaps. During Phase I the System of System Integration Directorate solicits potential solutions from existing Army programs, tech base programs, and industry. Also during this phase ASAALT, through the SoSI, obtains buy-in from stakeholders, funding and support, establishes initial objectives, solidifies architecture objectives, and establishes the viable candidate list for Network Integration Evaluation. During Phase II, ASAALT through the SoSI compiles the list of potential solutions that could meet the identified gaps and begins to develop the integration and testing concepts for the next capability package. Phase III includes the coordinated efforts between BMC, ATEC and SoSI to finalize the brigade architecture, integration and test plans, training materials and combat mission evaluations. Phase III also includes the initial integration phase where industry and DOD hardware and software are integrated and initially evaluated for follow-on consideration at a government integration and test facility (currently planned for Aberdeen Proving Ground (APG)). The results of this initial evaluation will determine which industry and DOD SUEs will continue in the NIE process. During Phase IV, SoSI details plans and executes the integration of all hardware and software into the brigade network. The integration is validated and verified through the NIE process. And in Phase V, SoSI executes the in-depth Network Integration Evaluation (NIE). The results of the NIE will address and answer senior Army leadership s questions about force makeup and effectiveness and provides Army leadership recommendations for improving operational requirements and enhancing technical specifications. As a result of Phase V, during Phase VI , the Army will determine which systems to procure and field to improve the Army?s Network.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DV1: <i>BCT EQUIPPING INTEGRATION AND EXPERIMENTATION</i>
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This project includes the following government efforts: System of system architecture and design standards for the NIE, BCT Integration to support the NIE (hardware and software), A Kit development and fabrication to support Network Integration on to platforms, integration of program of record, and non-program of record equipment and systems (both hardware and software) into a single synchronized network, BCT simulation to determine solution sets to potentially fill gaps, BCT experimentation and testing to validate and verify the increased capability for the soldier, BCT Synchronized fielding (logistics and training). Based on feedback from integration and testing, provides input and changes to both operational requirements and technical specification for improved operational capabilities. This project includes support to other DOD agencies for joint programs and collaboration efforts with SoSI and Capability Package portfolio integration. The government effort includes cost for salaries, travel, overtime, training, supplies, facilities, and IT support.

FY 2013 will continue the NIE gaps and evaluation process. For example, during NIE 12.2 there are 3 SUTs and 41 SUEs scheduled to be evaluated against one of the Army's five NIE 12.2 gaps. The NIE 12.2 gaps are: (1) Multichannel Radio, (2) Low-Cost-Low-SWaP Tactical Cross Domain Solution, (3) Small Form Factor, Modular Transit Case Based Company Command Post, (4) Improved Operational Energy, and (5) Tactical Router. The number of systems to be evaluated during NIE 13.1 is estimated to be between 40 and 50 systems. These systems will be evaluated against one of the Army's nine gaps identified for NIE 13.1. The NIE 31.1 gaps are: (1) Multi-Channel Tactical Radio, (2) Mission Command on the Move (MCOTM), (3) Low-Cost-Low-SWaP Tactical Cross Domain Solution, (4) Joint Participation Capability (US & Allies), (5) Aviation Extension, (6) Small Form Factor, Modular Transit Case SATCOM Terminal and Baseband, (7) Mission Command In-Garrison Training, (8) Improved Operational Energy, and (9) Integrate Capability Set configuration items into heavy platforms.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: Test Experimentation</p> <p>Description: Funding is provided for the following effort:</p> <p>FY 2013 Plans: Plan and conduct detailed experiments, tests and evaluations of potential Network, Software and Hardware systems for procurement and integration into the Army's Warfighter system. Complete test planning, coordination of requirements, assets planning, range planning and soldier planning. Conduct test planning and management which includes, conduct coordination of requirements with Army Evaluation Command (AEC), Operational Test Center (OTC), and Developmental Test Command (DTC). This coordination includes; development and procurement of modeling and simulation tools, instrumentation for data collection, facilities required to store and maintain equipment, facilities required to integrate capabilities, other test equipment, REDFORCE systems. Conduct experimentation, tests, and evaluation by coordinating and procuring range resources to include range time, range personnel, test engineering support, operators and subject matter experts on systems under evaluation. Includes costs of management of the test/experiment and support all demonstrations experiments and tests. Includes costs for distributed networking capability (i.e. DREN, I/O Range, circuits, etc) and other electronic infrastructure data transfer medias between APG, EPG, FT Bliss and White Sands Missile Range. Conduct coordination with AEC on the development of System Evaluation Plans (SEP) and Operational Milestone Assessment Reports (OMAR) and maintain all data bases of evaluation analysis.</p>	-	-	58.885
<p>Title: Integration Efforts: System of Systems Integraton Directorate (SoSI)</p>	-	-	66.223

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DV1: <i>BCT EQUIPPING INTEGRATION AND EXPERIMENTATION</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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Description: Provides for SoSI staff and facilities that supports the following three main operations: Capability Package Future: planning for future NIE events. Capability Package Current: planning and execution of current NIE events. Headquarters management and oversight of the complete Agile process.

FY 2013 Plans:

Conduct planning with government and contract personnel to develop the overarching plans for Network Integration Evaluation (NIE). Complete Capability Package (CP) development which includes; defining what is affordable and defining what can be realistically accomplished within the Network Integration Evaluation (NIE) window. Conduct requirements traces across the NIE portfolio by conducting current requirements analysis, identifying gaps and overlaps, and identifying solution sets. Conduct Network Analysis for NIE by completing initial and high level fidelity reviews. In support of the NIE; conduct sources sought procedures, Request for Proposal (RFP), complete evaluation of submissions, plan vignettes, complete architecture analysis, develop and publish what systems will participate in NIE as either a System Under Test (SUT) or a System Under Evaluation (SUE) and define what the Tech Base capabilities will be will also be included in the evaluation. Conduct data and configuration management. Conduct vehicle integration and Size, Weight, and Power (SWaP) analysis in support of NIE. Complete development of standardization of hardware and software to optimize integration and interoperability. Develop Network Operations (NETOPS) by defining communications settings, interfaces, and configuration which includes; Traffic Engineering (Shared Networks) for Software Services & Communications in order to maximize the use of bandwidth. Develop and manage an Integrated Master Schedule (IMS). Develop budget and manage budget execution. Develop Knowledge Management plans and procedures in to the NIE. Conduct security planning and technology services. Conduct logistics development and planning in support of the NIE. Coordinate with ASAALT as they assign PMs to be Non-Program of Record (POR) SUE sponsors and as they determine which POR/SUEs are in each NIE. Conduct daily operations and the execution of the NIE plan by; maintaining a daily battle rhythm, synchronized calendar, conducting operational meetings, developing and submitting reports, tracking and maintaining accountability of all assets and the operational scheduling of assets and personnel. Develop brigade level architecture from the top level plan provided by CP Future which includes; the development of detailed network designs for the Systems Under Test and Systems Under Evaluation which are assigned to the maneuver brigades during the Network Integration Evaluation, conduct detailed planning and development of the architecture and vignettes, and information assurance. Establish metrics and measures across the SUTs/SUEs, and identify and implement tools, data points and data collection measures for the NIE. Complete analysis and assessment of integrated experimental systems to determine optimal brigade configuration and best solutions to fill the known requirements gaps. Conduct Information Assurance (IA) which includes; plan/execute C4ISR/vehicle/platform integration, system checkout, and the coordination of system support between training and logistics assets. Coordinate Contractor Field Support Representatives (CFSRs) and Government Subject Matter Experts (GSME), to integrate hardware and software in support of the NIE events. Conducted infrastructure and facilities management which includes; establish/maintain & track communications during NIE within a 7,600 square mile footprint, maintain IT and equipment

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>		PROJECT DV1: <i>BCT EQUIPPING INTEGRATION AND EXPERIMENTATION</i>		
B. Accomplishments/Planned Programs (\$ in Millions)						
support within buildings disbursed over 7,600 square miles. Setup and maintain security access for over an estimated 7,000 soldiers, government, contracted and industry personnel during the NIE. Conduct international, integration and interoperability procedures. Conduct Information Assurance (AI), accreditation and certification which includes; test but verify, coordinating for DAA approvals, and all technology services. Conduct After Action Review (AAR) to provide Army leadership recommendation for improving operational requirements and enhancing technical specifications. Conduct command and control and staff support for the complete agile process to include: Program Management, Administrative, Tech Services, IT, Graphics, Defense Travel System (DTS) support, Facilities Execution, Knowledge Management Execution, Security Execution, Business Management, and Acquisition Management. Develop and support budget submittals and all program inquiries. Conduct personnel management support for the SoSI. Coordinate all higher headquarters, congressional, and media inquiries, questions and audits.				FY 2011	FY 2012	FY 2013
<p>Title: Architecture Development and System Engineering</p> <p>Description: Funding is provided for the following effort: Provides government and contractor support staff to System of Systems Integration Director (SoSI) to support their technological specialty in completing the Agile Process, NIE Architecture, NIE System Engineering, and NIE Systems Integration.</p> <p>FY 2013 Plans: Subject Matter Expertise from other Army PEOs and PMs that support SoSI in conducting the following: Assists in developing and defining what is affordable and can be realistically accomplished within the integration and test NIE window to support future Capability Sets. Conduct requirements traces across the various Brigade Combat Team (BCT) portfolios by conducting current requirements analysis, identifying gaps and overlaps, and identifying solution sets. In support of the Agile processes, participate in sources sought procedures, completing evaluation of submissions, planning vignettes, and completing architecture analysis. Assists in the development of the Network Operations (NETOPS) by defining communications settings, interfaces, and configuration which includes; Traffic Engineering (Shared Networks) for Software Services & Communications in order to maximize the use of bandwidth. Support Information Assurance (IA) coordination. Participates in System Under Test/System Under Evaluation (SUT/SUE) network integration assessments and analysis for NIE. Support the development of the brigade level network architecture for the NIE events. Support the detailed planning of the architecture and vignettes, and information assurance plan. Support the establishment of metrics and measures across the SUTs/SUEs, and identify and implement tools, data points and data collection measures for the NIE. Assist in integrating hardware and software from different systems into existing platforms. Support the development of test tools and instrumentation to support data analysis, Army force structure and recommendations. Support Information Assurance which includes; plan/execute, Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance, (C4ISR)/vehicle/platform integration, system checkout, and the coordination of system support between training and logistics assets. Coordinate Contractor Field Support Representatives (CFSRs) and Government Subject Matter Experts (GSME), to integrate hardware and software in support of the NIE events. Conduct Information Assurance accreditation and certification which includes; test but verify, coordinating for Designated</p>				-	-	15.604

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DV1: <i>BCT EQUIPPING INTEGRATION AND EXPERIMENTATION</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Approving Authority (DAA) approvals, and all technology services. Apply lessons learned from the previous test cycle to improve tools, processes and procedures, while informing the Requirements, Budgeting and Acquisition processes.			
<p>Title: Infastructure</p> <p>Description: Provides for Infrastructure, (facilities, Information Technology (IT) support, computers, Black Berries, program IA, etc.) at all SOSI locations.</p> <p>FY 2013 Plans: Provides for setup, utilities, furniture, equipment and maintenance, of all facilities at Fort Bliss TX, (FTBX), White Sands Missile Range NM (WSMR) , Warren MI, Aberdeen Proving Ground, MD (APG), and Washington Capital Region. Includes lease and support maintenance of Government Service Administration (GSA)/Government Furnished Equipment (GFX) vehicles that support the /NIE mission at FTBX/WSMR Purchase or lease, integrate, and maintain telecommunications, routers, network management software, blackberries and PDAs, computers, Antennas, display screens, radios, and associated mounting hardware and cables to support NIE mission. Purchases and integrates computer software to support scheduling, Agile Request For Information (RFI) selection and evaluation process, budget process, integration analysis, modeling and simulation, network analysis, data collection, and analyzing test results. Includes costs of facilities required to store/maintain/integrate capabilities on to military platforms.</p>	-	-	17.960
Accomplishments/Planned Programs Subtotals	-	-	158.672

C. Other Program Funding Summary (\$ in Millions)			FY 2013	FY 2013	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Cost To	Total Cost
Line Item	FY 2011	FY 2012	Base	OCO	Total					Complete	
• FC2: <i>FCS System of System Engineering & Program Management FC2</i>	471.559	298.589								0.000	770.148
• DU8: <i>Systems Under Evaluation (SUE) Analysis, and Integration DU8</i>			45.489		45.489					0.000	45.489
• DU9: <i>System of Systems Engineering DU9</i>			10.109		10.109					0.000	10.109

D. Acquisition Strategy
 During the planning of NIE 11.1 through NIE 13.1 the government will focus on identifying and evaluating systems against the Army's known gaps and will utilize a Sources Sought solicitation to invite industry's participation in each NIE, which results in industry's participation at No Cost to the government. Beginning with NIE 13.2 the government will continue to focus on identifying and evaluating against the Army's identified gaps. For FY13 and out the government will use one of two acquisition

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	DV1: <i>BCT EQUIPPING INTEGRATION AND EXPERIMENTATION</i>

strategies. First the government will issue a sources sought request to fill the known gaps. The government will then use either an existing government contract or an Request for Proposal (RFP) as the means of solicitation for industry's participation in the NIE, and will also include the participant's production options.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DV1: <i>BCT EQUIPPING INTEGRATION AND EXPERIMENTATION</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integration - Dir SoS Integration	MIPR	SOSI:Fort Bliss, TX: WSMR, NM: and SOSI Warren, MI	-	-		66.223		-		66.223	0.000	66.223	0.000
Integration - Non Dir of SoS Integration, PEOs and PMs	MIPR	Subject Matter Experts various PEOs, PMs:various TBD	-	-		15.604		-		15.604	0.000	15.604	0.000
Subtotal			-	-		81.827		-		81.827	0.000	81.827	0.000

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Infrastructure Support	Allot	SOSI, FTBx, WSMR, APG:various	-	-		17.960		-		17.960	0.000	17.960	0.000
Subtotal			-	-		17.960		-		17.960	0.000	17.960	0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government System Test & Evaluation	MIPR	SOSI efforts at Bliss and WSMR:Ft. Bliss TX and WSMR, NM	-	-		58.885		-		58.885	0.000	58.885	0.000
Subtotal			-	-		58.885		-		58.885	0.000	58.885	0.000

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	-		158.672		-		158.672	0.000	158.672	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DV1: <i>BCT EQUIPPING INTEGRATION AND EXPERIMENTATION</i>
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	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
NIE 13.2 Planning - Execution					■	■	■	■																				
NIE 13.2 Industry Day							■																					
NIE 13.2 Decision Point 1								■																				
NIE 13.2 Decision Point 2								■																				
NIE 13.2 Lab Integration / Testing											■	■																
NIE 13.2 Candidate Solution Integration											■																	
NIE 13.2 LoadEx / ValEx											■	■																
NIE 13.2 CommEx (1 week)												■																
NIE 13.2 Pilot (5 days)												■																
NIE 13.2 Event												■																
NIE 13.2 Event Analysis & Summary												■	■															
NIE 14.1 Planning - Execution							■	■	■	■	■	■																
NIE 14.1 Industry Day								■																				
NIE 14.1 Decision Point 1								■																				
NIE 14.1 Decision Point 2											■																	
NIE 14.1 Lab Integration / Testing											■	■																
NIE 14.1 Candidate Solution Integration											■	■																
NIE 14.1 LoadEx / ValEx												■																
NIE 14.1 CommEx (1 week)													■	■														
NIE 14.1 Pilot (1 week)															■													
NIE 14.1 Event															■													

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DV1: <i>BCT EQUIPPING INTEGRATION AND EXPERIMENTATION</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 13.2 Planning - Execution	2	2012	3	2013
NIE 13.2 Industry Day	3	2012	3	2012
NIE 13.2 Decision Point 1	4	2012	4	2012
NIE 13.2 Decision Point 2	4	2012	4	2012
NIE 13.2 Lab Integration / Testing	2	2013	3	2013
NIE 13.2 Candidate Solution Integration	2	2013	2	2013
NIE 13.2 LoadEx / ValEx	2	2013	3	2013
NIE 13.2 CommEx (1 week)	3	2013	3	2013
NIE 13.2 Pilot (5 days)	3	2013	3	2013
NIE 13.2 Event	3	2013	3	2013
NIE 13.2 Event Analysis & Summary	3	2013	4	2013
NIE 14.1 Planning - Execution	3	2012	1	2014
NIE 14.1 Industry Day	1	2013	1	2013
NIE 14.1 Decision Point 1	1	2013	1	2013
NIE 14.1 Decision Point 2	2	2013	2	2013
NIE 14.1 Lab Integration / Testing	3	2013	4	2013
NIE 14.1 Candidate Solution Integration	3	2013	4	2013
NIE 14.1 LoadEx / ValEx	4	2013	4	2013
NIE 14.1 CommEx (1 week)	4	2013	1	2014
NIE 14.1 Pilot (1 week)	1	2014	1	2014
NIE 14.1 Event	1	2014	1	2014